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Evaluation of postoperative pain experience in intensive care unit patients

Avaliação da experiência de dor pós-operatória em pacientes de unidade de terapia intensiva

ABSTRACT

Objective: This study assessed the role of the nursing staff in pain management and verified the pain experiences of patients undergoing major surgery and receiving postoperative care in the intensive care unit.

Method: This was a prospective, observational study of postoperative patients who were admitted to the intensive care unit and later discharged to one of the hospital's regular wards. Patients with impaired communication were excluded. All patients signed an informed consent form. Data were collected using a questionnaire of 13 pain-related questions.

Results: A total of 167 patients were included, and 69.5% were male. Patient age ranged from 50-59

years, and the intensive care unit stay was one to three days. The majority of the patients (85%) reported no difficulties in expressing their painful symptoms, and the nursing approach in 54.5% of patients was only to recognize the presence or absence of pain. No pain scale was used. The most painful conditions included the surgical wound and bed positioning.

Conclusion: The nursing team was apparently more concerned with the presence of pain than with its quality, severity or possible painful stimuli. Pain scales were not used, which suggests the need for continued education of the nursing professionals on the manner of approaching their patients and assessing their patients' pain.

Keywords: Pain, postoperative; Pain measurement, Intensive care units

INTRODUCTION

Severely ill patients are admitted to the intensive care unit (ICU) requiring specialized therapy and continuous surveillance. Therefore, nurses working in these units should possess knowledge of physical, material and human resources. (1) However, these healthcare professionals may have decision-making difficulties if they lack specific skills to care for the patient's painful symptoms. (2)

Several studies on healthcare professionals experiences with patients' pain have been reported, but little data on the pain experience from the patient's point of view are available. The postoperative period of major surgery is painful, and pain is the most frequent complication during this time. (2)

Postoperative pain in ICUs causes substantial discomfort, but

critically ill patients are unable to communicate their suffering because of the mandatory use of devices and restrictions. (3) Therefore, pain relief and comfort for these patients becomes a priority, not only for human and ethical reasons, but to provide physical, mental and social outcomes. (4)

ICU nurses play a prominent role in the precise assessment of pain and the promotion of comfort. The appropriate management of pain and the relief of suffering are the nurse's professional and ethical responsibility. (5) Pain treatment in the ICU requires knowledge of nociceptive mechanisms, the impact of pain on the patient's welfare and a professional commitment to appropriate pain management. (6)

Pain assessment involves that gathering of comprehensive information on the time of onset, location, intensity, duration and periodicity of painful episodes; the patient's sensorial and affective conditions; and factors that worsen or improve the severity of pain. Pain relief is a requisite for optimal recovery and quality of life.⁽³⁾

Pain is the fifth vital sign; therefore, it should be checked concomitantly with pulse, breathing, blood pressure and body temperature. (7) Independent and cooperative healthcare teams aid in the identification of pain complaints and the selection of pain management using shared information from multiprofessional team shifts. (8-10) Several tools that emphasize patient/professional communication and clarify the understanding of pain incidence, duration and severity have been developed in the last decades. (7)

Nursing professionals use numeric scales that rate pain from zero (no pain) to 10 (the worst pain ever), a visual analogue scale that illustrates different facial expressions of no pain to the worst pain ever, and a verbal scale of questions on pain characteristics (e.g., type and severity). However, the daily use of these scales is complex and depends on the willingness and commitment of all nurses.⁽¹¹⁾

The humanization of the ICU environment has been highly emphasized. A hospital humanization program establishes an environment of care for patient needs and a culture of respect that values patient suffering rather than the disease, i.e., the development of human-human instead of human-object relationships. (12) The humanization of the ICU is closely related to the actions of healthcare professionals in stressful environments, the control of pain and anxiety, and the providing of improved patient psychological and emotional comfort. (13)

This study focused on the pain-postoperative relationship because surgical patients are a relevant portion of the ICU population. Attention to this relationship may improve humanized care and prevent unnecessary harm to the patient. Therefore, this study assessed the experience of major surgery patients during their postoperative period in an ICU.

METHODS

This investigation was a quantitative and descriptive field research study in a São Paulo state (Brazil) Northwestern region hospital of postoperative patients who were admitted to regular wards after discharge from the hospital ICUs. This facility is a general teaching hospital with 773 beds and three ICUs. The General ICU includes 26 beds and provides both medical and surgical patient care. The coronary ICU (UCOR) has 24 beds and provides medical, semi-intensive and postoperative care. The Emergency ICU has 21 beds for medical and surgical patients who are admitted at the expense of the National Brazilian healthcare system (SUS).

All patients over 18 years old who underwent a major surgical procedure followed by a postoperative stay in the ICU (General ICU, UCOR or Emergency ICU) during the postoperative phase with subsequent discharge to a regular ward were included in this study. All subjects signed an informed consent form prior to participation in this study. Patients with communication impairments were excluded. This study was conducted from August 2009 to December 2009. The institution's ethics committee approved this trial project under protocol number 2340/2008.

Data were collected using a structured questionnaire. Patient personal information, such as age, gender, surgery, hospitalization ward, ICU and length of the immediate postoperative period, were collected. The questions on postoperative ICU experiences included nursing care and focused on the patient's difficulties in expressing pain, the type of nursing care and the effectiveness of the professionals to relieve pain and/or eliminate pain-producing conditions (Attachment 1).

The investigators completed the questionnaires during individual bedside interviews with each patient. The registration logs of each unit were consulted to identify the ICU and bed of the patients during the postoperative period.

Descriptive statistical analyses were performed

472 Barbosa TP, Beccaria LM, Pereira RAM

using the Epi-Info 6.04 and Statistica 6.0 (Statsoft, Inc.) software packages. Categorical data are expressed as a number and percentage, and continuous values are expressed as the means ± standard deviation (SD) or medians (minimum-maximum) according to the variable distribution.

RESULTS

A total of 167 patients were interviewed; 69.5% were male, and 30.5% were female. The mean patient age was 54.35 ± 16.02 years, and the median was 57 (18-89) years. The patients underwent the following procedures: heart surgery (43.7% of patients), gastric surgery (11.9%), orthopedic surgery (11.9%), intestinal surgery (10.8%), rectal surgery (3.6%), liver surgery (2.4%), renal surgery (1.8%) and vascular surgery (0.5%).

Seventy-one patients were discharged from the Coronary ICU (UCOR) and subsequently transferred to the 3rd floor ward (cardiology). Sixty-five patients from the General ICU were primarily discharged

to the 6th floor ward, which is characterized as a surgical unit. Thirty-one patients were discharged from the Emergency ICU and distributed to the 2^{nd} , 3^{rd} , 4^{th} , 5^{th} and 6^{th} floors for Geriatrics, Oncology, Cardiology, Obstetrics, Neurology and Orthopedic Surgery, respectively. Less than half of the patients (46.3%) stayed 3.0 ± 1.0 days in the ICU. Table 1 presents the patient distribution according to the hospital ward after ICU discharge and the respective time in the ICU.

A total of 142 patients (85%) stated no difficulty in expressing pain, and 165 patients (98.8%) were satisfied with the ICU team care. A total of 137 patients (82%) obtained full pain relief.

A total of 165 patients (98.8%) were approached by nursing professionals who asked about pain several times daily; 91 patients (54.5%) stated that these questions concerned the absence/presence of pain, but 68 patients (40.8%) were approached using a numeric pain scale (zero = no pain; 10 = worse pain ever). Table 2 shows the patients' postoperative pain experiences.

Table 1 - Patient distribution according to length of intensive care unit stay and hospital ward after discharge

	Genei	al ICU	UCOR		Emergency ICU		Total	
Hospital ward	N	%	N	%	N	%	N	%
2 nd Floor	02	3.0	0	0	03	9.7	05	31.1
3 rd Floor	12	18.5	71	28.2	01	3.3	84	50.3
4 th Floor	03	4.7	0	0	0	0	03	1.8
5 th Floor	06	9.2	0	0	01	3.2	07	4.1
6 th Floor	42	64.6	0	0	26	83.9	68	40.7
_Total	65	100	71	100	31	100	167	100
Length of ICU stay	N	%	N	%	N	%	N	%
Only 1 day	05	7.7	02	2.9	03	9.7	10	5.9
3 days	34	52.3	33	46.5	11	35.5	78	46.7
5 days	09	13.9	15	21.1	05	16.1	29	17.3
More than 5 days	17	26.1	21	29.6	12	38.7	50	29.9
Total	65	100	71	100	31	100	167	100

ICU – intensive care unit; UCOR – coronary intensive care unit.

Table 2 – Patients' analysis of postoperative pain management in the intensive care units

	Genera	General ICU		UCOR		Emergency ICU		Total	
	N	%	N	%	N	%	N	%	
Difficulty to express pain									
Yes	10	15.4	10	14.1	05	16.1	25	14.9	
No	55	84.6	61	85.9	26	83.9	142	85.1	
Reported difficulty									
Speech difficulty	10	100	10	100	05	100	25	100	

Continue...

Table 2 – Continuation

	General ICU		UCOR		Emergency ICU		Total	
	N	%	N	%	N	%	N	%
Care of the pain complaint	'							
Yes, but the drug delayed to be given	01	1.5	0	0	0	0	01	1.5
Yes, quickly medicated	64	98.5	71	100	31	100	166	98.5
Drug effects (relief)								
No, no relief at all	01	1.5	01	1.4	0	0	02	1.2
Yes, partial relief	13	20.0	09	12.7	06	19.3	28	16.8
Yes, full relief	51	78.5	61	85.9	25	80.7	137	82.1
Frequency of asking								
Yes, just once or twice daily	01	1.55	01	1.4	0	0	02	1.2
Yes, several times daily	64	98.5	70	98.6	31	100	165	98.8
Type of question								
Use of verbal scale	01	1.5	03	4.2	01	3.2	05	2.9
Use of visual analogue scale	03	4.7	0	0	0	0	03	1.8
Use of numeric scale	03	38.5	28	39.4	15	48.4	68	40.7

ICU – intensive care unit; UCOR – coronary intensive care unit.

Table 3 – Main causes of pain in postoperative intensive care unit patients

	Gener	al ICU	ICU UCOR		Emergency ICU		Total	
Painful experience	N	%	N	%	N	%	N	%
During use of a monitoring device	0	0	01	1.4	0	0	01	0.6
Postextubation discomfort	0	0	01	1.4	0	0	01	0.6
Precordialgia	0	0	01	1.4	0	0	01	0.6
Transportation	0	0	01	1.4	0	01	01	0.6
Headache	0	0	02	2.8	0	01	02	1.2
Had no pain	01	1.5	03	4.2	0	0	04	2.4
During physiological eliminations	03	4.6	0	0	01	3.2	04	2.4
During feeding	02	3.1	0	0	04	12.9	06	3.6
Procedures with catheters	04	6.2	02	2.8	04	12.9	10	5.9
Changing decubitus or moving in bed	05	7.7	08	11.3	01	3.2	14	8.4
During bath/hygiene	04	6.2	07	9.9	04	12.9	15	8.9
Drain-related pain	04	6.2	14	19.7	0	0	18	10.8
During curative dressing	07	10.1	09	12.7	03	9.7	19	11.4
Tube installations	10	15.4	07	9.9	05	16.1	22	13.2
Uneasy with bed positioning, back pain	11	16.9	10	14.1	03	9.7	24	14.4
Surgical wound	14	21.5	06	8.4	05	16.1	25	14.9
Total	65	100	71	100	31	100	167	100

 $ICU-intensive \ care \ unit; \ UCOR-coronary \ intensive \ care \ unit.$

The patients rated the surgical wound as the most frequent cause of pain (14.9%) followed by back pain (14.4%). Table 3 presents the patients' painful experiences.

DISCUSSION

The majority of patients in this study were male (69.7%), which is consistent with a previous study in a

public hospital in São Paulo, Brazil that characterized 57.7% of the patients undergoing major surgery as male. (14) Most patients underwent heart surgery, which requires more intensive postoperative care.

The majority of the patients stayed two to three days in the UCOR and General ICU. Most of the patients in the Emergency ICU stayed longer than five days. Although the length of stay has been associated with an increased frequency of pain, (11)

this relationship could not be assessed in our study because only descriptive analyses were performed. Pain and other stress factors expose the subject to hostile conditions that are exacerbated by the lack of temporal reference. (15)

Although most of the patients reported no difficulties in expressing their pain, 25 patients (14.9%) perceived some speech difficulties due to the nebulization mask and/or postextubation throat discomfort. Speech difficulties reduce the exchange of patient-professional information and impede the construction of affective bonds. Additionally, they reduce the feeling of reassurance because the lack of communication may cause feelings of frustration, fear, confusion and isolation. (16)

The majority of patients rated their care as satisfactory (98.5%), which is consistent with a previous study of intensive care medicine quality and humanization that demonstrated that 95% of the patients were quite satisfied with their nursing teams' care, and patients felt free to express their needs and complaints, including pain. (17) Patients primarily view the nursing team members as protective figures who care for their needs during a time of suffering and fragility. (18)

The treatment of pain using pharmacological approaches is indispensable during the postoperative period. The administered drugs in the current study were effective because 82.1% of the patients reported full pain relief. This result is consistent with previous postoperative pain management studies in which pain severity was mild if potent and timely analgesics were used. 19,20)

Pharmacological tools are the best interventions for pain management, but the nursing team may use other measures, including relaxation and distraction techniques, independently of a medical prescription to help the patient control their pain. These techniques are particularly useful when painful procedures must be performed, such as the changing of curative dressings or while waiting for the effects of an already dosed analgesic. The nurse may also reassure the patient that he/she is aware of the patient's pain and is willing to make the necessary changes to minimize it. (21)

Nursing professionals also select analgesics as an indispensable method for a more comfortable postoperative time. (21) However, pain is frequently underestimated, especially by physicians, nurses and nursing assistants because pain relief is

frequently a secondary target, which leads to a lack of pain prevention measures and the waiting for the patient's complaint before treatment is administered. (13)

The nursing team members' concern with pain was clear because 98.8% of the patients were asked about pain several times daily. However, the most frequent approach of simply posing questions disagrees with the literature recommendations that stress the relevance of pain assessment scales to implement more effective therapies.⁽⁷⁾

The lack of knowledge on the use of pain assessment scales jeopardizes the patients' therapy and outcomes. (7) However, these scales are important to nursing professionals to improve the quality of care, and pain assessment scales are recommended for hospitalized patients to support pain diagnosis, quantification and treatment. These pain scales render the interaction and communication easier within the healthcare team professionals by clarifying the perception of the progression of painful symptoms and the response to therapy. One type of pain assessment scale should be used in each service to improve accuracy, but changes may be required according to the patient's age and capacity. (19)

Pain is subjective; its intensity is influenced by beliefs, relevance and emotions that are associated with the patient's positive or negative expectations. Pain is expected or acceptable for some people and not for other people. This expectation influences the assessment of pain because each individual's painful experience is influenced by the subject's personal history, understanding of pain and mental status. Different people under similar or identical conditions may experience pain in completely different manners. (13)

This study has a number of limitations. No assessments of patients who died during the postoperative period were included, and the characteristics of these patients could be different from the assessed population. In addition, the number of discharged patients during this period and the reason for incomplete questionnaires were not assessed. Therefore, this study has no consecutive character. Another limitation is related to the lack of questionnaire validation; the questionnaire was not anonymous, which would allow patients to more freely express their opinions. Finally, another limitation is the descriptive character of this and the absence of a comparison between the different ICUs.

Notwithstanding, the results suggest that pathophysiological issues are the main priority of professionals in the studied ICUs. These results should be an alert for nursing education, and graduating students should learn a wider approach to patient care and be aware of postoperative care needs. (10)

ICU healthcare professionals should be educated on appropriate pain management following major surgery. Current and future ICU professionals should receive continuing education in pain management.

CONCLUSION

Patients who were admitted to ICUs for postoperative care were quite satisfied with their pain control care and drug efficacy. However, many factors contributed to an increase in their pain, such as surgical wound discomfort, the magnitude of the surgery, long periods in the same position in bed (secondary to the patient's immobilization) and the consequential back pain.

The nursing team was more concerned with the presence/absence of pain than its severity and the painful stimuli that caused the pain. Additionally, pain assessment scales were not used. Therefore, nursing professionals should receive special training for an improved approach to the assessment of patient pain complaints.

RESUMO

Objetivo: Verificar a experiência dos pacientes submetidos a grandes cirurgias que realizaram pós-operatório em unidade de terapia intensiva.

Método: Trata-se de estudo observacional, prospectivo, avaliando pacientes admitidos na unidade de terapia intensiva em pós-operatório e que tiveram alta para uma das enfermarias do hospital. Todos assinaram termo de consentimento livre e esclarecido.. Foram excluídos os pacientes com dificuldades na comunicação. A coleta de dados foi por meio de entrevista composta por 13 questões relacionadas a dor

Resultados: Foram incluídos 167 pacientes, sendo 69,5% do sexo masculino, de 50 a 59 anos, permanecendo de um a três dias internados na unidade de terapia intensiva. Oitenta e cinco por cento dos pacientes não relataram dificuldades para expressar a dor, 98,8% foram questionados e medicados rapidamente quando apresentaram sintomas de dor, 54,5% foram abordados somente sobre a presença ou não de dor, não utilizando escalas de mensuração e a situação mais dolorosa relatada foi o incômodo devido à incisão cirúrgica e posição no leito.

Conclusão: Houve maior preocupação da equipe de enfermagem com a ocorrência de dor e não com a qualidade, intensidade ou quanto o estímulo doloroso poderia estar gerando incômodo ao paciente, além da não utilização de escalas para avaliação clínica e individual da dor, necessitando de um treinamento contínuo com os profissionais de enfermagem no sentido de abordar e valorizar as queixas álgicas dos pacientes.

Descritores: Dor pós-operatória; Medição da dor; Unidades de terapia intensiva

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Attachment 1 - Interview

	Age:
	Gender:
3.	Surgery:
4.	Current hospitalization ward:
5.	ICU for the immediate postoperative period:
6.	ICU length of stay?
	() Less than 1 day
	() 1-3 days
	() 1-5 days
	() more than 5 days
7.	Did you feel any difficulty to express your pain?
	() Yes
	() No
8.	If yes, which one?
	() speech difficulty
	() didn't know whom to speak
	() no one was available to listen
	() was not asked about pain
9.	When complaining of pain, did you received care?
	() Yes, quickly was medicated
	() Yes, but it took too long to be medicated
	() No, I was not medicated when complained of pain
10.	Did the used drugs relieve your pain?
	() Yes, completely
	() Yes, partially
	() No, had no relief
11.	Were you questioned on pain during your ICU stay?
	() Yes, several times by all shift's nursing professionals
	() Yes, but just occasionally during the day
	() No, no professional asked me about pain
12.	If yes, how were you questioned?
	() Just if I had pain or not
	() Using a number scale rating pain from zero (no pain) to 10 (worse pain ever)
	() Using visual analogue scale, showing figures (facial expressions) representing from absence of pain to the worst pain
	ever
	() Using a verbal scale, questioning on the pain characteristics (type, severity)
13	Which conditions caused you more pain?
10.	() surgical wound
	() uneasy with the bed position, back pain
	() during curative dressings
	() during punctures or installing catheters
	() installation of tubes (urinary tube, nasogastric tube)
	() on the drains
	() during bath/hygiene
	() in changes of position or moving on the bed
	() feeding
	() during my eliminations (micturition, bowel evacuation)
	() during the use of monitoring devices (e.g., non-invasive MBP)
	() during blood samples drawings
14	Was there any pain-related situation that you would like to report?
17.	() Yes
	() No
15	If Yes, please tell:
1).	n res, presse con.