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ORIGINAL

Distraction techniques and pain in venous puncture in children aged 2 to 12 years in a Pediatric Intermediate Hospitalization Ward in the months of November-December 2020

Técnicas de distracción y dolor en la punción venosa en niños de 2 a 12 años de edad en una Sala de Internación Intermedia Pediátrica en los meses de noviembre-diciembre del año 2020

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ABSTRACT

Procedural pain management is an underutilized practice in children, despite the availability of effective treatments. In recent years, there have been several investigations on how to minimize pain in children during invasive procedures.

The aim of this study is to describe the relationship between the use of distraction techniques and pain during venous puncture in children from 2 to 12 years of age, in a Pediatric Intermediate Hospitalization Ward during the months of November-December 2020.

A qualitative, non-experimental, in-depth descriptive and cross-sectional research was conducted on 11 nursing professionals. A 14-item self-administered questionnaire collected information on the sociodemographic characteristics of the nurses, the knowledge and experience in distraction techniques and the assessment of pain outcomes when applied.

A theoretical approach based on non-pharmacological techniques in pain prevention was used. The nurses participating in the study comprised a group with a majority of technical degrees (82%) and 45% with more than 5 years of seniority as pediatric nurses.

All the nurses said they were aware of the existence of distraction techniques. Nine nurses (81.81%) stated that the techniques are effective because the patient calms down before starting the technique (4 nurses) and because the distractor distracts them from what is happening (5 nurses). Two professionals perceive that the technique does not change the patient's pain or stress situation because distrust of the technique or of the health care team outweighs the distractors. Post-technique respiratory and heart rate indicators contradicted the nurses' perception of usefulness.

Keywords: Distraction techniques in nursing; Pain in venous puncture; Hospitalized children from 2 to 12 years old.

RESUMEN

El manejo del dolor procedimental es una práctica poco utilizada en niños, a pesar de la disponibilidad de tratamientos eficaces. En los últimos años, se han realizado distintas investigaciones sobre cómo minimizar el dolor en niños durante procedimientos invasivos.

El objetivo de este estudio es describir la relación entre el empleo de técnicas de distracción y dolor en la punción venosa en niños de 2 a 12 años de edad, en una Sala de Internación Intermedia Pediátrica durante los meses de noviembre-diciembre del año 2020.

Se realizó una investigación de abordaje cualitativo, de tipo no experimental, con profundidad descriptiva y de corte transversal, sobre el total de 11 profesionales de Enfermería. Un cuestionario autoadministrado de 14 ítems recopiló información sobre las características sociodemográficas de los enfermeros, el conocimiento y experiencia en técnicas de distracción y la valoración de resultados de dolor cuando las aplican. Se utilizó un abordaje teórico desde las técnicas no farmacológicas en la prevención del dolor. Los enfermeros participantes del estudio conformaron un grupo con mayoría de titulación técnica (82%) y un 45% con una antigüedad como enfermero pediátrico mayor a 5 años.

La totalidad de los enfermeros dijeron conocer la existencia de técnicas distractoras. Nueve enfermeros (81,81%) manifestaron que las técnicas son efectivas porque el paciente se tranquiliza previamente a iniciar la técnica (4 enfermeros) y porque el distractor los abstrae de lo que está ocurriendo (5 enfermeros). Dos profesionales perciben que la técnica no cambia la situación de dolor o stress del paciente porque la desconfianza hacia la técnica o hacia el equipo de salud supera a los distractores. Los indicadores de frecuencia respiratoria y cardíaca post-técnica contradijeron la percepción de utilidad de los enfermeros.

Palabras clave: Técnicas de distracción en Enfermería; Dolor en la punción venosa; Niños internados de 2 a 12 años.

INTRODUCTION

In the literature, there is evidence of a lack of knowledge among nursing professionals in pain assessment and a lack of implementation of pharmacological and non-pharmacological measures when performing invasive techniques. For example, Llorente Pérez, in addition to highlighting the lack of knowledge of nursing professionals in pain assessment, emphasizes the lack of a uniform validated tool for this purpose that not only measures the intensity but also whether the measures taken are adequate for its reduction or elimination (Llorente Pérez, 2016).

Correct assessment, control, prevention, and pain management are priorities when working with children and constitute the fundamental pillar for offering quality care. The role of the nursing area is essential since they are the professionals who are most involved in the care and maintenance of their health, monitoring and controlling the appearance of pain and acting as a link between the patient and the family and the rest of the health professionals. Nursing professionals must address this using a tool that allows for adequate assessment, applying pharmacological and non-pharmacological interventions, and correctly monitoring the measures adopted.

For all these reasons, it would be beneficial for professional nursing practice to have up-to-date knowledge of the different distraction methods so that they can be implemented at the appropriate times, always to reduce the degree of pain caused in children by painful procedures.

The present work aims to describe the relationship between the use of distraction techniques and pain in venipuncture in children aged 2 to 12 in a Pediatric Intermediate Care Unit from November to

December 2020. This research's results will benefit nursing professionals and their patients because they may allow progress in resolving the problem at hand.

What are the results of the use of distraction techniques on pain during venipuncture in children aged 2 to 12 years in a Pediatric Intermediate Care Unit in the months of November-December 2020?

General objective

To describe the relationship between the use of distraction techniques and pain during venipuncture in children aged 2 to 12 years in a Pediatric Intermediate Care Unit in the months of November-December 2020.

METHODS

The present work was non-experimental; that is, no variables were controlled and studied as they were presented in reality.

In terms of the depth of the study, descriptive work was carried out to describe the relationship between the use of distraction techniques and pain in venipuncture in children aged 2 to 12.

The study was cross-sectional in terms of time, and the data was obtained in a single instance in the Intermediate Admission Room of the Children's Sanatorium from November to December 2020.

The approach was qualitative, and nominal characteristics of the variables were measured.

Area of study.

The Sanatorio de Niños is located in the center of Rosario, in the province of Santa Fe. It was conceived in 1960 to provide care for children on an outpatient and inpatient basis. Today, it is the most modern and comprehensive pediatric care center in the country's interior. It belongs to the tertiary level of health care as it has highly complex equipment to care for complex pathologies requiring specialized and high-tech procedures.

The Intermediate Inpatient Ward is located on the ground floor and has a capacity of 27 beds. It is divided into 18 rooms, 9 of which have two beds, and the rest are private rooms with one bed. The ward also has a nursing office and another for doctors.

Participants.

The study sample consisted of 11 nursing professionals who provided services in the Intermediate Admission Ward of the Children's Hospital in Rosario from November to December 2020.

All professional nurses, whether graduates or with postgraduate qualifications, who work permanently in the Intermediate Intensive Care Unit of the Children's Hospital were included, as they perform venipuncture on hospitalized children daily.

All nursing professionals working in other sectors of the hospital were excluded, as were temporary professionals on duty to cover ordinary annual leave.

Study variables.

Two variables were studied, where pain—perceived by patients—was a dependent variable on the use of distractors by nurses, which was an independent variable.

To enrich the description, the dependent variable included two dimensions that allowed for the discrimination of the sociodemographic characteristics of the nurse population and their knowledge and practice of the techniques. Pain, on the other hand, included physiological and personal indicators for assessment.

The complete table of variable operationalization can be consulted in Appendix I.

Techniques and instruments.

To collect the necessary data, a survey technique was used, and a self-administered questionnaire with 14 items was prepared (see Annex III).

The first four investigated the sociodemographic characteristics of the nurses: gender, age in completed years—by intervals—, time working as a pediatric nurse in completed years—by intervals—and the highest level of education achieved. The next three investigated the nurses' knowledge and

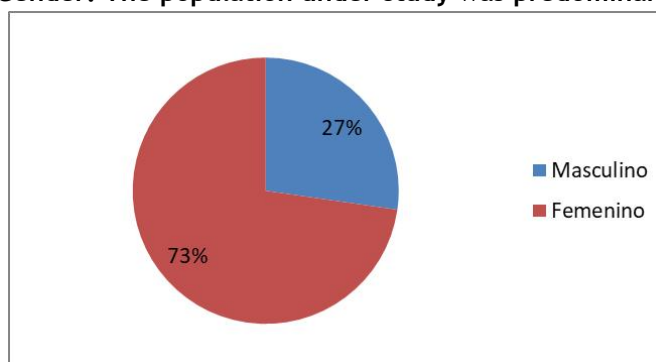
experience in the use of distraction methods. The final seven items were aimed at finding out about the experience of pain in the children assessed by these nurses.

Ethical considerations

Voluntary and informed participation was guaranteed at all times. The confidentiality of the data and its exclusive use for the present investigation was ensured through the delivery and completion of the informed consent document (see annex II). This document was given to all the selected nursing professionals who made up the sample under study.

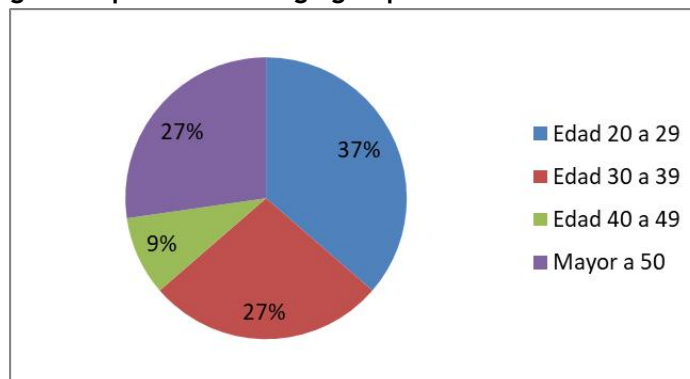
The collected results were tabulated in double-entry tables in an Excel spreadsheet, and graphs were made in the same application to present the results on a population of 11 nurses in the study area who answered a 14-item questionnaire.

Graph 1. Gender. The population under study was predominantly female.



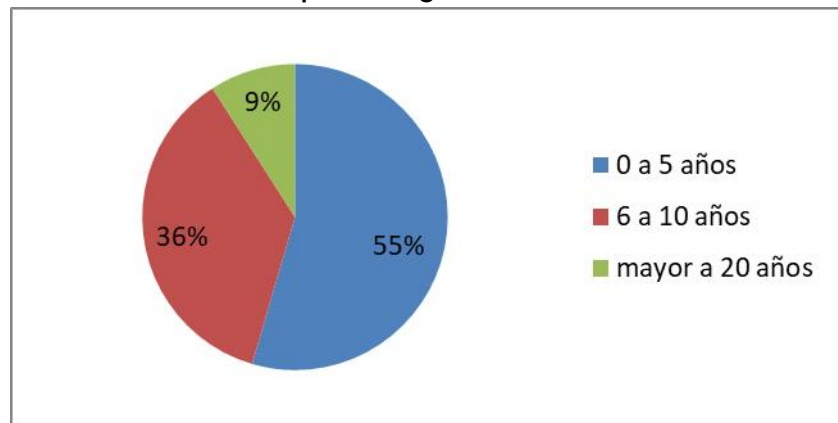
Source: Author's own creation.

Graph 2. Age. The predominant age group was between 20 and 29 years old.



Source: Author's own creation.

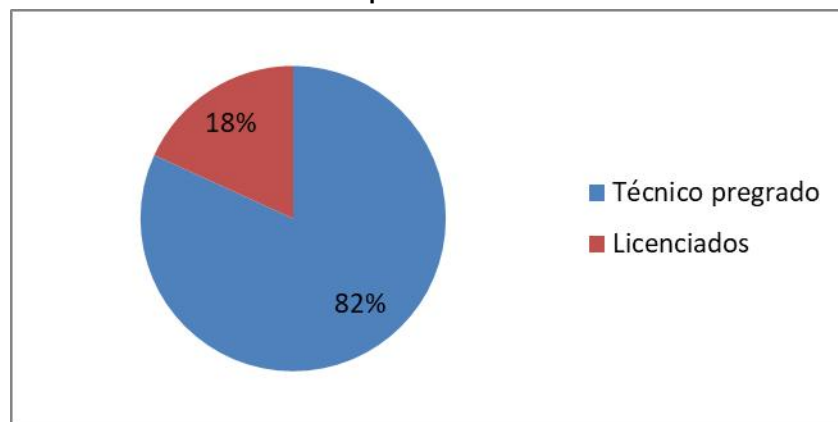
Graph 3. Length of service.



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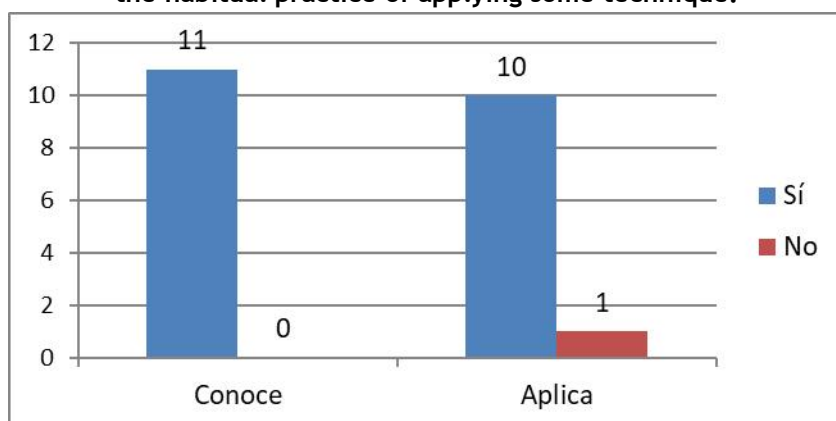
55% of the nurses have less than 5 years' experience as pediatric nurses and 36% have between 6 and 10 years. Nine nurses in the department are at a technical level and two have a degree in Nursing.

Graphic 4. Title.



Source: Author's own creation.

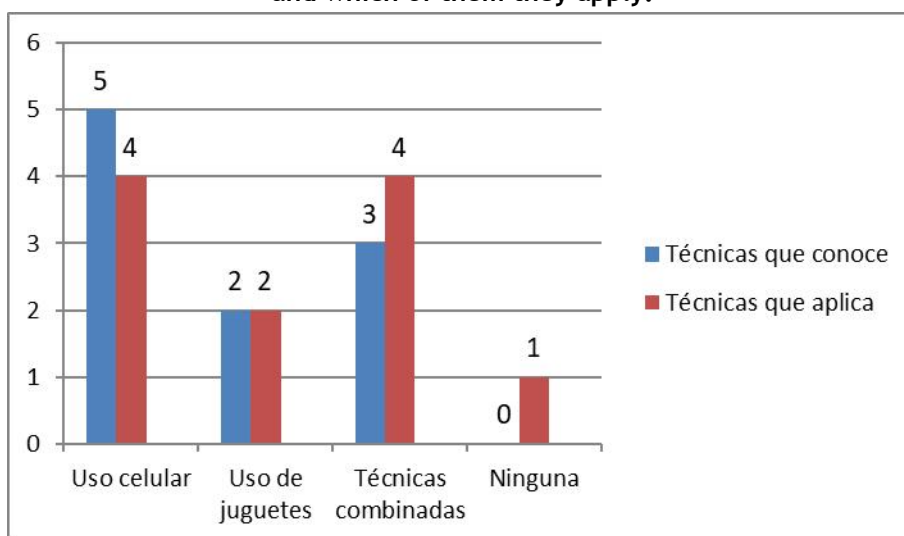
Graph 5. Nurses' knowledge of the existence of non-pharmacological techniques to reduce pain and the habitual practice of applying some technique.



Source: Author's own creation.

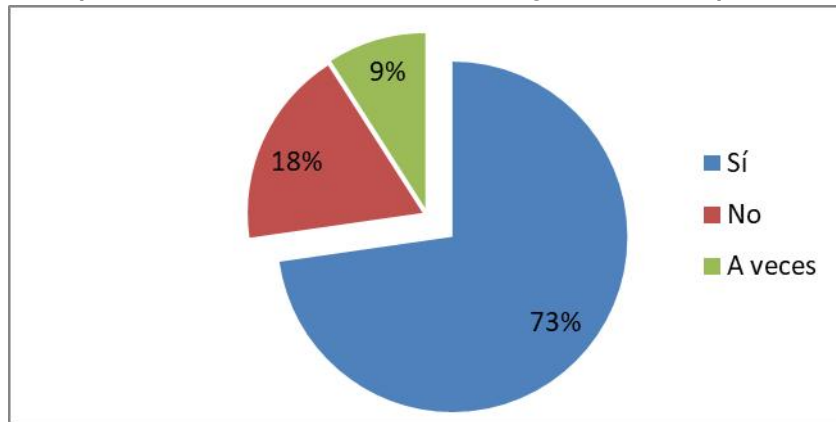
All of the nurses consulted stated that they were aware of the existence of the techniques, but one of them does not apply it in their daily practice.

Graphic 6. Specific non-pharmacological techniques to reduce pain that nurses are familiar with and which of them they apply.



Source: Author's own creation.

Graph 7. Nurses' perception of the effectiveness of distracting techniques to reduce pain and their opinion as to why they are not effective -when the perception is negative- and their perception of personal results obtained when using these techniques.



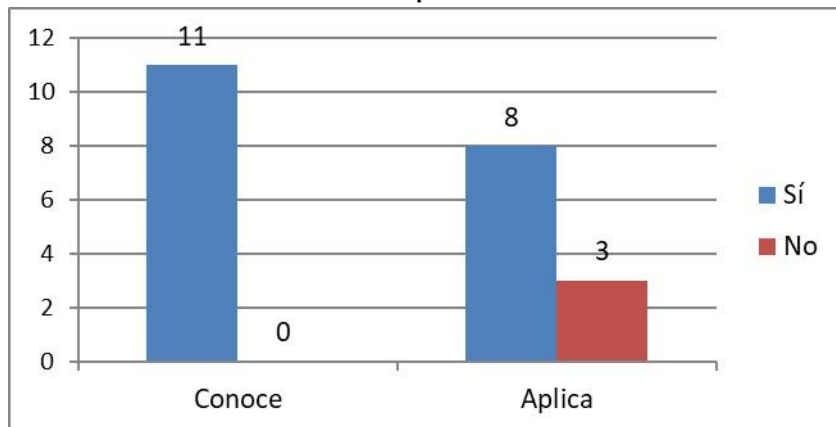
Source: Author's own creation.

73% of nurses believe that the techniques are effective when they use them. The two nurses who believe they are not effective based their response to the second part of the item on the arguments “distrust is greater than the distractor” - nurse number 9 - and “health personnel represent a danger and do not negotiate in the face of the strange” - nurse number 11.

Graphs 8 and 9. Nurses' knowledge of the existence of pain assessment scales and the routine practice of applying any of them.

All the nurses are aware of the existence of scales, but 3 do not use them.

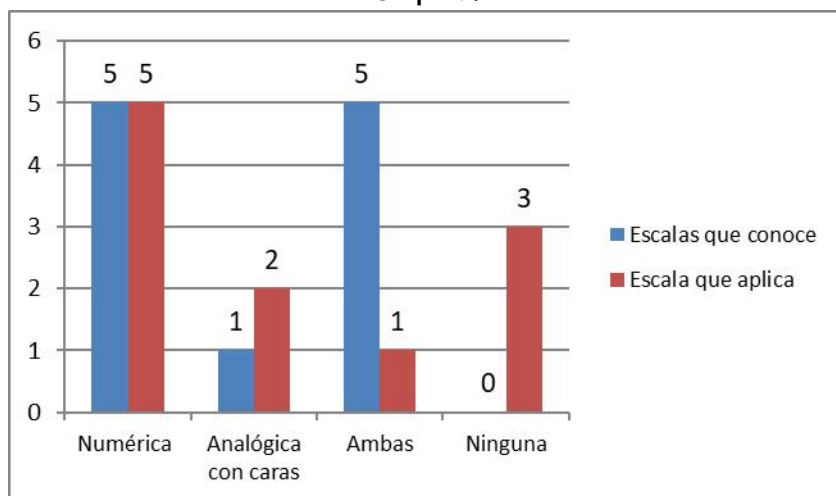
Graph 8.



Source: Author's own creation.

When asked about two types of pain assessment scale, 5 nurses said they were familiar with both, another 5 knew the numerical scale and the rest the analogical scale with faces. Eight nurses apply some scale to assess pain.

Graph 9.

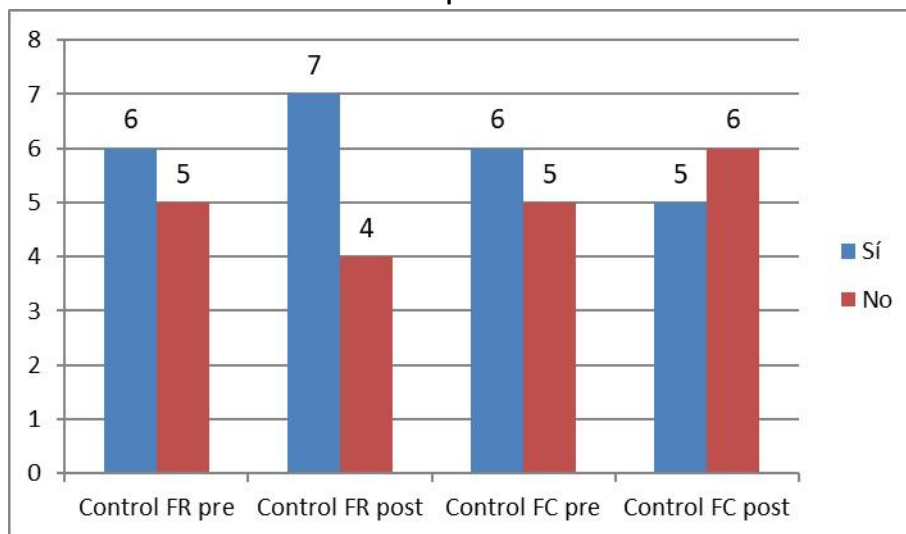


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Graphs 10 to 13. Assessment of respiratory rate (RR) and heart rate (HR) before performing the technique and at the end of it.

Six nurses said they checked HR and RR before performing the venipuncture technique. Seven refer to checking RR post-technique and five to checking HR.

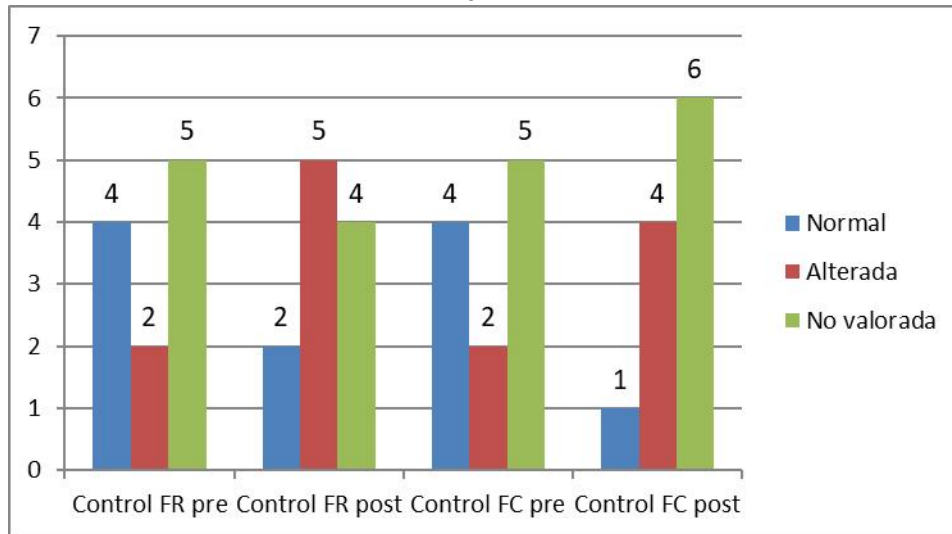
Graph 10.



Source: Author's own creation.

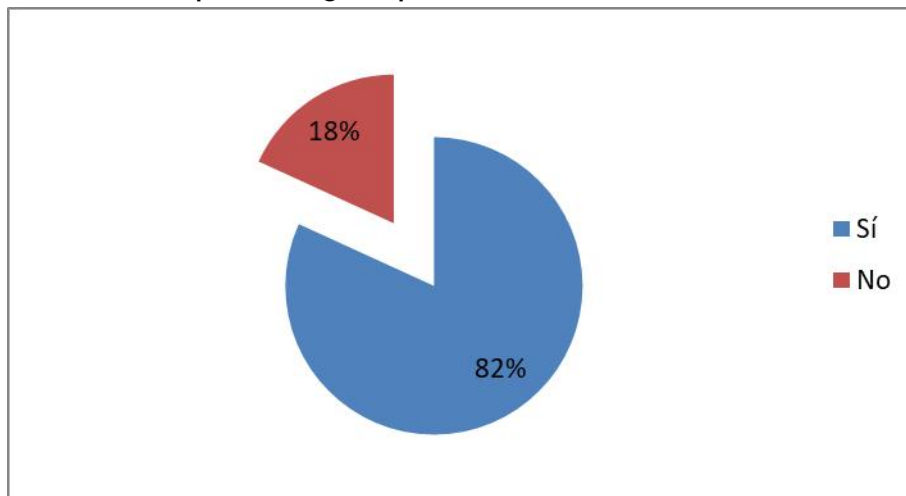
When asked what the results of the assessments were, four nurses said that the RR and the HR showed typical values before performing the technique, and two nurses pointed out the presence of alterations for both. When they carried out the check at the end of the method, five reported finding an alteration in RR and four in HR, while only 2 reported a normal RR and one normal HR. Five nurses stated that they did not assess RR and HR before performing the technique, and in the post-technique, four did not assess RR, and six did not assess HR.

Graph 13.



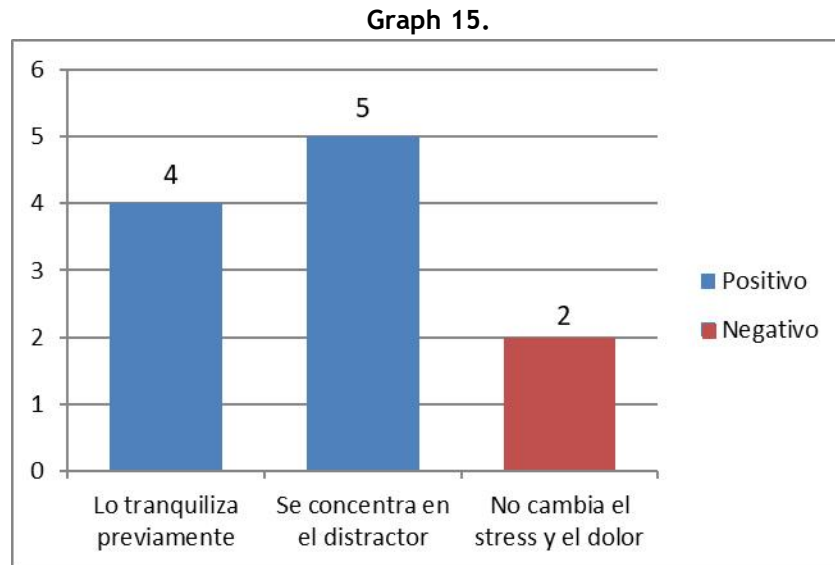
Source: Author's own creation.

Graph 14. Perception of the effectiveness of non-pharmacological techniques by nurses to reduce pain during venipuncture. Individual basis.



Source: Author's own creation.

Nine nurses stated that they consider the distraction technique to be effective. Among those who consider it effective, four believe that the effectiveness is related to the fact that the patients calm down beforehand and five think that the distraction focuses their concentration. The two nurses who have a negative opinion believe that the distraction does not change either the stress or the pain.



Source: Author's own creation.

CONCLUSIONS

Distraction techniques to prevent procedural pain in children are well-known in our environment. Despite their good results when used properly, their application in services is not as extensive as desired.

The group of 11 nurses studied has professional training, and almost half of the group has more than 5 years of experience. When it came to theoretical knowledge and personal perceptions regarding the use and usefulness of distraction techniques, the vast majority of these nurses stated that they knew the methods, used them, and perceived that they achieved the objective of preventing pain (except for the two nurses who maintained their skeptical position regarding the usefulness of the technique throughout all the items). The use of cell phones and techniques combined with children's programs on television, listening to music, or drawing were the most common.

However, when clinical methodological aspects were examined in depth, inconsistencies were found because the RR values showed a post-technique alteration in 71.42% of the cases evaluated and 80% in the HR alterations. This contrasts with the nurses' response, where 73% believe distraction techniques are effective, and 82% believe distraction techniques are generally helpful.

The general objective of describing the relationship between distraction techniques and pain during venipuncture in children aged 2 to 12 years in a Pediatric Intermediate Care Ward in November-December 2020 is achieved. Regarding the hypothesis, the reduction of pain in children during the venipuncture technique is highly regarded as valid by most nurses, without correlation in the data evaluated in RR and HR post-puncture, which show a biological response different from that perceived by the nurses.

Recommendations

The lessons learned from carrying out this work suggest the need to validate the instrument to be used and increase the number of participating professionals. Without a doubt, the experience would have been more enriching.

On the other hand, the theoretical approach as procedural pain would better frame the concern for disseminating this problem and the need to use strategies to prevent, reduce, or eliminate this type of sensation.

Finally, after asking about the knowledge and use of pain scales, the result of this assessment should have been consulted to complement the RF and HR assessments. Knowing the result of the assessment scales—that is, the child's first-person perception of pain—would have made it possible to determine whether, despite altered biological indicators, the subjective perception showed a decrease in the painful sensation.

REFERENCES

1. Cocerá Martínez, L. Efectividad de las medidas analgésicas empleadas para el alivio del dolor durante la punción venosa en niños (tesis fin de grado). Universidad de Jaén; 2016. España.
2. Covarrubias A, Guevara U, Gutiérrez C, Betancourt JA, Córdova JA. Epidemiología del dolor crónico en México. *RevMexAnesthesiol.* 2010; 33(4):207- 2013.
3. Llorente Pérez, M. Manejo del dolor infantil por el profesional de Enfermería (fin de grado). Universidad de Valladolid; 2016. España.
4. Martínez, L. (). Efectividad de las medidas analgésicas empleadas para el alivio del dolor durante la punción venosa en niños (fin de grado). Universidad de Jaén; 2016. España.
5. Míguez MC. Utilización de un sistema de videodistracción para disminuir la ansiedad y el dolor en niños durante la venopunción en un servicio de urgencias pediátricas. [tesis doctoral]. Madrid: Departamento de Pediatría Facultad de Medicina, Universidad Autónoma de Madrid; 2013. 132 p.
6. Navarro, M. Utilización de un sistema de videodistracción para disminuir la ansiedad y el dolor en niños durante la venopuncion en un servicio de urgencias pediátricas (tesis doctoral). Universidad autónoma de Madrid; 2013. España.
7. Pérez, M. Manejo del dolor infantil por el profesional de enfermería (fin de grado). Universidad de Valladolid; 2016. España.
8. Rioja, S. Nuevas tecnologías en el manejo del dolor y la ansiedad pediátricos (tesis doctoral). Universidad autónoma de Madrid; 2018. España.
9. Sánchez, C. Revisión bibliográfica sobre las distracciones como método para controlar el dolor en pacientes pediátricos durante las intervenciones de Enfermería (tesis de maestría). Universidad de Alicante; 2018. España.

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CONFLICT OF INTEREST

None.