NURSING TEAM KNOWLEDGE ON BEHAVIORAL ASSESSMENT OF PAIN IN CRITICAL CARE PATIENTS

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ABSTRACT

This investigation consisted on a prospective cross-sectional study that aimed to describe the nursing team knowledge on behavioral assessment of pain. The study was conducted in a private hospital in the city of São Paulo, Brazil, in November 2011, with nursing professionals from a general adult intensive care unit. They answered a questionnaire that contained sociodemographic data and questions related to knowledge about a behavioral assessment of pain. Descriptive data analysis was carried out and the average positive score was compared among categories using the Mann-Whitney test. Out of the 113 participants, over 70% have demonstrated knowledge of the main aspects of this assessment and there was no statistical significant difference among the professional categories. It was concluded that the knowledge of the professionals was satisfactory, but it can be improved.

Descriptors: Knowledge. Pain. Nursing, team. Intensive care units.

RESUMO

Estudo transversal prospectivo que teve como objetivo descrever o conhecimento da equipe de enfermagem sobre uma avaliação comportamental de dor. Realizado em hospital privado da cidade de São Paulo, Brasil, em novembro de 2011, com profissionais de enfermagem de uma UTI geral adulto. Estes responderam a um questionário com dados sociodemográficos e questões referentes ao conhecimento sobre uma avaliação comportamental de dor. A análise dos dados foi descritiva e a média de acertos por categoria profissional foi comparada por teste Mann-Whitney. Dos 113 participantes, mais de 70% demonstraram ter conhecimento sobre os principais aspectos dessa avaliação e não houve diferença estatisticamente significativa entre as categorias profissionais. Concluiu-se que o conhecimento dos profissionais foi satisfatório, mas pode ser aprimorado.

Descritores: *Conhecimento. Dor. Equipe de enfermagem. Unidades de terapia intensiva.*
Título: *Conhecimento da equipe de enfermagem sobre avaliação comportamental de dor em paciente crítico.*

RESUMEN

Estudio transversal prospectivo que tuvo como objetivo describir el conocimiento del equipo de enfermería con relación a evaluación del comportamiento del dolor. Realizado en un hospital privado de la ciudad de São Paulo, Brasil en noviembre de 2011 con profesionales de enfermería de una UTI general adulto. La población estudiada respondió a un cuestionario con datos demográficos y preguntas relacionadas al conocimiento sobre una evaluación de comportamiento del dolor. El análisis de datos fue descriptivo y el promedio de aciertos por categoría profesional fue comparado por el test de Mann-Whitney. De los 113 participantes, el 70% demostró el conocimiento de los principales aspectos de esta evaluación y no hubo diferencia estadísticamente significativa entre las categorías profesionales. Se concluye que el conocimiento de los profesionales era satisfactorio, pero se puede mejorar.

Descriptores: *Conocimiento. Dolor. Grupo de enfermería. Unidades de cuidados intensivos.*
Título: *Conocimiento del equipo de enfermería en la evaluación del comportamiento del dolor en el paciente crítico.*

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INTRODUCTION

The presence of pain is a common phenomenon among patients in intensive care units (ICUs)[1]. This fact is mainly due to severity and invasive procedures necessary for their treatment. It is a significant problem, because it elevates the morbidity and mortality and directly influences the quality of life of these people. The assessment on these people painful experience is not a simple procedure since it consists of multidimensional phenomenon and involves other domains such as emotional, cultural and social[2].

In ICUs, the systematic evaluation of pain and data registration are essential for monitoring patients and undertaking necessary decisions to their treatment. The appropriate use of analgesics improves morbidity and mortality rates making pain management a priority for these patients[3].

The self-report is the gold standard for pain assessment[3]. In a review of strategies for pain management in intensive care units, it was identified that 63% of patients hospitalized in these units, reported moderate to severe pain[4]. Even though the best indicator is self-report, critically ill patients are often unable to verbalize complaints and discomfort report due to the severity of the disease, the use of mechanical ventilation and sedative drugs. In this group of patients, it is important to consider the somatic equivalent and physiological of pain, which translate into specific behaviors and signs such as facial expression, protective posture and others[6].

The use of analogue scales was not effective for the assessment of pain in these patients, since 35% to 55% of nurses underestimated the pain in this population[5]. The lack of an appropriate instrument for pain assessment for patients with communication barriers interfered in optimizing the treatment of pain. The implementation of a tool for behavioral pain assessment for these patients improves pain control, assessment, registration of events by professionals and increases worker reliability[1]. With the development of tools such as the Critical Care Pain Observation Tool (CPOT), the Behavioral Pain Scale (BPS), Non Verbal Pain Scale (NVPS) and Pain Assessment and Intervention Notation (PAIN) comprising clinical and behavioral signs for the evaluation of pain, these aspects can be addressed by professionals who work in the ICU. In Brazil, up to now, these tools have not been translated and validated, so, this study may be a possibility for health professionals and it should be investigated through an appropriate methodology. This can be decisive for the assessment of pain in the country. This important contribution means that health professional would no longer need to adapt resources of behavioral assessment of pain by the institutions, as it happens nowadays.

As the nursing team spend more time with the patient, being present in every moment of care, it is essential for nurses to properly recognize pain signals to intervene appropriately in its relief[6], becoming responsible for triggering the actions that will solve the problem.

In our daily practice, we have observed that the nursing team of the ICU may not recognize the trivial aspects of the management of pain in patients receiving sedation or with communication barriers. Additionally to this fact, the notes are often incomplete and suggest that the team does not know how to differentiate sedation from analgesia.

This study aimed to describe the knowledge of the nursing team of the intensive care unit of a private hospital in the city of São Paulo in relation to the use of a behavioral assessment of pain that was applied in practice for patients with communication barriers.

METHODS

This is a prospective cross-sectional study conducted in an adult general intensive care unit of a private hospital located in the central region of São Paulo, Brazil.

The study population consisted of all employees of the nursing team (nurses and nurse technicians) with time on the job of more than six months that were not on leave during the period of data collection.

The studied hospital performs the systematic assessment of pain and defined in its Policy of Pain Management, the behavioral assessment for patients who are sedated, in coma, with cognitive alterations and communication barriers. This assessment was made by the hospital Pain Service, considering the clinical and behavioral signs of acute pain, in order to make allowances for the team to recognize signs of pain and direct evaluation of professionals for this group of patients.

Data collection was carried out in November 2011 and it was conducted by researchers at the

unit during the shift of the participants with an average duration of thirty minutes. The procedure was possible because, in this unit, the schedule of the distribution of staff enables this type of activity: number of professional and structure are appropriate for conducting research and training, preventing patients to be left without the necessary care during these periods.

Data were collected through a questionnaire that contained in the first part personal identification that characterizes professional regarding sociodemographic data and professional experience in care. The second part consisted of six questions built according to the research objectives, reviewed by two nurses' pain experts who are responsible for this work at the institution where the study was conducted. The questions were assertive and approached the concept of pain, the use of behavioral assessment of pain, pain signals (behavioral and physiological), complications of untreated acute pain and the definitions of sedation and analgesia. Participants indicated agreement with each of the assumptions on a Likert scale of five alternatives, ranging from A to E, which correspond to: totally agree, partially agree, neither agree nor disagree, partially disagree and strongly disagree. This scale allows the evaluation thorough the answers by the level of agreement of the participants in relation to an object[7]. This means that depending on the chosen answer, the participant is more or less prone in agreement with the subject and it assumes that people do not totally ignore the matter, but they have a knowledge that can be classified from excellent to very poor.

The participants' knowledge have been classified according to the number of correct answers, rated as excellent when they had six correct answers, five correct answers as good, four as moderate, three as sufficient and insufficient between two and three or no correct answer.

Data were analyzed according to descriptive statistics and the results are presented in tables. The average correct answers per professional category was compared with the statistic Mann-Whitney test and the p-value was considered statistically significant ($p<0.05$). The study was approved by the Ethics and Research Committee with protocol number 25/2011. The consent form in two copies was offered to everyone who participated in the study.

RESULTS

The study sample consisted of 113 nursing professionals, which corresponds to 67% of the total number of active employees in the unit. They are characterized by a mean age of 33.5 ± 6.5 and professional training with a median of 11 years, with approximately 40.7% of the sample between 06-10 years.

Complementary data characterizing the participants are described in Table 1.

In the two professional categories, 50% of the sample obtained knowledge level classified as excellent and good. There was no difference between the mean score per professional category. The mean score was 4.68 for nurses and 4.44 for nursing technicians with p-value not significant between groups ($p=0.352$). The percentage of correct answers according to the nursing team is shown in Table 2.

Regarding the assessment of the participants' knowledge in questions 1, 2, 3 and 4, which corresponds to the definition of pain, signs of behavioral assessment, recognition of signs of pain in patients with communication barriers and consequences of undertreated pain, it was found that over 70% of participants totally agreed with the assumptions. Of these, 65% are professionals who consider themselves moderately experienced. Although these rates, we observed in question 2 that 12.5% of nursing technicians strongly disagreed to indications of behavioral assessment.

In Question 5, which refers to sedation, 73.2% of nurses chose alternative A; among nursing technicians answers were distributed among the alternatives A, B, C, D and E.

In question 6, regarding analgesia, 56.4% of nurses totally agreed with the assumptions, while among nursing technicians this rate was 80.6%. Table 3 describes the percentage of correct answers in the questions according to the professional category.

Professionals who considered themselves high experienced opted for about 90% in alternatives A and B in all questions. The percentage of these responses among the participants is shown in Table 4.

DISCUSSION

This study aimed to describe the knowledge of the ICU nursing team on behavioral assessment

Table 1 – Characteristics of participants (n = 113). São Paulo, SP, 2011.

Characteristics	n (%)
Gender	
Female	80 (70.7)
Profession	
Nurse	41 (36.2)
Nurse technician	72 (63.8)
Self-assessment of professional experience	
Highly experienced (above 8 years)	39 (34.5)
Moderately experienced (among 2 and 8 years)	73 (64.6)
Low experienced (lower than 2 years)	1 (0.9)
Time of professional training of participants	
Between 1 and 5 years	27 (23.8)
Between 6 and 10 years	46 (40.7)
Between 11 and 15 years	24 (21.2)
Between 16 and 20 years	11 (9.8)
Above 20 years	5 (4.5)
Graduate nurses	
Masters	4 (9)
Specialist	37 (91)

Source: data from the questionnaire

Table 2 - Level of knowledge as number correct answer by professional category. São Paulo, SP, 2011.

Knowledge level by number of correct answer	Nurses (n=41)	Nurse Technicians (n=72)
	n (%)	n (%)
Excellent (6 correct answers)	10 (24.3)	19 (26.4)
Good (5 correct answers)	17 (41.5)	18 (25.0)
Moderate (4 correct answers)	9 (22.0)	19 (26.4)
Sufficient (3 correct answers)	1 (2.5)	11 (15.2)
Insufficient (0 a 2 acertos)	4 (9.7)	5 (7.0)

Source: data from the questionnaire

of pain used at work, in order to implement appropriate educational strategies to the real needs. The results showed that over 70% of participants totally agreed with the assumptions in the questionnaire placed on the main aspects of behavioral assessment of pain, with no statistically significant difference between the professional group (nurses and nurse technicians). Of these, about 80% of the sample obtained knowledge considered excellent to moderate by the total number of correct answers, ie, from the total number of questions (6), most participants obtained correct answers in 6 to 4 of these.

Pain is a major stressor for patients who are in intensive care units, contributing to changes in sleep pattern and leading to exhaustion, disorientation and agitation. The use, by the nursing team, of an appropriate tool for the assessment of the needs

Table 3 – Percentage of correct answers per question according to the professional category. São Paulo, SP, 2011.

Answers	Professional Category	
	Nurse (n=41)	Nurse Technician (n=72)
	n (%)	n (%)
Question 1	Pain is considered an experience that includes sensory and emotional aspects related to an actual or potential tissue damage.	
A	34 (89.9)	46 (63.9)
B	7 (17.1)	20 (27.8)
C	-	2 (2.8)
D	-	4 (5.6)
E	-	-
Question 2	The behavioral assessment of pain is applied in patients who cannot communicate verbally or who are currently receiving medications that alter their level of consciousness.	
A	32 (78.0)	50 (69.4)
B	7 (17.1)	11 (15.3)
C	-	2 (2.8)
D	-	-
E	2 (4.9)	9 (12.5)
Question 3	A patient with pain and unable to communicate may have signs and symptoms such as resistance to movement, face of pain, moaning, crying, agitation, changes in sleep patterns, protection posture, asynchrony with the ventilator and rate changes to heart rate, blood pressure and breathing pattern.	
A	39 (95.1)	70 (97.2)
B	2 (4.9)	2 (2.8)
C	-	-
D	-	-
E	-	-
Question 4 *	While acute pain is not treated properly it can result in increased sympathetic activity (increased heart rate, increased blood pressure), muscle spasm, changes in breathing pattern, anxiety, gastric stasis, nausea and vomiting, genitourinary abnormality.	
A	34 (82.9)	54 (75)
B	6 (14.6)	16 (22.2)
C	-	-
D	1 (2.4)	1 (1.4)
E	-	-
Question 5*	Sedation is intended to give comfort and to ensure that the patient perform necessary diagnostic and therapeutic procedures for their treatment and should be initiated only after adequate analgesia. It promotes muscle relaxation and alters level of consciousness.	

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A	30 (73.2)	42 (58.3)
B	07 (17.1)	21 (29.2)
C	1 (2.4)	2 (2.8)
D	3 (7.3)	5 (6.9)
E	-	1 (1.4)
Question 6*	The analgesia consists in relief of pain by use of drugs, these in turn, according to their classification and dose may alter the level of consciousness.	
A	23 (56.1)	58 (80.6)
B	12 (29.3)	10 (13.9)
C	1 (2.4)	-
D	1 (2.4)	-
E	-	-

Source: data from the questionnaire. * Questions not answered by all participants.

of the patient is essential for its control, being extremely important to the quality of care provided[8]. The impact of pain, its complexity and prevalence in these patients as well as their management, have become the object of interest to professionals in recent decades, it has considerable increased in studies, which has contributed to significant progress in the state of the science of pain[9].

There are some barriers that must be considered in the management of pain in intensive care units. Among them, we may include factors relating to professionals, such as knowledge and experience; factors related to the environment and patient, such as communication skills, sudden change in the clinical condition of the patient, presence of technology and reduced time of nursing[4]. This study aimed to identify the knowledge of nurses who care for these patients, because this factor is important for making consistent decisions with the real needs of this people, directly impacting the results of the assistance.

In a study conducted in Italy that investigated the knowledge of nurses in the management of pain in cancer patients, the mean score was higher than 62%, being considered as inadequate knowledge[6]. Our results show that the mean score was 65% which is good, suggesting that participants' knowledge can be enhanced. It is important to recognize that this knowledge is specific, complex, requires personal effort and institutional support for professional team development.

In questions 1, 2, 3 and 4, over 70% of the participants chose the alternatives A and B. Despite this knowledge have been considered adequate, it is observed that it does not appear in clinical practice, in advocated interventions and assessments recording, which lead us to question whether the presence of individual beliefs and values associated with personal and professional prior experiences interfere in decision making. In a study[10] that investigated the beliefs of health professionals in relation to chronic pain, the author highlights that healthcare professionals take care of patients in accordance with what they know and believe, that is, according to their concepts and beliefs. In this study, the findings point to the fact that having high or low formal education, and more or less experience in working with patients with chronic pain, is not sufficient to update knowledge and change beliefs that are not in accordance with current scientific knowledge. Our findings lead to a reflection on the educational techniques employed and their content and not necessarily a lack of training, as Bernardi[6] relates.

An assessment of pain should be systematic, practical, clinical evidence-based and incorporated to the assistance team that care for the patient. For the critical ill patient and unable to communicate, this assessment becomes crucial, because pain is a major component in their diagnosis and treatment, resulting in increased morbidity and mortality.

Table 4 – Percentage of answers A and B according to the professional category of very experienced. São Paulo, SP, 2011.

Answers	Professional Category	
	Nurse (n=16)	Nurse Technician (n=23)
	n (%)	n (%)
Question 1	Pain is considered an experience that includes sensory and emotional aspects related to an actual or potential tissue damage.	
A	16 (100)	18 (78.2)
B	-	3 (13.0)
Question 2	The behavioral assessment of pain is applied in patients who cannot communicate verbally or who are currently receiving medications that alter their level of consciousness.	
A	12 (75)	15 (65.2)
B	4 (25)	2 (8.6)
Question 3	A patient with pain and unable to communicate may have signs and symptoms such as resistance to movement, face of pain, moaning, crying, agitation, changes in sleep patterns, posture protection, asynchrony with mechanical ventilator and changes heart rate, blood pressure and breathing pattern.	
A	15 (94)	21 (91.3)
B	1 (6.0)	1 (4.3)
Question 4	While acute pain is not treated properly it can result in increased sympathetic activity (increased heart rate, increased blood pressure), muscle spasm, changes in breathing pattern, anxiety, gastric stasis, nausea and vomiting, genitourinary abnormality.	
A	15 (94)	17 (73.9)
B	1 (6.0)	5 (21.7)
Question 5	Sedation is intended to give comfort and to ensure that the patient perform necessary diagnostic and therapeutic procedures for their treatment and should be initiated only after adequate analgesia. It promotes muscle relaxation and alters level of consciousness.	
A	11 (68.7)	14 (60.8)
B	3 (18)	5 (21.7)
Question 6	The analgesia consists in relief of pain by use of drugs, these in turn, according to their classification and dose may alter the level of consciousness.	
A	10 (62.5)	19 (82.6)
B	5 (31.2)	3 (13.0)

Source: data from the questionnaire.

Empowerment of the nursing team is important to the quality of care, and knowledge reflected in this regard[6]. Inadequate knowledge added to the patient's inability to communicate their pain, no prioritization of pain assessment and the lack of preparation of the multi-professional team on the issue constitute barriers to pain management of critically ill patients[4].

Besides that, knowing the therapeutic goals of sedation and analgesia is essential to care for critically ill patients, mainly because the two conditions are closely related[9]. Analgesia is defined as relief

of pain perception without intentional production of a state of sedation, it may alter the level of consciousness, especially in the case of opioids. The sedation is the deliberate and controlled reduction in the level of consciousness in order to reduce the pain in diagnostic and therapeutic procedures necessary for the treatment[11]. Knowing the difference between these two conditions acquires greater relevance since about 30% to 50% of patients hospitalized in intensive care units receive some form of sedation[12]. In our study, the questions related to these definitions obtained in alternatives A and B around 80%, which means satisfactory knowledge of most participants. The nurses had higher levels of knowledge related to sedation, but worst scores related to analgesia when compared to nursing team. As nurses are the professionals responsible for the implementation of pharmacological and non-pharmacological pain relief, a knowledge gap can compromise accurate and consistent assessment[13]. Despite the results, we observed that the proper knowledge about these settings seems to be incorporated into clinical practice of this health team, because they are frequently misguided actions for the team related to the care in these two situations.

The use of an instrument to assess behavioral pain is a priority, because it determines more consistent interventions with the situation experienced by patients. In a Canadian hospital, there was a decrease in the administration of analgesics and sedatives after implantation of an instrument to assess behavioral pain[8]. This can be explained, according to the study authors, due to the use of a scale that helps differentiate pain from other symptoms such as anxiety[9]. It is also essential for the situations of sedation, in which the patient often feels pain but he/she is not treated, since it is not adequately assessed. Therefore, knowledge of pain behaviors results in better practices and use of appropriate interventions.

In our study, participants chose mostly in alternatives A and B, meaning full and partial agreement with the assumptions. However, about 12.5% of nursing technician strongly disagreed with the assumption of using behavioral assessment, i.e. unknown when it must be used. This fact has strong connotations, since periodical and systematic training are offered at the institution.

The high percentage of partial and total agreement of the participants, demonstrating adequate knowledge, opposed to the results of another study conducted in Brazil, which revealed that about 65% of the sample had deficient knowledge and demonstrated passivity and submission in making decisions regarding care needed for pain control[14].

We believe that the acquisition of knowledge is a necessary condition for the modification of beliefs, but it is not a sufficient condition, because inadequate beliefs of health professionals can result in treatment based on personal opinion. In a study on the impact of the implementation of a tool for assessment of pain in an ICU in Toronto, Canada, nurses identified attitudes and personal beliefs as one of the major barriers to the success of the training[1].

Limitations of the study

One of the limitations found in this study was the lack of researches conducted in Brazil on the subject. Futures studies on the theme with other profiles of ICU teams and patients would be interesting to know the reality of pain management in the country.

There are tools for behavioral assessment of pain, but these are not validated in Brazil, which makes pain management in the ICU difficult, directing teams of professional to an assistance in some situations that cannot be supported in the real needs of patients.

CONCLUSION

With the application of a specific knowledge questionnaire about the behavioral assessment of pain developed by the researchers, the results showed that the nursing staff knows the basic assumptions of pain and the main aspects of the behavioral assessment used at the institution in critically ill patients. That does not mean full adherence to appropriate relief actions and therefore accurate notifications of these events. This knowledge was considered satisfactory, however, it may be improved.

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Received: 14.12.2012
Approved: 08.08.2013

Versão on-line em Português/Inglês: http://www.scielo.br/scielo.php?script=sci_serial&pid=1983-1447&lng=pt&nrm=iso