Delirium in intensive care: use of the 'Confusion Assessment Method for the Intensive Care Unit' by the nurse

Delirium em terapia intensiva: utilização do Confusion Assessment Method for the Intensive Care Unit pelo enfermeiro*

El delirio en cuidados intensivos: confusión con el Método de Evaluación de la Unidad de Cuidados Intensivos por las enfermeras

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ABSTRACT

Objective: The study's goal has been to gain further understanding regarding the nurses' grasp about the critical patient undergoing delirium events, and also the use of the Confusion Assessment Method for the Intensive Care Unit. **Methods:** It is a descriptive-exploratory study, also prospective and with both qualitative and quantitative approach. The sampling was the nurses of an Intensive Care Unit; the sample consisted of 16 nurses who accepted to participate in all stages of the research. A pretest and another post-test were performed applying the data collection instrument consisting of 1 discursive question and 8 objective ones. In order to perform the data analysis were used content analysis and basic statistics. The research was approved by the Research Ethics Committee from the *Hospital Universitário Pedro Ernesto*, under the Legal Opinion No. 1.360.441. **Results:** In a comparison between the pretest and post-test, it was noticed that after the test the group was more prepared to identify delirium and with a higher degree of knowledge about the topic. **Conclusion:** The content update was shown as a tool for transforming clinical practice. It is very important to emphasize the need of continuing education in order to ensure the promotion of knowledge and quality in nursing care.

Keywords: Intensive Care, Nursing, Cognitive Disorders.

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RESUMO

Objetivo: compreender o conhecimento dos enfermeiros sobre o delirium no paciente crítico e a utilização do Confusion Assessment Method for the Intensive Care Unit. **Métodos:** Estudo exploratório-descritivo, prospectivo, com abordagem mista. Teve-se como população os enfermeiros de uma unidade de terapia intensiva, a amostra constituiu-se de 16 enfermeiros que aceitaram participar de todas as etapas da pesquisa. Realizou-se um pré e pós-teste aplicando-se o instrumento de coleta de dados constituído de 1 pergunta discursiva e 8 objetivas, para análise usou-se análise e conteúdo e estatística básica. A pesquisa foi aprovada pelo comitê de ética em pesquisa do Hospital Universitário Pedro Ernesto, sob o parecer de nº1.360.441. **Resultados:** Num comparativo entre o pré e pós-teste, o grupo se mostrou mais preparado para identificar o delirium e com maior grau de conhecimento acerca da temática. **Conclusão:** atualização mostrou-se como uma ferramenta de transformação da prática clínica. Destacando-se a importância da educação permanente para garantir a qualidade na assistência de enfermagem.

Descritores: Terapia Intensiva, Enfermagem, Transtornos Cognitivos.

RESUMEN

Objetivo: Comprender el conocimiento del delirio de las enfermeras en los pacientes críticamente enfermos y el uso de la Confusión Método de Evaluación de la Unidad de Cuidados Intensivos. **Métodos:** Estudio prospectivo exploratorio y descriptivo, con enfoque cualitativo y cuantitativo. Tuvo como enfermeras población una unidad de cuidados intensivos, la muestra está formada por 16 enfermeras que aceptaron participar en todas las etapas de la investigación. Se realizó una pre-y post-test mediante la aplicación del instrumento de recolección de datos que consta de una cuestión discursiva y 8 objetiva para el análisis utilizado para el análisis y el contenido y las estadísticas básicas. El estudio fue aprobado por el Comité de Ética en Investigación del Hospital Universitario Pedro Ernesto, en opinión de nº1.360.441. **Resultados:** En una comparación entre el pre y post-test, el grupo estaba más preparado para identificar el delirio y con un mayor grado de conocimiento sobre el tema. **Conclusión:** La actualización se muestra como una herramienta de transformación en la práctica clínica. la importancia de continuar el resaltado de la educación para garantizar la promoción del conocimiento y la calidad de los cuidados de enfermería.

Descriptores: Cuidados Intensivos, Enfermería, Trastornos del Conocimiento.

INTRODUCTION

Delirium is defined by the American Psychiatric Association (APA) as a disruption of consciousness and cognition that develops over a short period of time and floats throughout the day and night.[1] It is classified as a transient organic mental syndrome with abrupt onset and impairment of cognitive functions, bringing about changes such as reduced level of consciousness, lack of memory, intention and disorder in the sleep-wake cycle. It can occur in an overactive, hypoactive or mixed way. The incidence increases with age, with the presence of cognitive deficit, fragility, severity of the disease and comorbidities. Emergency departments, intensive care units and postoperative sectors have the highest rates of delirium, which can lead to a series of complications, including cerebral insufficiency and cognitive impairment after hospital discharge.[2]

It is the most common form of acute brain dysfunction in Intensive Care Units (ICU) and occurs in about 70% to 87% of patients admitted to ICUs, where more than 50% are elderly. For many years underestimated and often unrecognized as a form of cerebral dysfunction, it is currently recognized as an important factor in morbidity and mortality in ICUs.[2-3]

Delirium is also an independent predictor of intercurrences and is considered a marker of poor prognosis. It is related to long-term cognitive impairment in 22 to 76% of the cases of intensive care patients, which may occur during or after hospitalization. Furthermore, the high mortality rates caused by delirium can be compared to those of acute myocardial infarction or sepsis, which shows the dimension of this problem for intensive care.[4]

Other intercurrences related to delirium and their economic impact and in the treatment of the patient are described: self-extubation, removal of catheters and invasive devices, increase in the length of hospital stay, increased costs generated by hospitalization.[2,4-5]

Studies that involve the theme become relevant to contribute to the clinical practice of the nurse, implying significantly in the quality of care and morbidity and mortality of the patients. It is expected with this work, contribute to the construction of new knowledge and transformation of the practice. Knowing the relevance of delirium and its repercussions on critical patient health favors the implementation of effective nursing care that aims to reduce hospitalization days, costs generated and also the morbidity and mortality of critical patients.

Based on Faria and Moreno research,[3] the main measure to change this paradigm is to search, evaluate and identify. It is fundamental to implement a protocol for the systematic evaluation of the presence of delirium in the ICUs. In order to do this, they suggest the use of validated scales such as the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU), together with the definition of objectives and interventions in the face of findings in clinical practice.

Given the above, the study's aim was to understand the nurses' understanding about delirium in the critical patient and the use of the CAM-ICU method.

METHODS

It is a descriptive-exploratory study, also prospective and with both qualitative and quantitative approach. The purpose of the descriptive-exploratory character is to create a new vision of a particular problem, in other words, to provide greater familiarity, aiming to make it more explicit or to constitute hypotheses, besides describing characteristics of a certain population and/or phenomenon or establishing relations between variables.[6]

The mixed approach offered the possibility of qualitative and quantitative data processing. The qualitative data were treated according to the content analysis proposed by Minayo[7] in which floating readings are carried out and the categories that accommodate the findings are subsequently elaborated. And the quantitative data from objective question answers were treated through basic statistics, discussed from the construction of charts and tables. Additionally, the Survey Monkeys® software, which is an online cloud-based research development company founded in 1999 by Ryan Finley, was used for data processing.

The research scenario was the General ICU from a University Hospital, located in *Rio de Janeiro* city. It is a structured unit with 10 beds and it is a field for residence in several multiprofessional areas. The nurses' population is composed of 3 day-by-day care workers, 12 nurses, 8 resident students in the second year and 7 resident students in the first year of study. The sample was given by 16 nurses from this universe of 30, who met the criteria for selection as follows: to be a nurse; be active in the General ICU service scale; accept to participate by signing the Free and Informed Consent Term of all the research stages.

The research covered 4 stages, as follows: the first one was the pretest in order to answer the first specific objective of assessing the group's knowledge about delirium and the application of the CAM-ICU method. The data collection instrument (DCI) was answered by the participant during an opportune moment during the work shift.

The second step was to update the nursing team in order to achieve the second specific objective of performing a training to update on the delirium issue and application of the CAM-ICU method for nurses and nursing technicians of the unit. Although they were not part of the study sample, the nursing technicians were invited to participate in this phase to multiply and promote the knowledge of the team as a whole.

The third step was the post-test in order to reach the third specific objective of evaluating once more the nurses' understanding about the identification and management of delirium and on the application of the CAM-ICU method, after updating. Through the same DCI already applied in the pretest. The participation of the 16 nurses who participated in the previous stages was attended by all participants.

The fourth step was the implementation of the CAM-ICU method in the unit in order to achieve it, which was the fourth specific objective. The protocol for applying the CAM-ICU flowchart was printed and stored in the "protocols and nursing routines" folder for access by all team members, when necessary. This is a folder maintained at the nursing station and contain all standard operating protocols, routines, guidelines for frequently asked questions, scales and flowcharts used in the unit.

The analysis of the data took advantage of the mixed approach. For the treatment of subjective data a qualitative approach was used, through the proposal of analysis of thematic content by Minayo,[7] which is based on floating readings of the participants' answers, respecting the integrity of their expressions and the speech essence, then proceed with operations of fragmentation of the text in units, later, to be regrouped in either classes or categories. The treatment of the objective data had a quantitative approach, through basic statistics using the Survey Monkeys® program, presenting the main results in charts and tables.

Regarding ethical and legal aspects, they all were respected as provided in the Resolution No. 466 of December 12th, 2012 from the National Health Council.[8] This study was evaluated and approved by the Research Ethics Committee of the *Hospital Universitário Pedro Ernesto,* under the Legal Opinion No. 1.360.441.

RESULTS AND DISCUSSION

The selected sample consisted of 16 nurses who answered the DCI in the pretest and in the post-test, totalizing 32 DCI answered. The sample consisted of female nurses, out of whom 38% were resident students in the first year, followed by 31% in the second year, 25% were on-duty and 6% were day-by-day workers. Among the nurses who participated in the study, there was a predominance of intensive care for up to 6 months and 1 year to 6 years in 38%, respectively. Regarding the schooling, 14% of these participants are students of a Specialization Course in Intensive Care.

The first questioning to the group of participants through the DCI was "what do you understand by delirium?". This was a discursive question, the results obtained were treated through content analysis proposed by Minayo[7] and distributed in the categories presented in Table 1.

Table 1 – Comparison of the data obtained in the pretest and the post-test regarding the nurses' understanding about delirium

Pretest		Post-test	
Categories	%	Categories	%
Delirium as a neurological disorder	75%	Delirium as a neurological disorder	88%
Delirium and prolonged hospitalization	25%	Delirium and prolonged hospitalization	50%
Delirium and hyperactivity or hypoactivity	25%	Delirium and hyperactivity or hypoactivity	31%
Delirium and the use of medicines	19%	Delirium and the use of medicines	13%
Lack of knowledge about the topic	6%	Lack of knowledge about the topic	0

Source: Research data, 2016.

The data presented in the table above were obtained through the first DCI question: "What do you understand by delirium?" The answers gathered in categories showed a change of concept in the before and after the update. It should be noted that despite the higher percentage of delirium as a neurological disorder, both in the pretest and post-test, the other categories, except for the category 4, showed a percentage increase in a comparison between the research stages.

The second DCI question asked the participant if they had already detected any cases of delirium in the unit, 31% of the group said they had already detected patients presenting with delirium. These participants described how that experience was perceived. In summary, the answers obtained showed descriptions related to a common sense framework for the identification of neurological disorders, there was no clarity to accurately describe that it was delirium and no type of scales were mentioned for this detection. The words that appeared the most were: agitation, withdrawal of devices, alteration of the neurological pattern, and disorientation. Showing symptoms that may appear in multiple neurological changes.

Regarding the preparation to identify patients with delirium, during the pretest the majority of the nurses did not feel prepared (87.5%), they attributed this demand to lack of knowledge about the subject and the lack of knowledge about the applicability of validated scales.

After the training there was a significant change in the preparation for delirium detection, 87.5% of the participants stated that they were prepared to identify patients with delirium in the unit, nurses expressed a strong relation of this change the participation in the update and the deepening on the topic. In addition to the answers obtained in question 1 of the DCI, it can be inferred that the group acquired a wider and more consistent knowledge about the matter.

The following sequence of Graphs 1, 2, 3 and 4, present the data obtained in 4 of the objective questions, making a comparison between the alternatives marked in the pretest and post-test for each question. As can be seen, in all the questions in the DCI we reach a greater number of correct answers in the post-test, we can also highlight the decrease in the choice of the "I do not know" alternative in the post-test phase.

Graph 1 – Comparison of the answers obtained in the pretest and post--test regarding the applicability of the CAM-ICU method
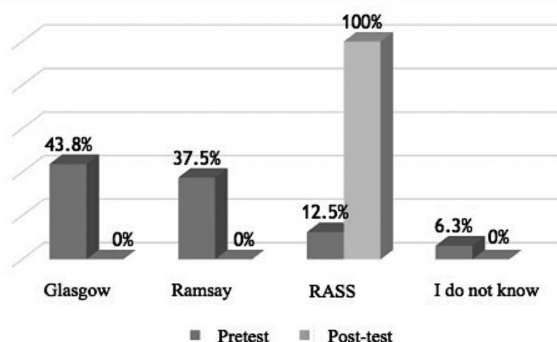
Source: Research data, 2016.

Graph 1 shows a comparison between the responses of the research participants during the pretest and the post-test. The question was as follows: the first step in order to do the CAM-ICU method is the application of what scale? The correct answer to this question is the RASS scale. From the analysis of the graph it is possible to observe that after participating in the update, all the nurses were right to answer this question.
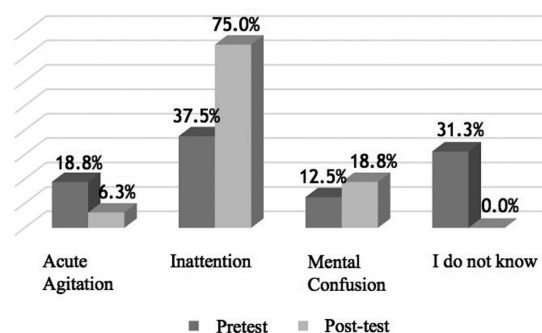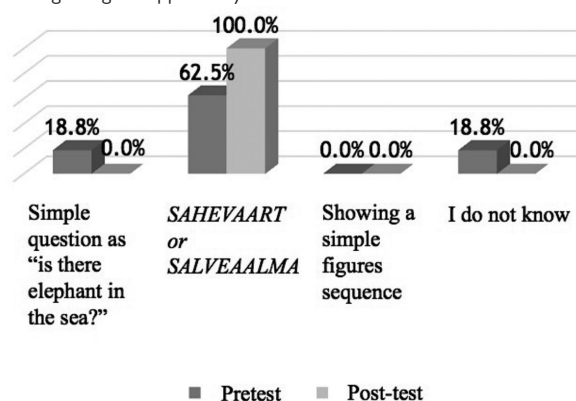
Graph 2 – Comparison of the answers obtained in the pretest and post--test regarding the applicability of the CAM-ICU method

Source: Research data, 2016.

Graph 2 displays a comparison between the responses of the research participants during the pretest and the post-test. The question was as follows: the second stage of the CAM-ICU flowchart refer to? The correct answer to this question is the disturbance of inattention. The graph shows that during the pretest most nurses (37.5%) correctly answered the question, however 31.3% did not know the answer. After the update the percentage of right answers has changed significantly (75%).

Graph 3 – Comparison of the answers obtained in the pretest and post--test regarding the applicability of the CAM-ICU method
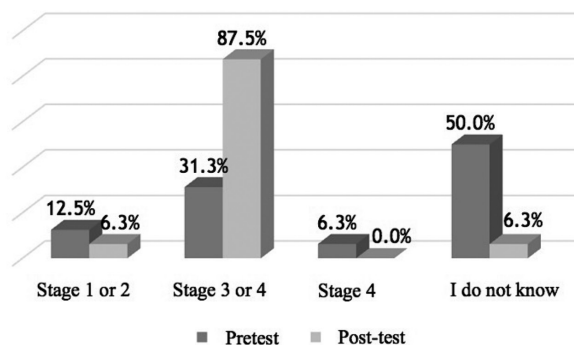

Source: Research data, 2016.

Graph 3 presents a comparison between the responses of the research participants during the pretest and the post-test. The question was as follows: the auditory attention test in the CAM-ICU flowchart occur through the application of which conduct? The correct answer to this question is "SAHEVAART or SALVEAALMA". From the analysis of the

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graph it is possible to observe that after participating in the update, all the nurses were right to answer this question.

Graph 4 – Comparison of the answers obtained in the pretest and post--test regarding the applicability of the CAM-ICU method

Source: Research data, 2016.

Graph 4 shows a comparison between the responses of the research participants during the pretest and the post-test. The question was as follows: The CAM-ICU flowchart is composed of 4 steps. At what stage is the detection of delirium performed? The correct answer to this question is step 3 or 4. From the analysis of the graph it is possible to observe that after participating in the update, 87.5% of the nurses had a correct answer to this question, while during the pretest half of the group did not know the answer.

When questioned about the importance of implementing protocols that define strategies for the detection of delirium in the unit, all participants (100%) affirmed that they consider important and necessary their implementation.

In order to reach the group's understanding about delirium, what was understood when dealing with delirium was questioned to them. During the pretest the answers were nonspecific, presenting descriptions that could fit into other cognitive disorders, without mentioning fundamental concepts and symptoms of the syndrome. In the post-test, which happened after the information update, one can observe more complete answers, that contemplated the syndrome as a whole, more coherent and consistent not based on common sense and practical experience only.

According to the American Guidelines for Pain Management, Agitation and Delirium in adult patients in an ICU, delirium is a syndrome, with acute onset, characterized by cerebral dysfunction and fluctuation or alteration of the mental baseline, inattention, disorganized thoughts and level of consciousness.[9]

A common misconception is that patients with delirium are hallucinations and delusions and therefore delirium is often confused with hallucination, but there is a clear differentiation between the two terms. Hallucination is a neuropsychiatric symptom related to mental illnesses, such as schizophrenia, in which there is inability to distinguish the false from the true plus to the delusional hallucinations. And delirium is a diagnosis of acute, sudden onset neurological alteration that can even present in a hypoactive way, without the manifestation of periods of agitation (hypoactive delirium). Hyperactive delirium may be more confused with hallucinations and delusions, whereas hypoactive delirium is often confused with lethargy and sedation.[2,9]

Clear understanding of the syndrome, preparation for management and its detection, prevention, treatment and differential diagnosis are fundamental factors for intensive care nursing. The nurse is the professional who provides continuous assistance to the critical patient, being indicated and enabled for rapid detection of abrupt neurological changes. Insufficient knowledge of this issue contributes to the increase of underdiagnosis in intensive care service.

Epidemiological studies show that delirium can reach about 80% of patients admitted to intensive care, 60 to 90% of cases are diagnosed by nurses, but the diagnosis is established in only 30 to 50% of the cases, often being underdiagnosed, for being confused with other syndromes. The relevance of studying delirium is due not only to its high prevalence, but also to the impacts generated during hospitalization, as well as after hospital discharge.[2,11]

The CAM-ICU method is proven to be effective in the detection and monitoring of delirium in intensive care practice, and its wide use in these sectors is essential. The nurse has complete autonomy for the application of the method and must pay attention to the careful neurological evaluation to minimize unfavorable clinical outcomes to his patients. The use of the CAM-ICU and a neurological approach helps to prevent and detect risks to the development of delirium, directly impacting the hospitalization time, prognosis and costs generated by the hospitalization of critically ill patients.[9]

During the pretest, nurses were questioned if they had already detected a case of delirium in the unit, 30% of the participants stated that they had already detected some patients with delirium, but when describing the strategy for this detection, none of the participants mentioned the use of methods, flow charts or validated scales to support this diagnosis. From the statements it was possible to verify that the strategy used was focused on the patients' symptomatology in an observational way, based on empirical findings that either could or could not actually portray the delirium state. Methods, such as CAM-ICU, have high sensitivity for the detection of delirium and are recommended to be applied for early and safe detection of the syndrome, since it is a neurological alteration difficult to diagnose. Clinical surveillance is fundamental, but by taking scales validated by the literature, it is possible to provide a safe, high quality and science-based care.

Diagnosing delirium is not an easy task; it can eventually be confused with other types of mental changes such as dementia, delirium and effects of sedation, so prior knowledge of the patient's neurological history is crucial. The diagnosis is eminently clinical, at the bedside and there is insufficient evidence for diagnostic confirmation through imaging tests; In addition to the acute clinical picture, the clinical history should be carefully evaluated. Applying scales that test atten-

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tion, agitation, mental confusion, language, such as the validated CAM-ICU method, is fundamental for the diagnosis.[3]

By using the CAM-ICU method it is possible to identify delirium quickly and objectively. The instrument is characterized by being easy to apply, has high sensitivity and specificity, does not require complex training to use it and it only takes 2-3 minutes for its application. CAM-ICU is an important instrument for the detection of delirium in ICUs and its use by the team results in a more effective control of severe patients who present a potential risk for the development of delirium.[10]

Regarding the preparation to identify patients with delirium, 87.5% of the participants reported not being prepared to identify delirium in the unit; From their speeches a strong relationship was observed with the lack of training, updating and recycling on the subject to substantiate this conduct. After the update made during the course of the research, this question changed significantly, when only two of the 16 participants stated that they did not feel prepared yet, to make the diagnosis, because there was still a question to be answered. While 88% of the group reported feeling prepared, now after training, to detect patients at potential risk or in a delirium in the sector. In justifying this change, the vast majority of participants referred to training as a contributing factor. Faria and Moreno[4] suggest that early recognition of delirium is directly related to the degree of knowledge of the health team. Therefore, education is the basic step for effective intervention.

The data generated from the 4 subjective questions, presented in Graphs 1, 2, 3 and 4, had the objective of measuring the knowledge or lack of knowledge of the group of nurses about the CAM-ICU method, since these were questions that required the knowledge of the flowchart to be answered. When we look at the graphs that compare the percentage of hits and errors, it is clear the positive and significant change generated by the proposed update to the group. During the pretest, a significant percentage was found for the "I do not know" alternative, whereas in the post-test it only appeared in 6% of the answers. The group of nurses showed a good use of the moment of training, a greater degree of knowledge and possibly a new look on the problematic of delirium for the critical patient, from the understanding of its dimension.

CONCLUSION

The knowledge of the group of nurses about the concept of delirium was coherent, but it was verified that before the training the strategies used by the group to detect delirium were not aligned with a validated method, when not disregarded they were carried out empirically by through the observation of signs that often do not represent the symptomatology of delirium, evidencing what is already brought in the literature about the underdiagnosis of the picture and about the deficits of knowledge regarding the management of delirium and the use of validated scales for its detection, such as CAM-ICU.

The updating of the nursing team was shown as a tool to change this paradigm. By discussing the significant points for the nurse care in relation to delirium, the participants reached more correct in the DCI, evidencing a greater degree of knowledge. Therefore, it was verified the importance of permanent education to ensure the promotion of knowledge and quality in nursing care.

The objectives of the work were achieved, despite the limitations found. When it comes to permanent education for the nursing team, it is often considered challenges and limitations, situations such as changes in scale prevented team members from participating in their training day, this factor decreased the quantitative of the final sample of participants and made it impossible to disseminate knowledge of the topic for the team as a whole. Thus, it is important to emphasize the need for constant updates, in alternating periods, in order to accommodate all staff.

The work contributes to the unification of the knowledge to the team and possibly with transformation of clinical practice and quality assistance, aiming at reducing negative impacts to the patient's prognosis. In addition to implementing the delirium detection protocol, the use of the CAM-ICU flow chart as a strategy of high reliability for diagnosis, as well as the main strategies and guidelines for prevention of this problem in the context of intensive care. It is also recommended that after a period of time, it would be of great value to perform the late post-test in order to evaluate once more the group's understanding, the appearance of new doubts and demands.

The relevance of studies on delirium is not only due to its high incidence but, above all, to the consequences, such as prolonging the hospitalization period, worsening the clinical picture and prognosis of the patient and generating higher costs with the treatment. Faced with this problem, it is fundamental to use strategies for its detection by the intensivist nurse. From the greater knowledge about the subject, the professionals involved in the intensive care, certainly, became more capable for the early recognition of the syndrome, then favoring the outcome of numerous patients.

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