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ORIGINAL ARTICLE

MONITORAMENTO E RASTREABILIDADE DE ARTIGOS ESTERILIZADOS NO BLOCO OPERATÓRIO

MONITORING AND TRACEABILITY OF STERILIZED ITEMS ON THE OPERATING BLOCK

MONITOREO Y RASTREABILIDAD DE ARTÍCULOS ESTERILIZADOS EN EL BLOQUE OPERATORIO

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RESUMO

Objetivo*:** avaliar o conhecimento da equipe multiprofissional do bloco operatório sobre os critérios de monitoramento e rastreabilidade dos artigos esterilizados. ***Método*:** trata-se de um estudo quantitativo, descritivo, exploratório, tipo pesquisa de campo, com corte transversal, com cinco participantes. Elaborou-se, para a coleta dos dados, um questionário autoaplicável e os dados foram tabulados com no programa *Excel* da *Microsoft*®, versão 2016. Apresentam-se os resultados em forma de tabela analisando-os e confrontando-os com a literatura. ***Resultados*:** observou-se que, para 49 (61,2%) participantes, a fita zebrada garante que o artigo está estéril e a maioria (50=62,5%) dos participantes referiu desconhecimento sobre a indicação de uso do indicador biológico e suas condições para a liberação do artigo esterilizado. ***Conclusão: considera-se importante o fortalecimento da parceria do Centro de Material e Esterilização com o bloco operatório para assegurar medidas que favoreçam o entendimento dos profissionais acerca dos critérios de monitoramento e rastreabilidade e, também, contribui para o conhecimento das condições ótimas dos produtos odonto-médico-hospitalares que serão utilizados na assistência em saúde. ***Descritores*:** Esterilização; Centro Cirúrgico; Educação em Saúde; Equipe de Assistência ao Paciente; Enfermagem; Saúde.

ABSTRACT

Objective: to evaluate the knowledge of the multiprofessional team of the surgical suite on the criteria for monitoring and traceability of sterilized articles. Method: This is a quantitative, descriptive, exploratory, cross-sectional field-type study with five participants. A self-administered questionnaire was prepared for data collection and the data were tabulated with the Microsoft® Excel program, version 2016. The results are presented in tabular form, analyzing them and comparing them with the literature. Results: it was observed that, for 49 (61.2%) participants, the zebra strip ensures that the article is sterile and the majority (50 = 62.5%) of the participants reported not knowing about the indication of use of the biological indicator and their conditions for the release of the sterilized item. Conclusion: it is considered important to strengthen the partnership of the Material and Sterilization Center with the operative block to ensure measures that favor the professionals' understanding of the criteria of monitoring and traceability and also contributes to the knowledge of the optimal conditions of the dental products -médico-hospitalares that will be used in health care. Descriptors: Sterilization; Surgery Center; Health education; Patient Assistance Team; Nursing; Health.

RESUMEN

Objetivo: evaluar el conocimiento del equipo multiprofesional del bloque operatorio sobre los criterios de monitoreo y rastreabilidad de los artículos esterilizados. ***Método:*** se trata de un estudio cuantitativo, descriptivo, exploratorio, tipo investigación de campo, con corte transversal, con cinco participantes. Se elaboró, para la recolección de los datos, un cuestionario de autoaplicación y los datos fueron tabulados con en el programa Excel de Microsoft®, versión 2016. Se presentan los resultados en forma de tabla analizándolos y confrontándolos con la literatura. ***Resultados:*** se observó que, para 49 (61,2%) participantes, la cinta cebrada garantiza que el artículo está estéril y la mayoría (50 = 62,5%) de los participantes mencionó desconocimiento sobre la indicación de uso del indicador biológico y sus condiciones para la liberación del artículo esterilizado. ***Conclusión:*** se considera importante el fortalecimiento de la asociación del Centro de Material y Esterilización con el bloque operatorio para asegurar medidas que favorezcan el entendimiento de los profesionales acerca de los criterios de monitoreo y rastreabilidad y también contribuye al conocimiento de las condiciones óptimas de los productos odonto-médico-hospitalarios que serán utilizados en la asistencia en salud. ***Descritores*:** Esterilización; Centros Quirúrgicos; Educación en Salud; Grupo de Atención al Paciente; Enfermería; Salud.

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INTRODUCTION

It is understood that the hospital infection is that which is acquired after admission to a hospital or health institution, as long as it may be related to hospitalization or health care provided. Health-care-related infection has been widely discussed in the literature because of the risk that threatens patient safety and quality of care.[1-2]

In the search for quality of care by some authors, the need for improvements in health care during the perioperative period due to the various invasive procedures performed that provide greater risk of contact with microorganisms and, consequently, a greater risk for development of infections.[3-5]

For surgical procedures, articles that come into direct contact with the surgical site were classified as critical articles and are therefore required to be submitted to the sterilization process for the elimination of all forms of microbial life, minimizing patient exposure to the risk of infection.[6-7]

It is necessary, for the safe reuse of these materials, to have actions that include cleaning, performance evaluation test, disinfection or sterilization that guarantee the safety in its use, also inserting quality control at all stages.[8-9]

One refers to Resolution Collegiate Board N. 15 of 2012.10 that the Material and Sterilization Center and/or the Processor Company are responsible for processing articles with quality indicators and documenting the sterilization process to ensure the traceability of products.[10]

In addition, in order to validate the effectiveness of the sterilization process, all stages of qualification must be evaluated, adequately certifying the traceability parameters before and after the opening of the material for invasive procedures.[7,10] It is considered that health care-related infections represent an important public health problem, since they reflect an increase in morbidity and mortality rates, length of hospital stay, and expenses with diagnostic and therapeutic procedures.[11]

In this perspective, it is essential to rigorously monitor the stages of the reprocessing of the articles for the validation of the process, especially of continuing education in service, in order to prepare and train professionals to perform this function, to guarantee an exempt product of contaminants and that contributes to a safe assistance to the patient during the procedures.[7,10]

Thus, when considering the relationship between hospital infection control and the criteria for the traceability of sterile articles, few studies assess or guide the health team about the validation and optimal conditions of sterilized articles.

It is understood, therefore, that the processing of medical and hospital products contributes to the actions of prevention and control of infections and therefore, besides knowing the occurrence of hospital infections, [12] it is necessary that health professionals understand the importance the traceability of sterilized articles to be used during health care.

OBJECTIVE

- To evaluate the knowledge of the multiprofessional team of the operating room on the criteria for monitoring and traceability of sterilized articles.

METHOD

This is a quantitative, descriptive, exploratory, field-type, cross-sectional study developed in the operating room of a public hospital located in Recife (PE), Brazil.

As professional participants of the multiprofessional team working in the operating room of this hospital, as research participants, the sample was non-probabilistic by adhesion. As inclusion criteria, professionals of the multiprofessional team (surgeons, bucomaxillofacial surgeons, nurses and nursing technicians) working in the hospital operating room, regardless of the employment relationship, were defined as inclusion criteria. Professionals who exclusively work in urgency and emergency surgeries were excluded.

For the collection of data, a self-administered questionnaire based on the Collegiate Board Resolution N. 15 / 2012,[10] was prepared, which provides for the requirements of good practices for the processing of health products and for literature on the subject, composed of 12 questions, five related to the characterization of the participants and seven involving specific knowledge about the topic addressed.

A pilot test was conducted with five participants aiming at ensuring and trustworthiness of understanding and response to each of the issues. After this stage, the need to readapt the language of the questions and to reformulate some alternatives was verified. The data were collected from August to October 2016, tabulated with the help of

Microsoft® Excel, version 2016, and analyzed in comparison with the literature.

The project was approved by the Research Ethics Committee of the University of Pernambuco under the number of opinion 1,472,420. All the ethical points of Resolution N. 466/2012 of the National Health Council were respected. Research participants were informed about the purpose and purposes of the study and they participated through the signing of the Free and Informed Consent Term.

RESULTS

The sample was composed of 80 participants from the multiprofessional team working in the operating room, among which ten (12.0%) were nurses; 43 (54.0%), nursing technicians; 20 (25.0%), surgeons and seven (9.0%), oral and maxillofacial surgeons, being the majority (59 = 74.0%) female, with 21 (26.0%) male participants; in relation to age, 25 (31.0%) professionals predominated in the age group of 30 to 39 years; however, there was participation of 17 (21.0%) aged 40 to 49 years; 15 (19%), 18 to 29 years old; 12 (15.0%), aged 50 or over, and 11 (14.0%) did not respond; 37 (46.0%) of the participants work between one and ten years; 17 (21.0%) with time greater than or equal to twenty years; nine (11.0%), from ten to twenty years; 11 (14.0%) with less than or equal to one year of professional experience and six (8.0%) did not respond.

In a more detailed analysis, based on the absolute number of professionals, 53 (66%) participants belonged to the Nursing team and the time of entry into the labor market to 50.0% is less than one decade of professional practice, with six (21.0%) having a performance time of 20 years or more.

As regards the concept of sterilization, the definition of sterilization for the vast majority of professionals (94.0%) is: the process of destruction or elimination of all forms of micro-organisms; however, five (6.0%) reported that it is the process of elimination and destruction of pathogenic or non-pathogenic microorganisms, except for bacterial spores.

In relation to the process media in which sterilization can be performed, most professionals (34 = 42.0%) believe that it is achieved through biological, physical and chemical processes. It is observed that, for 27 (34.0%) professionals, sterilization is obtained by physical, chemical and physical-chemical processes; 12 (15.0%), by biological and physical-chemical processes, and three (4.0%) by physicochemical only, and four (5.0%) professionals did not answer the question.

It was stated with regard to the questioning whether the zebra strip ensures that the material entering the autoclave is sterile, by 49 (61.0%) participants, that the zebra strip ensures that the product that was processed, is sterile and ideal for use. However, 28 (35%) participants affirm that the zebra strip does not guarantee that the article is sterile and, in relation to the professionals' answers, when asked about the biological indicator, indication of use and time for the release, these are presented, below, in table 1.

Table. Characterization of the multiprofessional team of the operating room of a public hospital according to the inquiry about the knowledge of the biological indicator, indication of use and how long after it can be released. Recife (PE), Brazil, 2016.

Variables	n (%)
Knowledge about the biological indicator	
Quality control	22 (28.0)
Consisting of biological material	1 (1.0)
They did not answer	57 (71.0)
Indication of the use of the biological indicator	
Validation of sterilization	8 (10.0)
Implant materials (OPME)	13 (16.0)
They did not answer	59 (74.0)
Time to release the biological indicator (hours)	
≤1	5 (6.0)
1<to ≤ 3	16 (20.0)
6	3 (4.0)
24 ≤ to ≤ 48	6 (7.0)
They did not answer	50 (63.0)

It can be observed in Table 1 that 16 (20.0%) participants consider from one to three hours the recommended time for the release of the material according to the result of the biological indicator; six (7.0%) reported from 24 to 48 hours the time for the release of reprocessed articles and 50 (63.0%) professionals did not respond to the question.

DISCUSSION

In any type of health care, a series of actions are recommended that provide quality and safety in their services to improve the quality of health care.[13] It is fundamental that the institutions, in the provision of care, carry out activities minimizing the occurrence of healthcare-related infections, which are indispensable for quality care.

It is known that health care products, such as instrumentation and equipment accessories, can be transmission vehicles for infectious agents.[14] The Material and Sterilization Center is dedicated to avoiding and disrupting the chain of transmission of infections with the processing of the articles that will be used in the.[15]

It is necessary, in order to interrupt the chain of transmission of infections, the adherence of measures that guarantee good practices in the processing of health products, being indispensable the training with continuous education of the health professionals on the process of sterilization, conservation and utilization of articles sterilized in care.[10,15-16]

It is inferred that the sterilization process aims at the destruction of all life forms and their development capacity during the conservation and use of the product used in health care.[7] Thus, the results show that professionals present knowledge about the concept of sterilization, so it may be related to recent professional training, since most of them are less than 10 years old in health services.

It was found that the lack of knowledge about the means of the processes for sterilization was similar, regardless of the professional category. It was found that only three (30%) of the ten nurses participating in the study recognized the processes for performing sterilization. It is pointed out in the literature that, in order to choose the sterilization method, it is necessary to consider the characteristics of the sterilizing agent and the nature of the product to be processed, since, thus, sterilization can be carried out by means of physical, chemical or physical-chemical processes.[7]

In order to complement the safety of the sterilization process, the Board of Directors Resolution 15/2012.[10] on the requirements of good practices for the processing of health products is contemplated, contemplating that, in order to carry out the monitoring of the sterilization process , physical, chemical and biological process indicators are used.

When analyzing the answers of most professionals, 34 (42.0%) identified biological, physical and chemical processes as means of processes. It is noted that this option is similar to the indicators of sterilization monitoring, and this is probably because the participants rely on the baggage of knowledge they have, since it is built in the social relations associated with the information transmitted by the educators added to the

personal experiences experienced in health services.[17]

Thus, by integrating theory and practice, skills about the sterilization process are provided, and such processes should routinely be monitored for the maintenance of asepsis through physical, chemical and biological parameters.[7]

Zebra tape classified as a Class I chemical indicator is believed to provide identification of products that have undergone sterilization processes. Thermochromic paints impregnated with adhesive tapes on the surgical and tyve-grade packages and on the labels for the identification of health products.[7,18]

It is considered that the process indicator, such as zebra tape, does not guarantee sterilization, and the article may not be exempt from the presence of a microorganism. However, it is recommended that all packages be identified with a process indicator to indicate that the product has been processed but does not certify that the optimal conditions for sterilization have been adequately achieved.[7,18]

It is important, to ensure the quality and safety of health care, to rely on a set of activities that provide prevention, minimize harm and ensure health. Due to the complexity of the surgical procedures performed in inpatients or outpatient services, the significant existence of surgical site infections.[15,19]

Surgical site infections are conceptualized as infections related to surgical procedures with or without the placement of implants such as orthoses, prostheses and special materials. These infections can be classified as: superficial incisional; deep incisional and organ / cavity.[19] It is observed that the early discharge of the patient from the health service can make it difficult to detect infections in surgical procedures considered to be easy to resolve or with potential for reduced contamination. As a result, it is advisable to strengthen measures that ensure good practices and adherence to the protocol of safe surgery in all interventions.[15,19]

Strengthening and favoring, through the knowledge on biological indicators, actions of good practices in health care. In relation to biological indicators, broad conceptual questions regarding the function of the indicator have been described, which is characterized by a standardized preparation of bacterial spores that will be used according to the sterilization process to be performed.[7,10] There are three types of biological indicators, known as first, second and third generation, which differ in incubation period and presentation form.[7]

It is related to the answers on the indication of the use of the biological indicator by professionals, the use in orthoses, prostheses and special materials identified as implant materials, and the majority of the participants are unaware of the indication of use because of the ten nurses of the study, only one (1.0%) reported lack of knowledge about the biological test, indication of use and recommended monitoring time.

The effectiveness of the processing of articles through sterilization with the destruction of bacterial spores should be determined from the reading of the biological indicators that are used to monitor sterilization cycles.[20] The importance of reading the biological indicator after the incubation period related to its generation, identifying positivity or negativity of the microbial growth, since its technology is indispensable to guarantee security to the monitoring of the sterilization.[7,20]

It was found in the results of this research with the multiprofessional team that only one (1%) participant reported that the biological indicator is used in the first sterilization cycle of the day and in all loads with implant materials, such as plaque and screws, and that the reading of the result is obtained in three hours, being verified the positivity or the negativity in the growth of microorganism.

It is known that the third-generation indicator, used in the study hospital, is characterized by being composed of self-contained spores, with innovation in the methodology of detection of bacterial growth and biological reading of one to three hours.[7]

The multiprofessional team participating in the study are unaware of essential information on biological indicators, and this lack of knowledge about the biological indicator can influence the dynamics of the service and the quality of care provided in the operating room.

It is therefore imperative that professionals working in direct care in the operating room have knowledge about the quality indicators of the sterilization process, especially the chemical and biological indicators, due to the contact and daily handling of the processed articles and still need to recognize when a material is not suitable for use, corroborating the control of infections.

CONCLUSION

It is therefore imperative that professionals working in direct care in the operating room have knowledge about the quality indicators of the sterilization process, especially the chemical and biological indicators, due to the contact and daily handling of the processed articles and still need to recognize when a material is not suitable for use, corroborating the control of infections.

It was observed the similarity in the professionals' ignorance, regardless of the category, of the methods of sterilization; however, it is necessary to reflect on the partnership between the Material and Sterilization Center and the operating room to offer contributions mainly in the quality assistance and risk reduction for users.

There is evidence of the need for continuing education actions in health on the reprocessing of articles and factors that involve the traceability of materials with ideal conditions for use in care.

It is suggested, as it is a topic still little explored in the databases, that new research is carried out with a multiprofessional team approach due to the possible contributions that may offer change in the health services.

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