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Arterial puncture pain of the newborn: prior note of a comparative study

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ABSTRACT

Objective: check the effectiveness of implementing a bundle for pain management during arterial puncture in the baby admitted to the Neonatal Intensive Care Unit. **Method:** This is a quasi-experimental, comparative study of the type before and after, in which data were collected through non-participating observation of punctures, conversation wheels, and application of a semi-structured questionnaire on the subject with nursing professionals. **Preliminary results:** The preliminary analysis allows us to state that bundle can bring about a decrease in pain scores during arterial puncture; however, the awareness of professionals is still flawed and based on their subjective knowledge.

Descriptors: Pain; Nursing Care; Intensive Care Units Neonatal.

INTRODUCTION

Hospitalized babies go through several painful and stressful situations during hospitalization in the Neonatal Intensive Care Unit (NICU), where the arterial puncture is constantly applied. The acute painful stimulus in the newborn (NB) triggers a global response that includes cardiovascular, respiratory, immunological, hormonal and behavioral changes. The physiological responses are accompanied by endocrine and metabolic reactions, and can generate hyperglycemia, increase protein lipid catabolism, and directly interfere with homeostasis which, in a premature baby, is already precarious⁽¹⁾.

It is noted that when performing the puncture, the team does it without planning and without realizing that the procedure is painful and can be performed in a way that causes less suffering, using existing pharmacological and non-pharmacological resources to reduce the baby's stress and, consequently, the pain⁽¹⁾. One proposal for intervention to minimize the deleterious effect of pain in the short and long term is the use of bundle, a set of four to six interventions based on scientific evidence that, when applied together, presented better results than when applied alone, and have a positive impact on care. The theoretical framework Knowledge Translation uses this participatory approach to unite the production and application of scientific knowledge such as the bundle, so that it lasts within the local context and does not evaporate along with the end of the research⁽²⁾.

OBJECTIVE

To verify the effectiveness of implementing a bundle for pain management during arterial

puncture in an NICU based on the theoretical framework Knowledge Translation.

METHOD

This is an intervention research with almost experimental characteristics, of the type before and after, prospective and longitudinal, of qualitative and analytical approach, carried out in a NICU of a private hospital in the northwest of Paraná. Data collection took place from October 2018 to September 2019 and consisted of three phases: Phase I - situational diagnosis of the unit studied and calculation of pain scores during arterial puncture of infants; Phase II: construction of the bundle in line with nursing teams; Phase III: implementation and evaluation of the bundle from the perspective of the team and its effectiveness in the pain scores, and identification of weaknesses that occurred in the process. All punctures performed on babies with gestational age between 28 to 41 weeks and 6 days, and who were not under mechanical ventilation or in the postoperative period of major surgery, were included. All nursing professionals were invited to participate, except those who were on vacation or on medical leave. The pain scores were calculated using the pain profile scale of the premature newborn and the express consent of the participants was given by signing the Informed Consent Term. All the ethical precepts set forth in Resolution No. 466/2012 of the National Health Council have been respected and the confidentiality of information shall be guaranteed by means of the codification of individuals and institutions. The study was approved by a committee on ethics in research with human beings,

with Opinion No. 2,680,438 and Certificate of Presentation for Ethical Appreciation No. 89368518.0.0000.0104.

PRELIMINARY RESULTS

Regarding the management of pain during the arterial puncture and the previous knowledge of the professionals about the subject, there were many discrepancies between what was observed and what was described by the team; moreover, there were very high pain scores in stage I. Thus, discussions on the subject and training by the researcher were carried out using an explanatory board built by her, which resulted in the election of four items by the professionals who would compose the bundle. This became a reminder to be attached to the incubator before the arterial puncture. In phase III, the bundle was used in the morning, and its effectiveness was analyzed again through the non-participation observation of arterial punctures and calculation of the pain score. It was found that the pain still existed, but at a lower intensity, because the score found was lower. The bundle, as a light technology, can contribute to the development of a more responsible practice, based on evidence and which is known to reduce the discomfort felt by babies. It should be noted that there were difficulties during the process, such as lack of support from the unit coordination; high turnover of the nursing team; babies with a long period of hospitalization and severity,

who were automatically excluded from the study; and resistance by the team in testing new routines. Despite the problems described, it is inferred that the bundle helped to reduce pain scores, corroborating the initial hypothesis of the researchers.

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