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ORIGINAL ARTICLE

SCALES OF ASSESSMENT OF PAIN: THE PROCESS OF IMPLEMENTATION IN A PEDIATRIC INTENSIVE CARE UNIT

ESCALAS DE AVALIAÇÃO DE DOR: PROCESSO DE IMPLANTAÇÃO EM UMA UNIDADE DE TERAPIA INTENSIVA PEDIÁTRICA

ESCALAS DE EVALUACIÓN DEL DOLOR: EL PROCESO DE APLICACIÓN EN UNA UNIDAD PEDIÁTRICA DE CUIDADOS INTENSIVOS

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ABSTRACT

Objective: evaluating the application of two pain scales and identify one of them for implementation in a pediatric intensive care unit. **Method:** a descriptive study with a quantitative approach. The participants were 11 members of the nursing team who used pain scales simultaneously and completed a questionnaire with information on clarity, understanding, difficulty, time use and personal opinion of what would be ideal for use at the unit level. The data were analyzed and presented in simple percentages in tables. The research project was approved by the Research Ethics Committee, CAEE n. 0145.0.268.000-10. **Results:** FLACC scale (an acronym for: Face, Legs, Activity, Cry, Consolability) was considered the most appropriate for clarity and application time compared to the COMFORT-B, beyond being better understood by 63,6% of the participants. **Conclusion:** evaluating the two scales, it was identified FLACC as a viable scale for deployment in the PICU. **Descriptors:** Pediatric Intensive Care Units; Hospitalized Child; Pain Measurement.

RESUMO

Objetivo: avaliar a aplicação de duas escalas de dor e identificar uma delas para a implantação em uma unidade de terapia intensiva pediátrica. **Método:** estudo descritivo de abordagem quantitativa. Os participantes foram 11 membros da equipe de enfermagem que utilizaram as escalas de dor e, simultaneamente, preencheram um questionário com informações sobre clareza, compreensão, dificuldade, tempo de uso e opinião pessoal de qual seria a escala ideal para utilização na unidade. Os dados foram analisados e apresentados em porcentagens simples em tabelas. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAEE nº 0145.0.268.000-10. **Resultados:** a escala FLACC (um acrônimo para: Face, Legs, Activity, Cry, Consolability) foi considerada a mais adequada em relação à clareza e ao tempo de aplicação quando comparada à COMFORT-B, além de melhor compreendida por 63,6% dos participantes. **Conclusão:** avaliando as duas escalas, identificou-se a FLACC como escala viável para implantação na UTIP. **Descritores:** Unidades de Terapia Intensiva Pediátrica; Criança Hospitalizada; Medição da Dor.

RESUMEN

Objetivo: evaluar la aplicación de dos escalas de dolor e identificar a uno de ellos para su implementación en una unidad de terapia intensiva pediátrica. **Método:** estudio descriptivo, con enfoque cuantitativo. Los participantes fueron 11 miembros del equipo de enfermería que utilizaron escalas de dolor al mismo tiempo y completaron un cuestionario con información sobre la claridad, la comprensión, la dificultad, el uso del tiempo y la opinión personal de lo que sería ideal para su uso a nivel de unidad. Los datos fueron analizados y presentados en porcentajes simples en tablas. El proyecto de investigación fue aprobado por el Comité de Ética de Investigación, CAEE nº 0145.0.268.000-10. **Resultados:** la escala FLACC (un acrónimo de: cara, las piernas, la actividad, lloro, consuelo) fue considerada la más adecuada en relación a la claridad y al tiempo de aplicación en comparación con el COMFORT-B, además de mejor comprendida por el 63,6 % participantes. **Conclusión:** la evaluación de las dos escalas, se identificó como la escala viable FLACC para el despliegue en la UCIP. **Descriptores:** Unidades de Cuidados Intensivos Pediátricos; Niño Hospitalizado; Medición de Dolor.

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INTRODUCTION

During hospitalization in a Pediatric Intensive Care Unit (PICU), pain is a common symptom due to severe illness and the realization of numerous invasive procedures, which makes this period a synonym for emotional or physical aggression, creating anxiety and making child more susceptible to pain.¹

This situation can be experienced by the child in a less traumatic manner if the professionals responsible for their care are aware of the importance of assessment and pain relief, and knowledge of appropriate strategies for their management.

In intensive care units "adequate relief of pain and anxiety should be a priority in the treatment planning of critically ill children"^{2:224}, for its proper management brings numerous benefits to the child, besides decreasing the length of hospital stay and consequent reduced costs. Generally, inadequate pain control is related to the lack of criteria and methods of assessment and recording. While evaluating and measuring pain are not easy tasks, such procedures should become routine for nurses, who must record this information in the child's records, so that appropriate measures of pain relief can be deployed.

The pain has been considered as the 5th vital sign to be measured.^{1,3} Therefore, patients should be evaluated for the presence and intensity of pain every measure heart rate, blood pressure, respiratory rate and temperature and thus consider the presence or absence of pain in his relief as a warning sign as important as bradycardia or arterial hypotension.⁴ The use of standardized methods of pain assessment is essential to obtain a more sensitive and reliable measurement, thereby reducing, the risk of under treatment of pain in this age group.³

Among the scales validated in Brazil to assess the pain of children hospitalized in the PICU we highlight two. The first is the Comfort-Behavior (COMFORT-B) scale, internationally validated in 2005, derives from the Comfort scale, previously validated for critically ill, unconscious and mechanically ventilated pediatric patients. It was described as a reliable alternative to its original, containing only behavioral parameters and with an item relating to crying children out specifically used for mechanical ventilation. Its use has increased progressively in the PICU, including assessment of sedation level.⁵ Given the wide dissemination of the scale in question, published in 2008, the validation of

the scale in Portuguese language in children undergoing mechanical ventilation.⁵

The second scale is the FLACC (an acronym for: Face, Legs, Activity, Cry, Consolability) a behavioral scale used in children aged 2 months to 7 years old, considered a simple method for the identification and evaluation of the painful phenomenon.⁶

OBJECTIVE

- Assessing the application of two pain scales and identify one of them for implementation in a pediatric intensive care unit.

METHOD

This is a descriptive quantitative study, which was developed in the PICU of a university hospital (UH), which has five beds for the various surgical specialties and clinical area and offer these services to medium and high complexity to children aged zero to twelve years old. It is noteworthy that since 2007 the UH deployed the 5th vital sign, providing training and training to employees, being chosen in the pediatric unit of a course scale to assess pain.

The subjects were members of the nursing staff of the PICU, composed of 12 nursing assistants, four technicians and four nurses nursing. For data collection procedures took place in two stages: first, the researcher presented the scales and instructed practitioners to apply them while keeping track of each of the first application. The scales were executed simultaneously once a period in which the professional is considered relevant, while checking vital signs over a period of 15 days, resulting in at least 15 checks per employee.

This was followed carefully how to use the scales. In scale-B Comfort children should be observed for two minutes for them to assess seven variables, each scored from 1 to 5. The total score can range from 6 to 40 and due to the possibility of great interval is suggested that patients with scores between 6 and 10 should be classified as over- sedated , between 11 and 22 were sedated and greater than 23 bit sedated.⁵ On the scale FLACC each indicator is scored 0-2. The child should be observed with the body discovered by a period of 2 to 5 minutes, while awake and in five minutes or more when asleep. The total score ranges from 0 to 10 and is rated according to the following score: 0 = Relaxed and comfortable, 1-3 = medium Discomfort, 4-6 = moderate pain, 7-10 = Pain/severe discomfort.

In the second stage, the professionals who have implemented the two scales in certain period completed an instrument consisting of questions about the use of each scale as the clarity, comprehension, application time, difficulty and fidelity in assessing pain in children.

The data were analyzed and presented in simple percentages in tables.

This study followed the rules on research involving human subjects of Resolution 196/96 of the National Board of Health and was approved by the Ethics Committee on Human Research of the State University of Londrina opinion nº 162/10, CAEE nº 0145. 0268000-10

RESULTS

Of the total of 20 professionals of the nursing team, 17 agreed to participate. This number of questionnaires distributed, 11 were returned, with 5 licensed practical nurses, nursing technicians 4 and 2 nurses. The time of practice in the pediatric area ranged from 2 to 25 years.

The subjects answered questions addressing four items regarding the practical applicability of the scales: clarity, comprehension, application time and difficulty.

For clarity, all participants felt that the indicators were clearly described, which helped to facilitate the use of the scales. Regarding FLACC scale, 63,3% of participants said it is totally clear and 36.4% rated as partially clear. In this same aspect, the scale Comfort-B had 45,4% of respondents as being totally clear, 36,4% partially clear and 18,2% unclear.

Regarding comprehension, 63,3% of participants fully understood the FLACC scale, stating they understand what should be assessed and how it should be done, and 36,4% reported having partially understood. The

Comfort-B scale was fully understood by 45,4% of people, also partially understood by 45,4% and 9,1% poorly understood by the participants.

When asked if the observation time required for the use of the scale was adequate to practice and pain assessment could be carried out while checking vital signs, most respondents (63,6%) responded that the application time the FLACC was entirely appropriate and 36,4% considered it partially right. The scale Comfort-B, in turn, was considered to have a fully adequate application time by 36,4% of participants, the other considered partially suitable.

With regard to the difficulty encountered by the participants in the use of scales to assess pain of children admitted to the PICU, four said they had found the FLACC a bit difficult and 7 partially difficult. The same results were found regarding the use of the Comfort- B and are shown in table 1.

When asked about which of the two scales would be best practice application and could be used to assess pain as the 5th vital sign in the PICU, the FLACC scale was chosen for five people (45,4%), being : one nurse, one nursing technique and three nursing assistants . The Comfort- B was a choice of three techniques of nursing and a nurse (36,4%). These results are shown in Table 2. Two nursing technicians suggested items to be included from the Comfort- B in FLACC scale, the first of which is wider and has more specific items and the second being briefer though, is easier to use and view. This option, however, is not applicable, since the construction of a scale of pain assessment following specific steps, not covered in this study.

Table 1. Comparison between scales FLACC and Comfort-B.

Variables	FLACC		Comfort-B	
	n	%	n	%
	11	100,0	11	100,0
Clarity				
Clare	7	63,6	5	45,4
Partially Clare	4	36,4	4	36,4
Little Clare	-	-	2	18,2
Comprehension				
Fully	7	63,6	5	45,4
Partially	4	36,4	5	45,4
A little	-	-	1	9,1
Time of application				
Adequate	7	63,6	4	36,4
Partially	4	36,4	7	63,6
Little adequate	-	-	-	-
Difficulty				
Little	4	36,4	4	36,4
Partially	7	63,6	7	63,6
Totally	-	-	-	-

According to the survey, it is clear that the scale of FLACC was chosen by the participants to be used as a tool for pain assessment of children admitted to the PICU.

Table 2. Application of scales FLACC and Comfort-B.

Best application	Technicians/Assistants	n	%	Nurses		Total	
				n	%	n	%
FLACC	4	36,4		1	9,1	5	45,4
Comfort-B	3	27,3		1	9,1	4	36,4

DISCUSSION

Assess pain in pediatric patients is a topic that has aroused interest in clinical practice there is little time⁷, however this can be considered one of the challenges of the healthcare team in child care, especially that hospitalized in a PICU.^{8,9}

In addition to the detrimental health effects of children, inadequate pain management by professionals hurts bioethical principles of non-beneficence and autonomy, not to prevent possible damage that causes pain to the patient and not to allow the patient be seen as authority over their pain, which depending on the condition and age of the child must be considered.¹⁰

It should be stressed that the National Council for the Rights of Children and Adolescents, in its resolution n. 41 offers on the Rights of the Child and Adolescent hospitalized, highlighting in its Article 7 that the patient has "a right to not feel pain when there are ways to avoid it".¹¹ In addition, patient satisfaction with pain management is one of the indicators developed by the American Nurses Association (ANA) used to evaluate the quality of care provided by the nursing staff.⁶ Similarly, the Joint Commission on Accreditation of Healthcare organization (JCAHO), north American organization that evaluates services health, included assessment of pain as item to be evaluated in the hospital accreditation process since 2001, reinforcing the patient's right to have their pain controlled.¹²

The finding that the pain in neonates, children and adolescents may be undertreated due to the difficulty in assessing this phenomenon awakened to the need for objective for pain measurement scales.⁷ For pain complaints are adequately addressed is necessary that health professionals are trained and feel secure during use of pain measurement instruments.¹⁰ In the study of 12 nurses in a neonatal unit admission, only 5 (42%) reported having been the subject of pain in newborn born addressed during their undergraduate.¹³

The pain in children is often underestimated and ends up receiving

inadequate treatment.^{7,8,10,14} Several studies present the factors that imply that sad reality, among them we can highlight: the influence of personal beliefs of health professionals, the difficulty in assessing pain in this age group, the myths regarding pain in children, the lack of knowledge of the professionals regarding the painful process, the pharmacological and non- pharmacological measures for the relief of pain and implications of untreated pain for the child.^{3,6,8,10,14}

The imprecision of the evaluation with a pain scale can result even in inadequate therapeutic intervention.¹ There are still cases of error in the scheduling of painkillers, which causes the child does not receive the same medication when prescribed and end suffering needlessly the consequences of pain. These findings highlight the importance of training and sensitization of professionals, especially the nursing staff regarding the appropriate management of pain.¹⁵

For instruments of pain assessment scales seek information about the individual experience of pain also acting as a tool of interaction between the health care team who can follow the evolution of pain each child so adapting therapy used. Such instruments should be easy to use and understanding for both the appraiser as to the child and their carer and have the highest number possible to be assessed in order to provide a more accurate ways, being free from biases.^{1,16}

You can find in the literature many studies on pain assessment in the pediatric age group, in which are described and used one-dimensional and multidimensional scaling, and self-report.^{1,3,7,8,10,12-14,17-8} But rare are those that include specific populations, such as mechanically ventilated children, provisionally, are without communication skills and commonly have their altered physiological parameters due to the use of pharmacological agents.^{9,16,19}

Studies show that FLACC proved easily applicable and valid to demonstrate the change in pain scores before and after administration of analgesic medications.^{7,19} The scale proved reliable for the measurement of pain in children with cancer,

for which have difficulty in verbalizing pain and also severe in children and adolescents with cognitive disorders. Results indicate that FLACC was well accepted and understood by children, professionals and caregivers.⁷

The degree of difficulty and time of completing an evaluation instrument of pain are considered indicators.¹⁸ Feasibility study that describes the analysis of the feasibility of a scale of pain assessment in six children with cognitive and/or behavioral changes and neuromuscular deficits highlights that the degree of difficulty reported by nurses in the use of a specific instrument is not related to the child's age, but varies inversely with the length of their professional practice and training. This fact highlights the need to invest in training the teams working in the health care of the child again.¹⁸

It appears that despite the existence of numerous scales to assess pain in this age group, none of them was chosen as the gold standard. Therefore, the choice and implementation of a scale should be made based on factors such as minimum financial resources, staff training ensuring proper application and interpretation, and practicality, consuming little time in their use, as well as being suitable for the child's condition, the As regards the age, kind of pain and clinical context.²⁰

CONCLUSION

The pain evaluation in children is a challenge to health professionals, especially the nursing staff, which acts directly and continuously in child care. In the case of children with serious illnesses who are in PICUs this challenge is even greater. It is noted, however, that using appropriate instruments, many of the obstacles can be overcome.

Even with the significant increase in studies related to the topic, the knowledge generated has still been little applied in healthcare practice. It is vital that professionals working in care for severe child be alert to the possibility that the painful phenomenon. Faced with this, all staff should be trained and mainly sensitized to perform adequate pain management.

The results of this research will be forwarded to the direction of UH and Development Division and Research (DEPE) so that the scale FLACC be formally adopted in the evaluation of the 5th vital sign of the children admitted to the PICU.

We emphasize the need to develop continuing education activities to encourage professionals involved in the care of critically

ill children for pain management, as well as a systematic review are valued and held on those units.

It would be desirable even if the PICU who already make use of rating scales of pain in his practice to disclose this experience that you can compare the different scales used within a clinical context in order to highlight the advantages and disadvantages of each, thus making possible the adoption of protocols and strategies in pain management and comfort measures for critically ill children.

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