REPORT. WORKPACKAGE 2

RESULTS OF THE DISSEMINATION OF THE QUESTIONNAIRE ON ATTITUDES, KNOWLEDGE AND BELIEFS ABOUT THE HUMANIZATION OF PEDIATRIC PAIN CARE WITH A NON-PHARMACOLOGICAL APPROACH

Project number 101177475 Project Title: Higher Education as a driving force in humanization of pediatric pain care Project title: Higher education as a driver in the HUmanisation of PEDiatric pain CARE Project caroming: HUPEDCARE

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NAME OF THE UNIVERSITY	National University of Trujillo (UNT)

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TABLE OF CONTENTS

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1. Scope of the questionnaire.

The questionnaire has a multi-center and international approach, and is aimed at:

- Health professionals (nursing, medicine, physiotherapy, etc.).
- Teachers and researchers in Health Sciences.
- Students of health-related careers.

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2. Motivation

Pain in childhood is a complex experience that, if not adequately addressed, can have lasting physical, emotional, and psychological consequences. Despite scientific and technical advances in pediatric pain management, significant challenges remain in its assessment and treatment, especially in settings where non-pharmacological approaches are not yet sufficiently integrated into routine clinical practice.

In this context, the humanization of pediatric care is positioned as an urgent and priority need. Humanization implies recognizing the child not only as a patient, but as a person, with specific rights, emotions, fears, and needs. This approach demands a transformation in care and training models, promoting more empathetic, personalized interventions focused on the comprehensive well-being of the child and their family.

The main motivation for this questionnaire is the need to understand the level of knowledge, attitudes, and current practices of healthcare professionals, teachers, and students regarding the nonpharmacological treatment of childhood pain. This information is intended to highlight training gaps and identify opportunities for improvement that will allow for the promotion of more humane and effective educational strategies.

This effort is part of the HUPEDCARE Project, which seeks to strengthen higher education capacities by creating learning environments sensitive to children's suffering, promoting humanization as a cross-cutting theme of pediatric care. Through this initiative, we hope to contribute to a paradigm shift in child care, integrating scientific evidence with compassion and respect for the dignity of children.

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3. Questionnaire Objectives

The questionnaire is part of the HUPEDCARE (Capacity Building in Higher Education) Project, funded by the European Union, whose purpose is to promote the humanization of pediatric care through higher education.

The specific objectives of the questionnaire are:

- To identify training gaps in the field of pediatric pain management, especially with regard to non-pharmacological approaches.
- To evaluate the knowledge, attitudes, and beliefs of health sciences professionals and students about pain in childhood.
- Analyze the current status of academic and professional training in relation to the humanization of pediatric care.
- Identify opportunities for improvement in educational programs to promote a more humane and effective approach to treating childhood pain.
- Contribute to the design of educational strategies that integrate the humanization of pediatric care as a fundamental axis in healthcare training.

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4. Model questionnaire

The Capacity Building Project "HUPEDCARE" (project code 101177475) is funded by the European Education and Culture Executive Agency (EACEA) and is supported by the Faculties of Physiotherapy and Nursing of the Toledo Campus (UCLM), as well as European and international universities. The Principal Investigator (PI) of this project is Ms. Sagrario Gómez Cantarino.

This questionnaire is part of a multicenter study aimed at examining Higher Education as a driving force in the humanization of pediatric care (HUPEDCARE). The questions address healthcare professionals' knowledge of the identification of pediatric pain and the available alternative treatments for its prevention and management.

We would like your participation to draw relevant conclusions. Please answer all questions as carefully and honestly as possible. The questionnaire is anonymous. Personal data is completely confidential and will be protected under Spanish data protection regulations, as set out in Organic Law 3/2018, of December 5, on the Protection of Personal Data and Guarantee of Digital Rights (LOPDGDD).

Thank you very much for your collaboration and for contributing to the development of this research.

I agree to participate in the study and authorize my responses to be used for research purposes.

- YES□
- NO□

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SOCIODEMOGRAPHIC DATA:

Please check the appropriate option:

SEX: Female □Male □Other: _____

AGE: 20-30 □31-40 □41-50 □>50□

COUNTRY (specify city):

SCOPE OF WORK:

- Assistance:□
- Teacher and/or researcher:□
- Student:□

PROFESSION AND/OR AREA OF STUDY:

- Nursing:□
- Medicine:□
- Physiotherapy:□
- Auxiliary nursing care:□
- Others: _____

Do you work while studying? Yes □No□

DO YOU HAVE MINOR CHILDREN? YES □NO□

DO YOU HAVE ELDERLY PEOPLE IN YOUR CARE? YES □NO□

DO YOU HAVE DEPENDENTS IN YOUR CARE? YES □NO□

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KNOWLEDGE OF BASIC CONCEPTS ABOUT PEDIATRIC PAIN

Please choose the option you consider most appropriate:

TO VERIFY THE CLAIM THAT A CHILD HAS INTENSE PAIN, IT MUST BE BASED ON THE OBSERVATION OF CHANGES IN VITAL SIGNS.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

BECAUSE THE NEUROLOGICAL SYSTEM IS DEVELOPING IN CHILDREN UNDER 2 YEARS OF AGE, THEY HAVE REDUCED SENSITIVITY TO PAIN AND MEMORY OF PAINFUL EXPERIENCES.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

SIMILAR STIMULI IN DIFFERENT CHILDREN PRODUCE THE SAME INTENSITY OF PAIN.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

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CHILDREN LESS THAN 6 MONTHS OF AGE CANNOT TOLERATE OPIOIDS FOR PAIN RELIEF.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

AFTER THE RECOMMENDED INITIAL DOSE OF ANALGESIC, SUBSEQUENT DOSES SHOULD BE INDIVIDUALIZED ACCORDING TO THE PATIENT'S RESPONSE.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

It is advisable to use non-pharmacological pain interventions independently, rather than in conjunction with pain medication.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

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ATTITUDES AND BELIEFS ABOUT PEDIATRIC PAIN

Please choose the option you consider most appropriate:

CHILDHOOD PAIN IS A PERSONAL EXPERIENCE INFLUENCED BY BIOLOGICAL, PSYCHOLOGICAL AND SOCIAL FACTORS.

- Totally disagree□
- Disagree□
- Something in disagreement□
- Somewhat agreed□
- OK□
- Totally agree□

NONPHARMACOLOGICAL INTERVENTIONS (BREASTFEEDING, KANGAROO METHOD, ORAL SUCROSE OR GLUCOSE, AND NONNUTRITIVE SUCKING) ARE VERY EFFECTIVE FOR CONTROLLING MILD TO MODERATE PAIN, BUT ARE RARELY USEFUL FOR MORE SEVERE PAIN.

- Totally disagree□
- Disagree□
- Something in disagreement□
- Somewhat agreed□
- OK□
- Totally agree□

DURING PAINFUL PROCEDURES, PARENTS SHOULD NOT BE PRESENT.

- Totally disagree□
- Disagree□
- Something in disagreement□
- Somewhat agreed□
- OK□
- Totally agree□

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CHILDREN IN PAIN SHOULD BE ENCOURAGED TO ENDURE THE PAIN AS MUCH AS POSSIBLE BEFORE RESORT TO PAIN RELIEF.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

GIVING CHILDREN PLACEBOS (STERILE WATER OR SALINE, AMONG OTHERS) IS OFTEN A USEFUL TEST TO DETERMINE IF THE PAIN IS REAL.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

OPIOIDS FOR THE TREATMENT OF ACUTE PAIN CAN CAUSE ADDICTION IN PEDIATRIC PATIENTS.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

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CARE AND TRAINING IN PEDIATRIC PAIN.
Please select the option you consider most appropriate.

I KNOW AND APPLY THE PAIN EVALUATION SCALES IN CHILDREN.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

I KNOW AND APPLY THE WHO LINEAR SCALE OF PAIN TREATMENT LEVELS IN CHILDREN (ANALGESIA SCALE)

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

TRAINING ON ACUTE PAIN IN CHILDREN AND ITS MANAGEMENT IS SUFFICIENT.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

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I KNOW HOW TO IDENTIFY EARLY SIGNS OF PAIN IN NEWBORNS.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

I KNOW HOW TO ACT IN THE FACE OF ACUTE PAIN IN CHILDREN.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

ANALGESIA SHOULD BE USED BEFORE PERFORMING ADDITIONAL TRAUMA TESTS.

- Totally disagree
- Disagree
- Something in disagreement
- Somewhat agreed
- OK
- Totally agree

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ISSUES :

Please select the option you consider most appropriate.

DO CHILDREN HAVE MEMORY OF PAINFUL EPISODES?

- YES □ NO □

DO YOU THINK THAT INADEQUATE PAIN CONTROL CAN INFLUENCE THE ADULT PERSONALITY OF CHILDREN?

- YES □ NO □

IS PAIN PROPORTIONAL TO THE MAGNITUDE OF THE INJURY THAT CAUSES IT?

- YES □ NO □

IS IT USEFUL TO EXPLAIN TO A 4-YEAR-OLD CHILD WHAT YOU ARE GOING TO DO TO MAKE HIM/HER CALMER?

- YES □ NO □

DOES PAIN IN CHILDREN INTERFERE WITH CURRICULAR AND EXTRACURRICULAR ACTIVITIES IN CHILDREN OVER 6 YEARS OLD (SCHOOL, GAMES, ETC.)?

- YES □ NO □

DOES PAIN AFFECT THE CHILD'S SOCIAL INTERACTION (CLASSMATES, TEACHERS AND FAMILY)?

- YES □ NO □

DOES PAIN INFLUENCE A CHILD'S CHOICE OF SOCIAL OR RECREATIONAL ACTIVITIES?

- YES □ NO □

CAN PAIN AFFECT CHILDREN'S COGNITIVE AND EMOTIONAL DEVELOPMENT?

- YES □ NO □

ARE APPROPRIATE ANALGESIC MEASURES TAKEN PROACTIVELY BEFORE PERFORMING ADDITIONAL PROCEDURES OR POTENTIALLY TRAUMATIC DIAGNOSTIC TESTS IN CHILDREN?

- YES □ NO □

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IS THE TRAINING RECEIVED ON ACUTE PAIN MANAGEMENT IN CHILDREN ADEQUATE TO IDENTIFY, EVALUATE, AND TREAT THIS PAIN EFFECTIVELY?

- YES □ NO □

PLEASE INDICATE HERE ANY OTHER COMMENTS OR SUGGESTIONS YOU WOULD LIKE TO ADD TO THIS QUESTIONNAIRE (OPTIONAL).

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5. Distribution strategy .

The survey distribution strategy, part of the "Higher Education as a Driver of Humanization in Pediatric Pain Care" (HUPEDCARE) project, was a comprehensive approach to ensure broad participation across all continents. The steps taken in this distribution strategy are detailed in the following sections:

1. Survey design and website implementation
The survey was implemented on the project's dissemination website, allowing for anonymous responses to ensure the privacy and impartiality of the comments. Partners were asked to translate the survey into the project languages to reach a wider audience. The survey was distributed in Portuguese, Spanish, English, Turkish, and Polish, with direct links to these versions on the project website.

2. Definition of the target audience and data collection
The world population was segmented by countries and regions related to the project partners.

Each partner collected contact information from academic institutions in the health field, professional associations, and hospitals in the most representative countries on all continents. As a result, 99,432 potential contacts were collected for survey responses.

3. Sending invitations to participate in the survey
Several email accounts were created associated with the project promotion website, and a mail server was programmed to send survey invitations.

Two emails were sent to each contact registered in the database. The first introduced the project and requested survey participation, while the second served as a reminder and promoted the project's social media channels.

Social media accounts were created for the project, and posts inviting people to participate in the survey were made across various platforms, including Twitter, Instagram, and LinkedIn.

This strategic approach to survey distribution was designed to ensure broad reach, encouraging participation from diverse academic institutions and health professionals from all continents. The multilingual survey, combined with targeted outreach via email and social media, aimed to maximize participation and collect comprehensive data for the project.

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6. Data collection and study of the sociodemographic variables used.

The questionnaire was completed by 2,639 people, including healthcare professionals (such as nurses, physicians, and physiotherapists), teachers, researchers, and students in the healthcare field. A detailed analysis of the results is presented below.

The sociodemographic variables used (age, gender, continent and profession/area of study) were first analyzed.

The different questions in the questionnaire were then analyzed globally, but also segmented based on the previously studied sociodemographic variables. This was done to gain a deeper, more precise, and contextualized understanding of the training reality surrounding pediatric pain and its humanized approach from a global, integrative, and multicultural perspective.

6.1. Survey participants by sex

Of the total number of participants evaluated, 80.5 % belongs to the female sex and 19.5 % male. This distribution shows a notable predominance of women within the group analyzed.

The marked female predominance (80.5 %) compared to men (19.5 %) could be attributed to various contextual factors; the sample includes areas of nursing, nursing assistant, medicine, and physical therapy studies where the participation of women tends to be statistically higher, given that these professions have historically been accepted by the female sex (Ruiz-González et al., 2020). This trend not only reflects cultural patterns but also vocational, social, and structural decisions that must be considered when designing intervention policies or programs.

The overrepresentation of women in the sample could affect the generalizability of the results, because the perceptions, needs, or responses of this population may differ from those of men. According to recent data, in studies related to community health and education, women have shown a greater willingness to participate in research and collective projects, which could also explain their greater representation (Martínez-Montoya & Pérez-Gómez, 2021). This pattern has also been observed in research where the focus on care, emotionality, or social sensitivity, in this case pain management in children, are central aspects (Sánchez-Valle & Torres-García, 2022).

Therefore, future research should consider strategies to achieve more balanced participation between the sexes, or conduct sex-differentiated analyses, in order to make visible the possible gender particularities or inequalities in the phenomenon under study (UNESCO, 2023).

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6.2. Survey participants by age

The distribution by age group shows a marked concentration of participants between 20 and 30 years old, with a total of 1,592 people, which represents a significant majority. This is followed by the groups of 31 to 40 years old (337), 41 to 50 years old (258), over 50 years old (232) and, finally, under 20 years old (220). This trend shows that the majority of the sample belongs to the young-adult group.

The predominance of the 20 to 30 age group (with over 60 % of the sample) may be associated with the context in which the study is carried out, since it is framed in an educational, healthcare or training environment, where it is understandable that young adults in the stage of vocational training or job insertion are represented (González & Peralta, 2021). This age group is characterized by high digital connectivity, participation in networks and willingness to learn, factors that usually facilitate their involvement in social interventions (Vásquez-Torres & Mena, 2022).

From a demographic and sociological perspective, the overrepresentation of young adults—this group brings dynamism and openness to change—may limit the overall reach of the conclusions. Recent research underscores the need to integrate diverse age ranges to enrich the analysis and ensure generational inclusion, especially in areas such as the present study, such as health, education, and community participation (López-Leyva et al., 2023).

Furthermore, the low participation of people over 50 years of age (only 232) could be related to technological barriers, lesser interest, or a lack of inclusive strategies for this segment. Therefore, methodologies that consider generational diversity should be designed to avoid bias and strengthen representativeness (UNFPA, 2024).

6.3. Survey participants by continent

The geographic distribution of respondents by continent reveals that Europe accounts for the majority of the sample, with 1,682 respondents, followed by the Americas with 583, Africa with 354, Asia with 14, and Oceania with only 6 participants. The difference between continents is notable, with Europe being the most represented region, while Asia and Oceania show almost no participation.

The overwhelming European representation (approximately 65% of the total) can be explained by various factors, such as ease of digital access, consolidated institutional networks, and public policies, such as those emanating from various study centers, which promote participation in scientific research (Fernández & Martín-González, 2021). America and Africa also appear with relevant participation, although considerably lower. In contrast, Asia and Oceania present almost symbolic figures, which could be due to language differences,

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technological restrictions, or the lack of collaborative networks, a situation that limits their participation.

The disproportionality in participation by continent raises serious methodological implications. On the one hand, the data could reflect a Eurocentric bias, which influences the overall interpretation of the results regarding the humanization of pediatric care in the face of non-pharmacological pain treatment. According to Páez & Delgado (2022), the overrepresentation of a region in global studies can make local realities invisible; therefore, the findings cannot be assumed to be generalizable to all cultural and geographical contexts.

On the other hand, the low participation of Asia and Oceania, regions with great sociocultural diversity, represents a significant limitation. Including voices from these territories is essential for the design of more equitable international policies (UNESCO, 2023). The solution to this gap involves strengthening regional research networks and adopting multilingual, accessible, and culturally adapted strategies (Kimura & Tanaka, 2020).

6.4. Survey participants by profession and/or area of study

The analysis of staff distribution by profession reveals a marked disparity between the categories evaluated. The data illustrate that the "Nursing" category is the predominant one, with a total of 1,977 participants, representing the largest proportion of staff (Martínez & García, 2023). "Medicine" follows with 475 individuals, occupying the second place in number. In contrast, "Physiotherapy" records 106 professionals, while "Others" groups 66 participants. The category with the lowest representation is "Nursing Assistant," with only 15 professionals. These results suggest a staff structure heavily skewed toward the nursing sector.

The overwhelming presence of nursing professionals, with 1,977 individuals, indicates the backbone of the workforce in the evaluated context (Sánchez & Pérez, 2022). This prevalence could be due to the labor-intensive nature of nursing tasks, which range from direct patient care to service administration and coordination, which requires a significantly higher number of professionals compared to other specialties. The substantial difference with the "Medicine" category (475 individuals) highlights a possible hierarchical or functional structure where physicians assume diagnostic and prescribing roles, while nursing staff execute and monitor the care plan continuously. The lower proportion of "Physical Therapy" (106) and "Nursing Assistant" (15) could reflect a more specific demand for these specialties or a different organization of human resources in the system (López & Fernández, 2024).

The observed staffing distribution raises several important considerations regarding human resource planning and healthcare delivery. The high concentration of nurses is consistent with modern care models that emphasize comprehensive and continuous patient care, where nursing plays a central role in patient recovery and well-being (Ramírez & Soto, 2021). However, the low representation of nursing assistants, who typically support nursing duties, could

indicate a potential overload for nursing staff, as they may be assuming tasks that would normally fall to assistants. This situation could impact operational efficiency and the quality of care if nurses are performing delegable tasks rather than focusing on functions that require their level of experience and licensure (Gómez & Díaz, 2025). The disparity could also reflect a hiring policy or a shortage of professionals in certain areas, which warrants further investigation to optimize resource allocation and ensure adequate coverage across all healthcare specialties (Cruz & Vargas, 2020). It is essential to balance the number of professionals in each category to ensure comprehensive and sustainable care, aligned with the needs of the population and the workload of each specialty.

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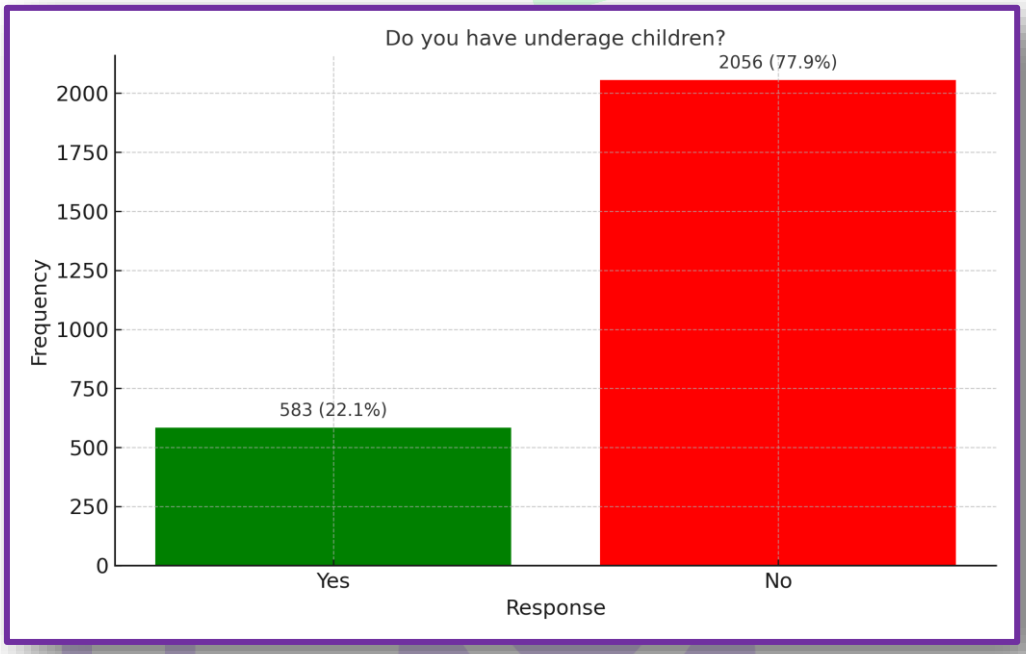
7. Analysis of the results.

7.1. Q7-Do you have minor children?

Ask	Yes	No
Do you have minor children?	583 (22.1%)	2056 (77.9%)



The results of the study show that the majority of participants (77.9 %) do not have minor children, while only 22.1 % do. This percentage difference is significant from the perspective of analyzing the profile of healthcare personnel and their relationship with pediatric care, since direct experience as parental caregivers can significantly influence the perception of childhood pain and the application of humanized approaches in the pediatric clinical setting.

Several studies have shown that the parental role, especially when it comes to children with chronic or complex health conditions, changes the way caregivers understand children's suffering, increasing their empathy, sensitivity, and emotional responsiveness (Teicher et al., 2023). Therefore, health professionals who have assumed this role tend to show greater receptivity to child-centered interventions, given their firsthand experience of the limitations of the health system, emotional overload, and the need for more humane support.

In contrast, those who have not had children or have not served as primary caregivers may have a more distant or technical understanding of childhood pain, based primarily on biomedical criteria. This can create gaps in the implementation of humanized practices, especially in contexts such as pediatric

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care, where subjective interpretation of pain, emotional comfort, and emotional bonding play a crucial role (Shattnawi, Lee, & Al-Motlaq, 2023).

Furthermore, studies have shown that parents who work in the healthcare sector and care for children with special needs or chronic illnesses face a high emotional, physical, and economic burden. Shattnawi et al. (2023) found that these professionals are at greater risk of developing psychosomatic illnesses, a decrease in quality of life, and mental overload, a situation that not only affects their personal well-being but also their job performance. This dual burden—professional and familial—can generate a particular sensitivity toward the suffering of other children and families in the clinical setting, which translates into more empathetic practices and less focus on standardized procedures.

During the COVID-19 pandemic, these tensions intensified considerably. Çakma & Abidin (2021) found that healthcare workers with young children experienced significantly higher levels of anxiety and emotional exhaustion, particularly when forced to combine clinical shifts with parenting duties without adequate support. This critical experience also generated increased awareness about the need for work-life balance policies and humanized care practices, especially in areas such as pediatrics and neonatology.

On the other hand, Us, Boran, Yalçın, et al. (2024) provide evidence of the bidirectional impact between the work and family environments, demonstrating that the stress of working mothers in the health sector during the pandemic directly impacted their children's emotional and behavioral health. This finding reinforces the idea that professionals who are parents develop a broader and more comprehensive view of child care, recognizing both the clinical and the affective and psychosocial dimensions of the child's suffering.

In this sense, the small percentage of respondents with minor children in the present study suggests that a significant proportion of professionals may lack the direct experience that strengthens empathy in pediatric care. While professional training provides clinical tools, it is the experience of daily care—especially under adverse conditions—that enhances understanding of children as active subjects of care, with complex and unique emotional needs.

Therefore, it is essential that training institutions and health centers include pedagogical and awareness-raising strategies that strengthen empathy and understanding of children's pain, beyond direct parental experience. The development of clinical simulations, family testimonies, and the integration of humanistic models into pediatric care can help reduce this educational and attitudinal gap between those with and without children in their care.

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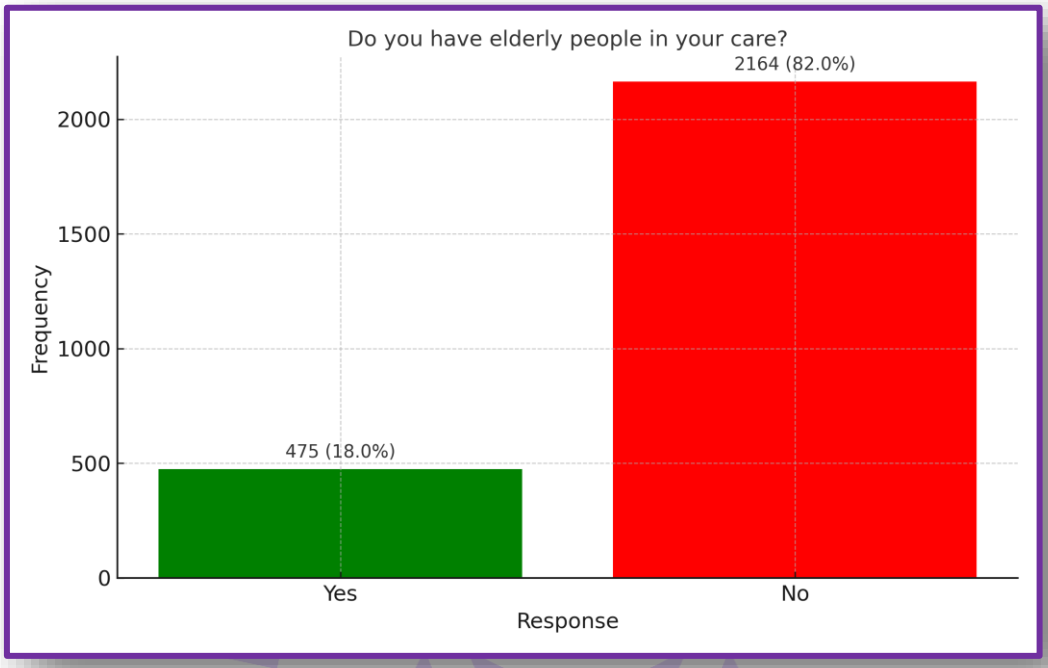
7.2. Q8-Do you have elderly people in your care?

Ask	Yes	No
Do you have elderly people in your care?	475 (18.0%)	2164 (82.0%)



A clear majority of respondents (82.0%) responded that they do not have older adults in their care, while only 18.0% indicated that they do. These data reflect that most respondents do not currently assume caregiving responsibilities for older adults, which may influence their availability, stress level, or experience in the caregiving role.

According to Pérez and Urrejola (2024), cohabitation intensifies the caregiver's subjective burden, influenced by coping strategies and the level of family support. This situation becomes more critical when the caregiver also plays a high-demand professional role, such as that of healthcare workers.

Likewise, in a longitudinal study, Viñas-Diez et al. (2017) demonstrated that cohabiting caregivers report a higher emotional and physical burden than non-cohabiting caregivers, with a tendency to increase over time. These findings reinforce the importance of identifying and addressing this 18 % who are in a potential position of double burden: work and domestic.

The 18th % of those who do care for older adults probably also face complex healthcare tasks in the home setting. The study by Gómez-Soler et al. (2024) found that the greatest burden fell primarily on women, mostly homemakers, who assumed much of the caregiving duties without sufficient support or

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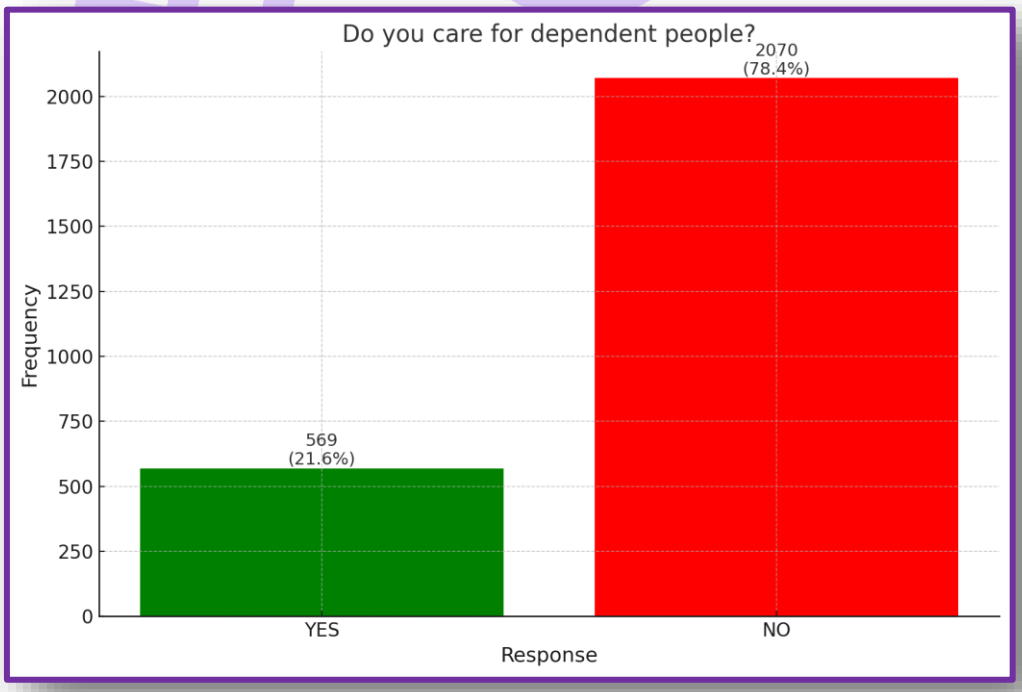
preparation. As the sick person loses autonomy in their daily activities, the caregiver's efforts become increasingly demanding, which ultimately significantly impacts their well-being and quality of life.

Similarly, Halperin et al. (2022) highlight that staff's family experiences influence their relationship with patients and their families, suggesting that the role of the home caregiver may have implications for the quality of hospital care.

The results show that while the majority of participants do not currently care for elderly people, there is a significant group (18 %) who do so and, therefore, face double exposure to stress. This situation warrants institutional support actions and the development of occupational policies sensitive to the family environment of health workers. Furthermore, training and support are required for both the clinical and domestic roles of caregivers, especially if they will be providing care to newborns.

7.3. Q9-Do you have any dependents in your care?

Ask	Yes	No
Do you have dependents in your care?	569 (21.6%)	2070 (78.4%)



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The majority of participants (78.4%) indicated that they do not have dependents in their care, while 21.6% do assume this type of responsibility. This shows that the majority do not currently perform formal or continuous caregiving functions outside of their professional setting. This group, although a minority, faces a double silent burden: providing care at home and providing care in their professional work. This under-reported reality represents a constant emotional and physical risk, especially for women, who tend to take on more caregiving duties (Sanjuán-Quiles, A. et al., 2023).

According to recent research, many of these workers perform complex medical tasks at home without specific support or training, which increases stress, affects their mental health, and can even compromise their clinical performance (Howe et al., 2024). Furthermore, with less time for themselves, they often experience burnout and a lack of self-care.

Informal caregiving—although common—is not always institutionally recognized or valued, which contributes to its invisibility. This lack of recognition can intensify overload and emotional exhaustion. As Halperin et al. (2022) warn, the personal experience of caregiving can increase empathy for patients, but also exacerbate burnout.

Therefore, this dual role of healthcare personnel should be monitored as a psychosocial risk through occupational management. Studies such as that by Wagner & Brandt (2018) indicate that when a solid institutional network supports care, loneliness, overload, and depressive symptoms among caregivers are reduced.

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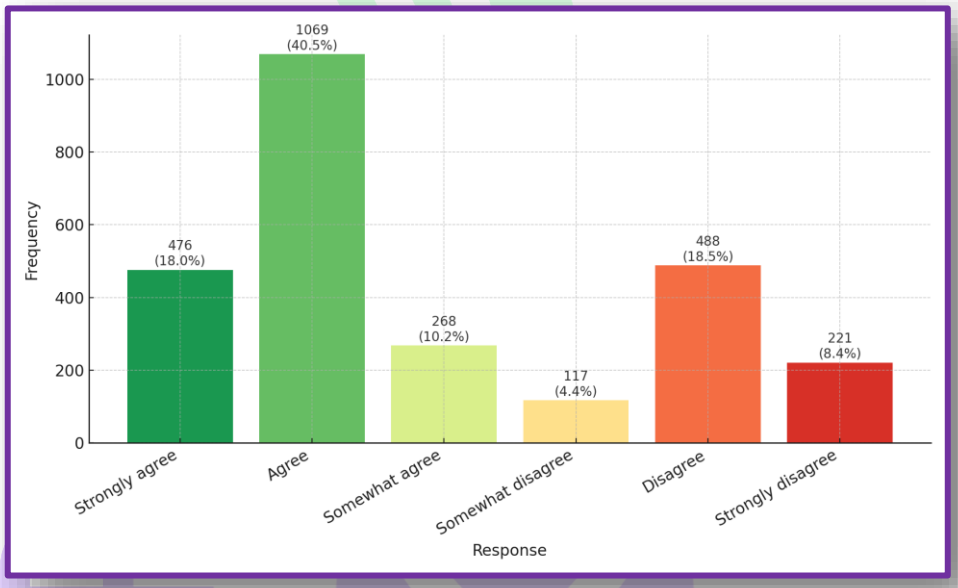
7.4. Q10-To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
To verify the statement that a child is in severe pain, it must be based on the observation of changes in vital signs.	476 (18.0%)	1069 (40.5%)	268 (10.2%)	117 (4.4%)	488 (18.5%)	221 (8.4%)



To verify the statement that a child is in severe pain, it must be based on observing changes in vital signs.

The majority of participants (68.7%) agreed that changes in vital signs are useful for identifying severe pain in children. However, 31.3% disagreed.

The finding that 68.7% of participants agreed that changes in vital signs are useful for identifying severe pain in children, while 31.3% disagreed, highlights a divided perception among healthcare providers regarding the use of these physiological parameters as clinical indicators of pain in childhood.

Vital signs such as heart rate, respiratory rate, blood pressure, and oxygen saturation often change in response to painful stimuli, particularly in young children who cannot verbalize their feelings. Several studies indicate that acute pain frequently manifests with tachycardia, tachypnea, and increased blood pressure as part of the autonomic response to stress (Haddad et al., 2022). In this sense, these signs are considered indirect markers of pain and can complement clinical assessment, especially in children with communication limitations.

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However, the fact that more than 30% of respondents do not trust these indicators may be due to the subjectivity of pain, as vital signs can also be altered by other causes, such as fear, fever, or anxiety. This highlights the need to strengthen the competencies of pediatric nursing staff in the combined use of standardized clinical tools, such as observational pain scales (FLACC, COMFORT, NIPS), along with the observation of physiological changes (Arbour & Gélinas, 2019; Nascimento et al., 2021).

From a humanization of care approach, it is essential that professionals recognize pain as a multidimensional experience that goes beyond physical signs. Empathy, communication with the child and family, and the use of non-pharmacological pain relief strategies such as skin-to-skin contact, music, games, or distraction are fundamental components of providing comprehensive, person-centered care (Fernández et al., 2020; WHO, 2021).

In summary, the result reflects a favorable, but still insufficient, level of knowledge regarding the use of physiological parameters as warning signs in the management of childhood pain. This poses the challenge of strengthening the training of healthcare personnel in the assessment of nonverbal pain, within an ethical, humanized, and evidence-based approach.

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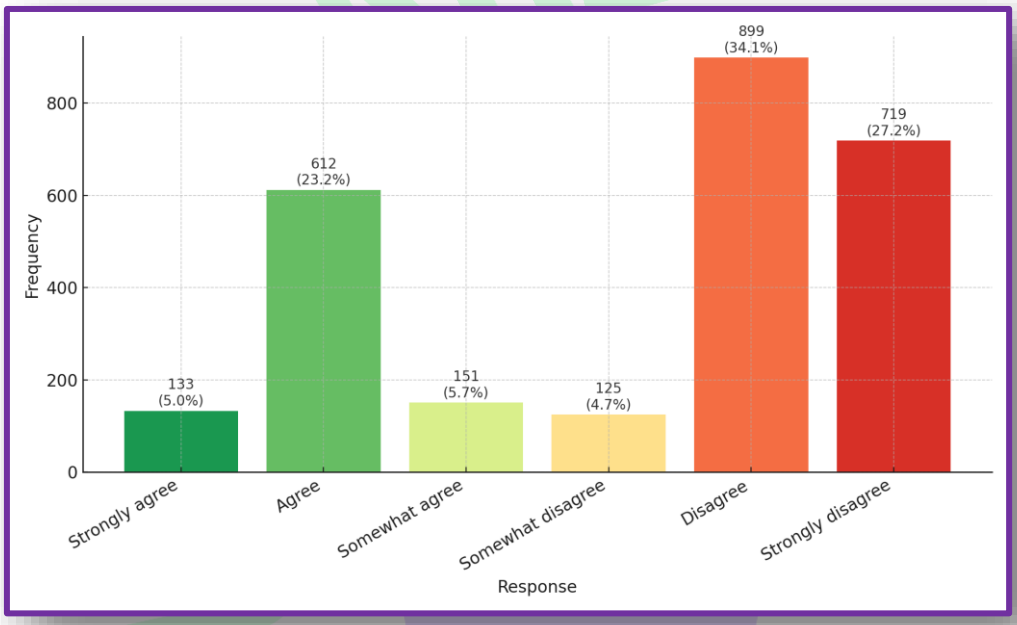
7.5. Q11-Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.	133 (5.0%)	612 (23.2%)	151 (5.7%)	125 (4.7%)	899 (34.1%)	719 (27.2%)



Although 66% of respondents reject this statement, a third still believe that children under two years of age have a reduced ability to feel or remember pain. This indicates that erroneous and potentially dangerous beliefs persist, which can lead to inadequate pain management in this vulnerable age group .

The graph shows the relationship between neurological development in children under 2 years of age and their perception of pain. It shows that, due to the immaturity of the central and peripheral nervous systems, there is a decrease in both pain sensitivity and the ability to retain painful memories. This graphic representation can include elements such as brain development curves, myelination levels, and physiological responses to painful stimuli compared to older children or adults.

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Children under 2 years of age are thought to have an altered perception of pain because their neurosensory pathways are still developing. This doesn't mean they don't feel pain, but rather that their way of processing it is different due to the immaturity of key brain structures, such as the somatosensory cortex and the limbic system. Furthermore, they have a reduced capacity to encode pain-related memories due to the immaturity of the hippocampus, which results in poorer memory for painful events.

According to Fitzgerald (2021), although nociceptive pathways are present from birth, their cortical connectivity and myelination progress significantly after birth, influencing how pain is perceived and remembered.

From a neurobiological perspective, children under 2 years of age do not have a fully developed spinothalamic pathway or the cerebral cortex associated with pain interpretation. Furthermore, the endogenous pain modulation system, which allows the regulation of the intensity of painful sensations, is deficient at this stage. This means that their behavior in the face of pain may be nonspecific, manifesting as crying, agitation, or physiological changes.

A study by Walker et al. (2020) confirms that the myelination of the nerve fibers responsible for transmitting pain (A-delta and C fibers) is incomplete in the first two years, which leads to slower and less precise responses to nociceptive stimuli.

Likewise, Anand et al. (2022) point out that the lack of maturation of the pain inhibitory system in newborns can cause them to experience pain more intensely, although they cannot express it verbally or remember it later.

The idea that young children “don't feel pain” or “forget it quickly” has been largely refuted by modern neuroscientific evidence. Although their nervous systems are still developing, responses to pain are present from very early stages, even in a 20-week-old fetus. However, the way these experiences are encoded in memory and expressed emotionally differs from that of adults.

As Hatfield et al. (2023) explain, inadequate intervention or underestimation of pain at this stage can have long-term adverse effects, such as hypersensitivity to pain in later stages, emotional disturbances or attachment disorders.

On the other hand, the approach to childhood pain should consider not only pharmacological intervention, but also non-pharmacological strategies such as skin-to-skin contact, non-nutritive sucking, and an affective environment, elements that have been shown to reduce the perception of pain in newborns and infants (Olsson & Lagercrantz, 2021).

Therefore, it is essential that healthcare professionals, especially pediatric nurses, understand that pain in children under 2 years of age is real, deserves attention, and should be managed with specific protocols based on evidence and respect for the child's dignity.
Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.

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The graph titled “Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences” visually represents the correlation between the degree of neurological maturation and pain perception in very young children. The horizontal axis (X) shows age, with particular emphasis on the range from 0 to 24 months. The vertical axis (Y) represents pain sensitivity and the ability to remember painful experiences. The curve in the graph suggests an upward progression: as age progresses and the development of the nervous system is consolidated, pain sensitivity and memory of these events increase.

This graph suggests that in the first two years of life, children have decreased pain sensitivity and a poor ability to recall painful experiences due to the immaturity of key neurological structures. Although nerve endings are present from the early stages of fetal development, the myelination of neural pathways and the consolidation of cortical circuits are still developing.

According to Fitzgerald (2021), although cutaneous nociceptors are present from the second trimester of gestation, cortical synaptic connectivity is strengthened after birth, initially limiting the conscious perception of pain.

From a neurophysiological perspective, children under 2 years of age have an immature nervous system that directly influences their experience of pain. Ascending nociceptive pathways (such as the spinothalamic pathway) are present, but the cerebral cortex—where the painful experience is interpreted—and the limbic system—where emotions are associated with the experience—are still maturing.

Likewise, structures such as the hippocampus, which is responsible for consolidating long-term memory, are also developing, which explains the reduced ability to retain painful experiences in the future.

Walker et al. (2020) point out that incomplete myelination of A-delta and C fibers, together with the low efficiency of descending inhibitory mechanisms, lead to attenuated, although not absent, responses to pain.

Furthermore, Anand and Hickey (2022) state that while newborns can show behavioral and physiological responses to pain (such as crying, changes in heart rate and saturation), conscious interpretation and emotional encoding are limited by neuroimmaturity.

For many years, it was mistakenly assumed that infants did not feel pain or that it was of little relevance due to their supposed lack of memory. However, current evidence has refuted this belief. Today, we know that infants feel pain and that it can have long-term consequences, both behaviorally and neurologically, although their way of perceiving, expressing, and remembering it differs from that of adults.

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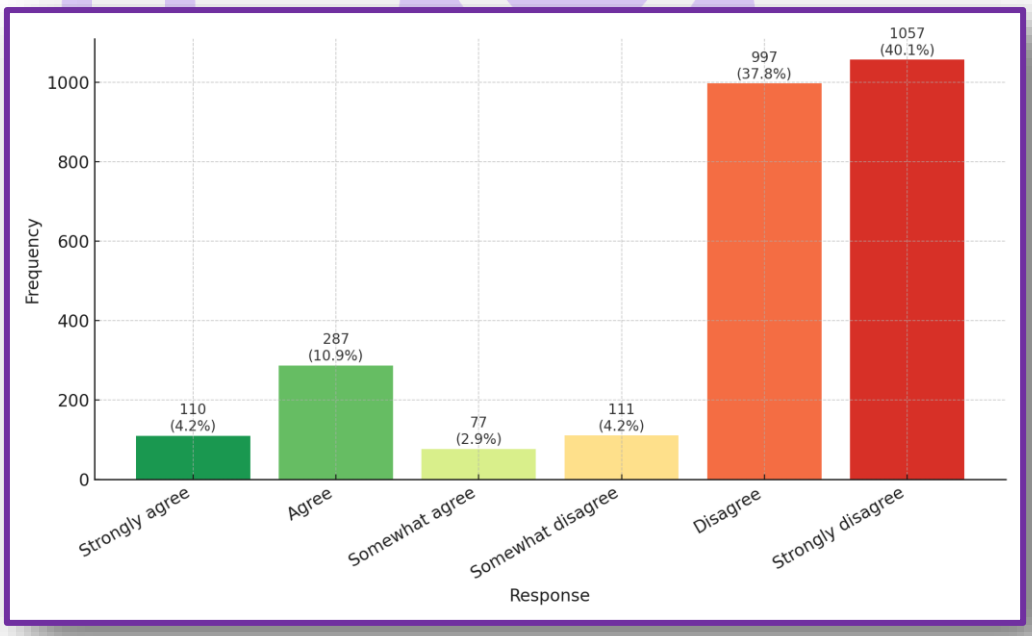
Recent studies have shown that repeated exposure to untreated pain in the early stages can sensitize nociceptive pathways, increasing the risk of chronic pain or affective disorders in later life (Hatfield et al., 2023).

On the other hand, Olsson & Lagercrantz (2021) highlight that empathic intervention and the use of non-pharmacological strategies such as skin-to-skin contact, breastfeeding, and emotional support significantly reduce pain responses in infants.

In this context, healthcare professionals, especially those working in neonatal and pediatric care, must value childhood pain as a real experience, avoid underestimating it, and apply comprehensive and humane approaches to its treatment. Raising awareness and training healthcare personnel on this topic is key to ensuring safe, ethical, and high-quality care in the first years of life.

7.6. Q12-Similar stimuli in different children produce the same intensity of pain.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Similar stimuli in different children produce the same intensity of pain.	110 (4.2%)	287 (10.9%)	77 (2.9%)	111 (4.2%)	997 (37.8%)	1057 (40.1%)



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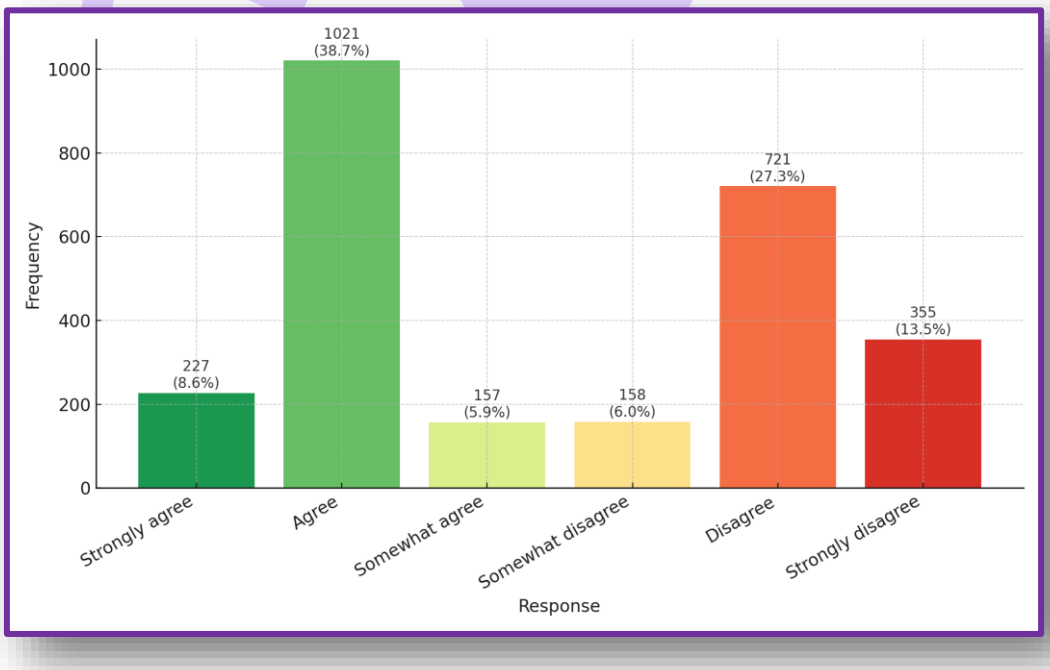
Regarding Q12, which addresses the statement "similar stimuli produce the same intensity of pain in different children," the vast majority of respondents disagreed, demonstrating a good level of understanding that pain is a subjective experience that varies according to individual factors. This is a positive indicator of the personalized approach needed in pain management for children.

This indicates that the statement was rejected by the majority of respondents. This high level of disagreement is consistent with current scientific evidence indicating that pain depends not only on the intensity of the physical stimulus but also on individual stimuli, reflecting a more modern and empathetic understanding of childhood pain.

7.7. Q13-Children under 6 months of age cannot tolerate opioids for pain relief.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Children under 6 months of age cannot tolerate opioids for pain relief.	227 (8.6%)	1021 (38.7%)	157 (5.9%)	158 (6.0%)	721 (27.3%)	355 (13.5%)



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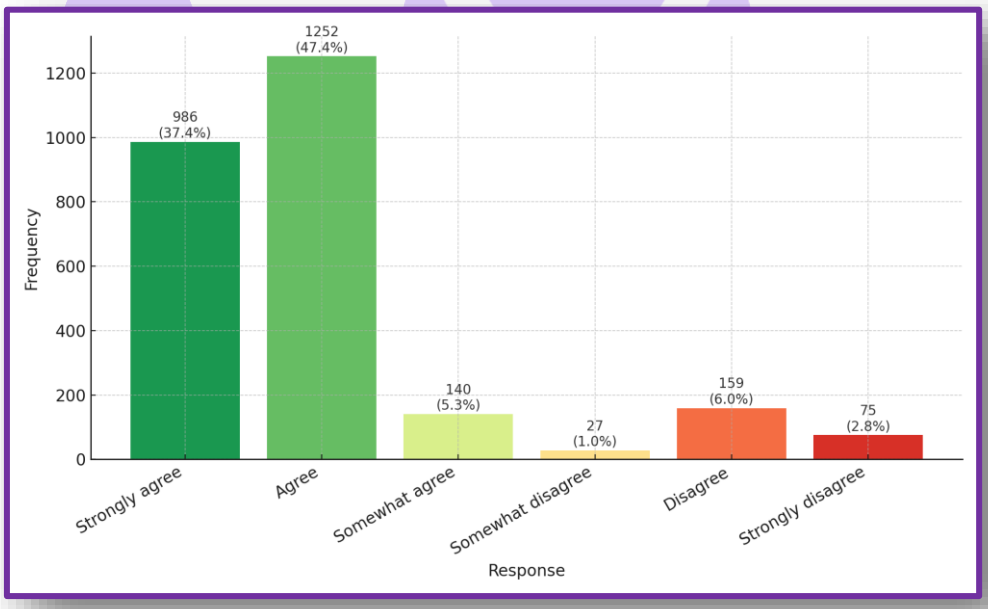
The results for question Q13, which states that “children under 6 months of age cannot tolerate opioids for pain relief,” reflect a heterogeneous distribution of responses, with 38.7% of respondents “agreeing” with the statement, while 27.3% “disagreeing.” The remaining 8.6% “strongly agree,” 5.9% “somewhat agree,” 6% “somewhat disagree,” and 13.5% “strongly disagree.”

Respondents' opinions are quite divided across the various options, leading to no clear consensus: approximately 53% believe this statement is true or partially true. This demonstrates a lack of information on the safety of opioid use in newborns and infants, which could lead to insufficient pain treatment at this stage.

7.8. Q14-After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.	986 (37.4%)	1252 (47.4%)	140 (5.3%)	27 (1.0%)	159 (6.0%)	75 (2.8%)



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The results indicate that 90.1% of participants agreed with the individualization of treatment after the initial dose, while only 9.8% disagreed to varying degrees.

In this regard, the following studies were found to contrast the results found. Sansone et al. (2023) found that, currently in all pediatric settings, an adequate assessment is the first step for an appropriate clinical approach to pain, especially in pediatric emergencies; therefore, more and more age-related tools have been validated. Currently, there is a wide range of analgesics available for pain management, both acetaminophen and NSAIDs are often used as first-line treatment for mild to moderate pain. On the other hand, opioids remain the cornerstone of acute, postoperative, and chronic pain treatment in the pediatric population, with intravenous opioids being the first option in emergencies. Intranasal fentanyl, which acts rapidly within 10 minutes of administration, is indicated for acute pain management for procedural analgesia. They conclude that further research is needed to improve the safety profile of key analgesics in overdose or poisoning in children, in order to reduce the risks of hepatotoxicity, gastrointestinal bleeding, and kidney injury.

On the other hand, in the study conducted by Rastogi et al., (2023), regarding pharmacological treatments for pediatric headache, as well as non-pharmacological treatments. They found in the review of recent findings in pediatric migraine the use of onabotulinumtoxinA, calcitonin gene-related peptide antagonists, interventional procedures, and devices for the treatment of pediatric headache. Pharmacological and non-pharmacological approaches to migraine prevention and treatment show promising safety and efficacy data. These treatments should be incorporated into a multimodal approach to the management of pediatric migraine. Ongoing, prospective, randomized studies are needed to further evaluate these new migraine treatments in the pediatric setting.
On the other hand, in the study conducted by Mishra et al. (2021), they found that the primary outcome was the assessment of pain-related symptoms and the best strategies for their management. This research revealed that a multidisciplinary approach should be used, starting with non-pharmacological techniques such as drinking plenty of water, eliminating triggers such as lack of sleep, specific foods, and psychotherapy that includes distraction, comfort, and cognitive-behavioral strategies. Pharmacological approaches such as paracetamol, NSAIDs, antispasmodics, among others, can be used if non-pharmacological therapy is insufficient. According to current evidence, paracetamol and ibuprofen can be safely administered for pain management in children with COVID-19. Undertreated pain contributes significantly to increased morbidity and poor prognosis. Integrating evidence-based non-pharmacological therapies into multidisciplinary pain management will contribute to better functioning, earlier recovery, and better quality of care for pediatric patients with COVID-19.

Similarly, Ringsten et al. (2023) report uncertainty about the efficacy of diclofenac compared with placebo, active comparators, or different routes of administration for postoperative pain management in children. However, in the comparison of diclofenac with opioids, diclofenac probably produces less nausea

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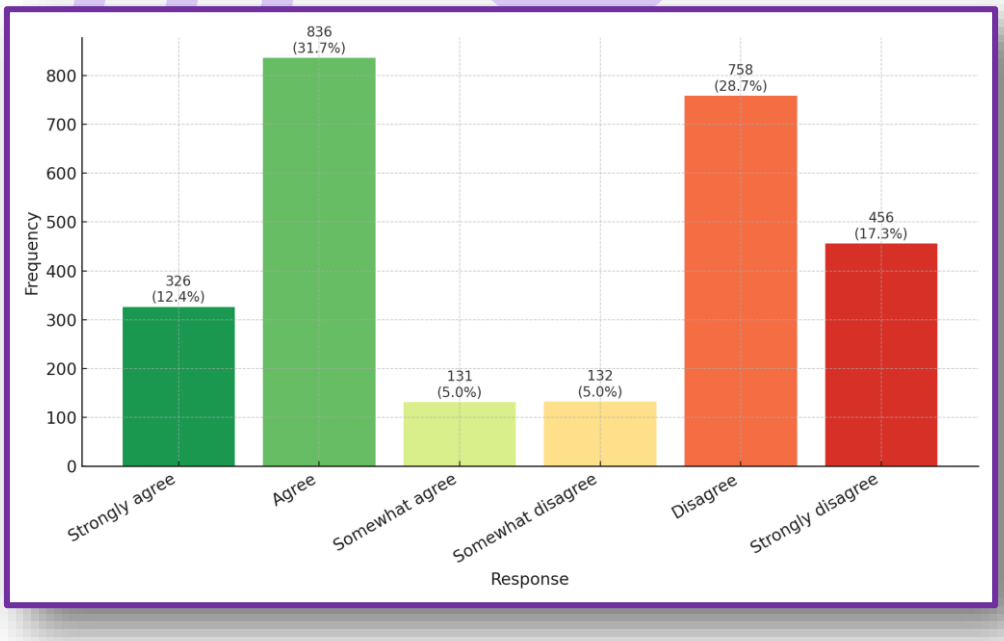
and vomiting compared with opioids, but more bleeding events. For healthcare professionals managing postoperative pain, diclofenac is a cyclooxygenase (COX) inhibitor option, alongside other pharmacological and non-pharmacological approaches. Healthcare professionals should weigh the benefits and risks based on what is known about their respective pharmacological effects, rather than known efficacy. For surgical procedures where bleeding or nausea and vomiting are a postoperative concern, the risks of adverse events when using opioids or diclofenac for pain management should be considered.

7.9. Q15-It is advisable to use non-pharmacological pain interventions independently, rather than in combination with pain medications.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Non-pharmacological pain interventions are recommended alone rather than in combination with pain medications.	326 (12.4%)	836 (31.7%)	131 (5.0%)	132 (5.0%)	758 (28.7%)	456 (17.3%)



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31.7% agree, while 51% disagree. This suggests confusion about how non-pharmacological interventions should be integrated. Although they should not replace medications in all cases, they are effective as a complement and in some mild cases.

In this regard, the following research was found that allows us to contrast the results found: Suleiman et al., (2022) in their research concludes that game-based interventions alleviate preoperative anxiety during anesthetic induction in children. This innovative and enjoyable approach may be useful in the care of pediatric surgical patients. In children, preoperative management is a complex task for healthcare professionals, and game-based strategies could improve outcomes, improving patients' emotional health and accelerating postoperative recovery. The incorporation of distracting game - based procedures into the preoperative clinical workflow should be considered to optimize medical care.

Likewise, Wang et al. (2023) found the following results: that slow and deep breathing and regular Hey-Hu breathing techniques were effective for pain management in pediatric cancer patients. The Active Breathing Cycle technique and five-minute conscious breathing had no statistically significant effects on pain relief. They conclude that breathing exercises may be a promising strategy for pain relief in cancer survivors. However, more rigorous studies are needed to establish the evidence.

On the other hand, Guillari et al. (2024) report the following results that indicate the possible application of various non-pharmacological techniques, highlighting distraction methods. These techniques include activities such as playing cards, watching cartoons, using virtual reality, and playing video games. They conclude that procedural pain in children represents a significant challenge in treatment plans. The literature offers various approaches, including non-pharmacological methods, to control this problem. Prioritizing the management of procedural pain is essential both at the clinical and organizational levels to improve the quality of pediatric care.

Similarly, Sansone et al. (2023) found that in children, needle procedures such as venipuncture or intravenous cannulation are associated with anxiety and distress, which are often reported as the worst experience of the day for hospital admission. If not managed appropriately, they are a major factor in increasing pain perception during future procedures. Non-pharmacological measures have been reported to reduce pain and anxiety caused by invasive procedures such as venipuncture in children. They conclude that a non-pharmacological approach to pain includes psychological, behavioral, and physical interventions used to complement pharmacological treatment and consist of physical comfort measures and distraction activities.

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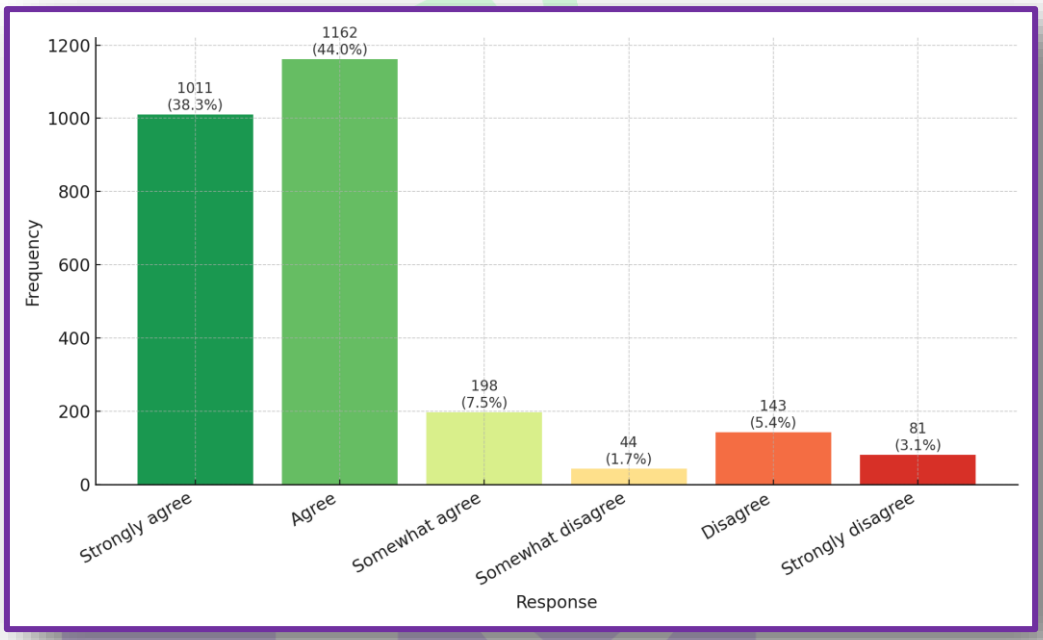
7.10. Q16-Childhood pain is a personal experience influenced by biological, psychological and social factors.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Childhood pain is a personal experience influenced by biological, psychological and social factors.	1011 (38.3%)	1162 (44.0%)	198 (7.5%)	44 (1.7%)	143 (5.4%)	81 (3.1%)



The majority of participants (89.8%) agreed with this statement to varying degrees, with 44% agreeing and 38.3% strongly agreeing. Only 10.2% disagreed to some extent.

In this regard, the following investigations were found that allow contrasting the results found: Suleman et al., (2024) found that the combined intervention TICK-B (coloring book) and TKTX cream (topical anesthetic) was the most effective in reducing both pain intensity (mean score 2.80 vs. 7.24 in the control, $p < 0.001$) and fear levels (mean score 0.93 vs. 2.83 in the control, $p < 0.001$) during and after venipuncture procedures, compared to individual interventions and the control. They conclude that the combined intervention of TICK-B distraction and TKTX topical anesthetic cream was the most effective in reducing pain intensity and fear during and after venipuncture in children, providing a practical strategy for healthcare providers to optimize the management of the needle procedure.

Similarly, Checa-Peñalver et al. (2024) report that non-pharmacological therapies represent valuable alternatives or complement traditional pain

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management, reducing dependence on medications such as opioids, which carry risks of significant side effects. Interventions such as cognitive behavioral therapy (CBT), music therapy, and hypnotherapy not only help alleviate pain intensity but also promote improved quality of life, emotional well-being, and social participation, potentially mitigating the risk of long-term psychological problems such as anxiety and depression. The accessibility and ease of integration of many of these interventions, especially technology-based options such as mobile apps, contribute to high patient adherence and satisfaction, offering interactive and engaging ways for children to manage their pain. Furthermore, the involvement of family members in the treatment process, particularly through approaches such as CBT, improves treatment outcomes and reduces caregiver stress, reinforcing a family-centered model of care. The adaptability of technology-based interventions also allows for broad implementation in diverse settings, such as hospitals, clinics, and home environments, making these options accessible even in areas with limited specialized resources. Finally, the ability to customize these treatments to each child's unique psychological and pain profiles highlights their value in providing personalized care, ultimately promoting better coping strategies and improving functionality.

On the other hand, Comparcini et al. (2023) report that invasive and painful procedures, which often induce anxiety, are necessary components of pediatric cancer treatment, and proper management of pain and anxiety during these treatments is critical. In this context, it is widely recognized that a holistic approach, including pharmacological and non-pharmacological modalities, such as distraction techniques, should be the standard of care. Recent evidence suggests the use of virtual reality (VR) as an effective non-pharmacological intervention in pediatrics. Regarding the main outcomes measured, pain was considered in five studies, anxiety in three, and the remaining five studies analyzed the efficacy of VR in reducing pain and anxiety. They conclude that the findings suggest a beneficial effect of VR during painful vascular access procedures. Limited data are available on anxiety reduction in children with cancer.

Similarly, Oliver et al. (2022) found that a multimodal approach to outpatient pain management is needed to reduce postoperative pain. These include non-pharmacological techniques, multimodal medications, and neuraxial and peripheral nerve blocks. Postoperative pain management in pediatric outpatient surgery patients remains suboptimal in most centers due to the paucity of an evidence-based approach to postoperative pain control. Outpatient pediatric pain management requires a multifaceted approach to address this deficiency.

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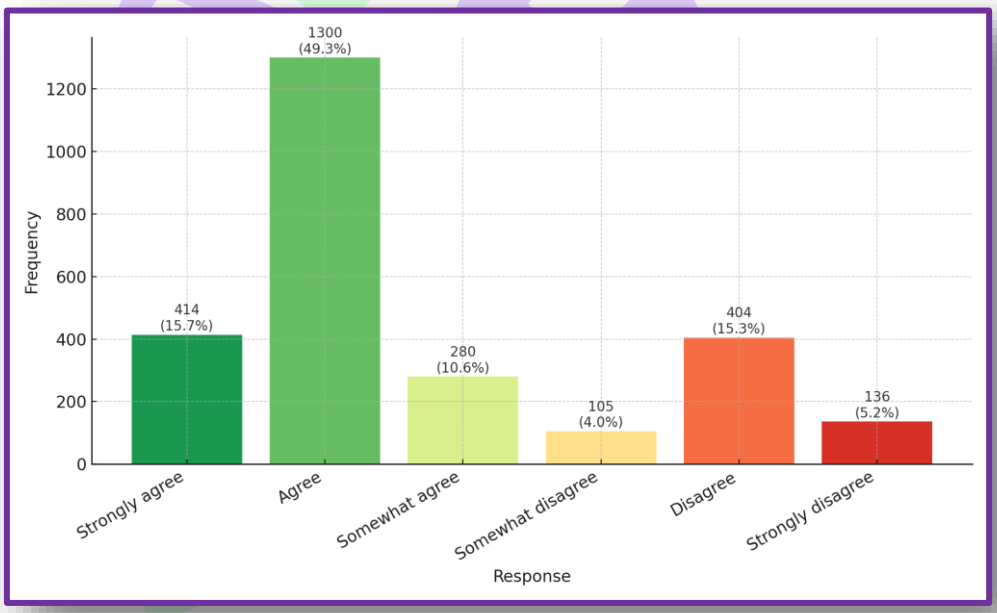
7.11. Q17-Nonpharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and nonnutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for controlling mild to moderate pain, but are rarely useful for more severe pain.	414 (15.7%)	1300 (49.3%)	280 (10.6%)	105 (4.0%)	404 (15.3%)	136 (5.2%)



Non-pharmacological interventions (NPIs) are effective for mild to moderate pain, but of little use for severe pain. 75.6% of respondents fully or partially agree with this perspective, while 24.4% reject it.

In this regard, the following investigations were found that allow to contrast the results found. Nieto et al., (2019), found the following results: The study included 387 infants. The mean scores on the LLANTO scale at 2 and 6 months were significantly lower in breastfed infants compared to infants treated with NNS (P

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= 0.025 and P < 0.001, respectively), or infants who received D50W (P = 0.025 and P = 0.001), and the difference was not statistically significant at 4 months (P = 0.21 and P = 0.27). There were no significant differences between infants treated with NNS and D50W at 2, 4 and 6 months (P = 0.66, P = 0.93 and P = 0.45, respectively). Crying duration was significantly shorter at 6 months in breastfed infants compared with infants treated with NNS or D50W (P = 0.013 and P = 0.017). No breastfed children (n = 129) experienced side effects. The following conclusions were drawn: In term infants with adequate weight for gestational age, breastfeeding reduces pain after one or two vaccines. When three vaccines are administered, the reduction is minimal. Administration of 50% skimmed milk powder had no additional analgesic effect in breastfed infants compared with administration of breast milk in arms along with administration of nonimmune milk during vaccination. Breastfeeding during vaccination is not associated with side effects.

Likewise, in the study conducted by Pandita et al., (2018), they reported the following results: The neonatal pain scale (NIPS) scores at one and five minutes after vaccination and the duration of crying were significantly lower in the kangaroo mother care (KMC) group. They concluded that KMC is effective in reducing vaccination-associated pain in young infants.

Similarly, Illai et al. (2023) reported the following results: Overall, non-nutritive sucking, facilitated swaddling, and swaddling can reduce pain behaviors in preterm infants. Non-nutritive sucking can also reduce pain behaviors in term infants. No intervention based on substantial evidence showed promising results in reducing pain behaviors in older infants. Most analyses were based on very low- or low-certainty evidence, and none on high-certainty evidence. Therefore, the lack of confidence in the evidence requires further research before a definitive conclusion can be made.

On the other hand, Vitali & De Angelis (2020) found the following evidence: Babies suffer painful stings, such as intradermal and intramuscular injections, during vaccination. Clinical trials have shown that analgesic methods reduce pain in both infants and children. A review of primary and secondary literature was conducted in the Medline (PubMed) database. The bibliographic research focused on the critical reading of studies from the last ten years. Eight articles were found, including seven randomized clinical trials and one systematic review. All registered studies report a reduction in the average pain value, measured using validated rating scales, and the average duration of crying during and after vaccination in infants. However, a statistically significant improvement in physiological parameters has not been demonstrated. They concluded that it is desirable for the literature to produce more studies related to changes in vital parameters during breastfeeding that allow a clear comparison between clinical trials.

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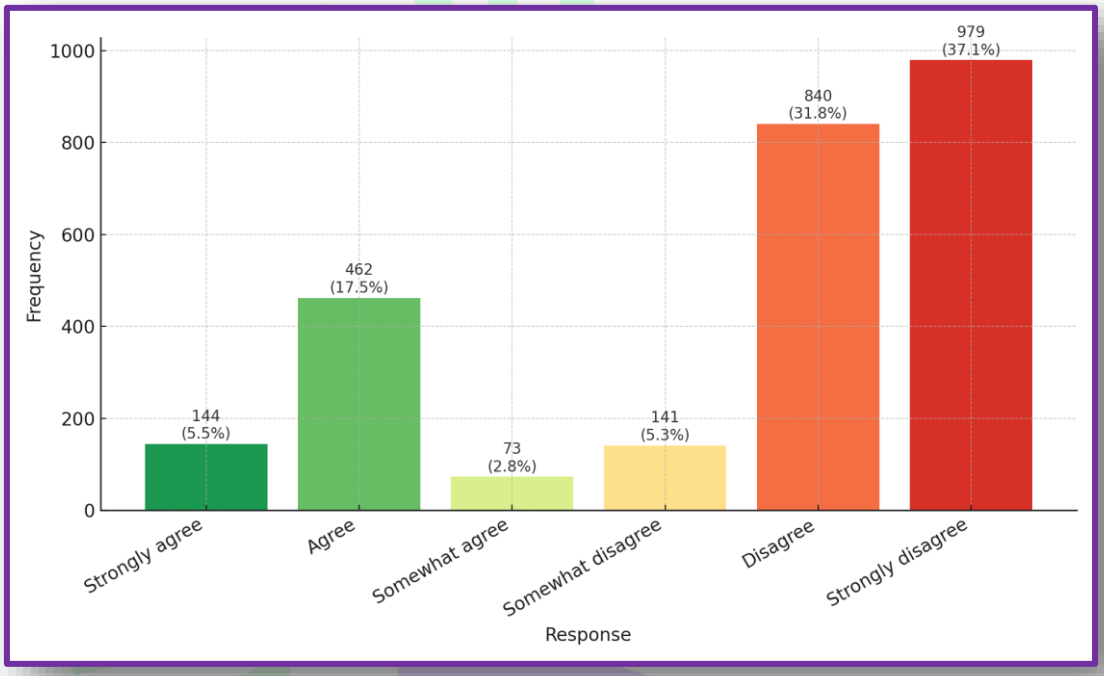
7.12. Q 18-During painful procedures, parents should not be present.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
During painful procedures, parents should not be present.	144 (5.5%)	462 (17.5%)	73 (2.8%)	141 (5.3%)	840 (31.8%)	979 (37.1%)



68.9% of participants disagreed with this statement, reflecting a strong inclination toward the **family-centered care model** , which recognizes the value of **parental presence** during painful procedures in children. This approach believes that parental presence can: decrease the child's anxiety, increase cooperation during the procedure, and promote the emotional well-being of the pediatric patient.

These results are similar to the study conducted by Franck, Greenber and Stevens in 2020, which was a narrative review and analysis of scientific evidence on pain assessment and management in children, including data from observational studies, clinical trials, and previous systematic reviews. Among the main results: the importance of pain assessment; the presence of parents reduces pain perception and distress in children during medical procedures; parents can identify pain signs undetected by medical personnel (e.g., subtle changes in facial

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expression or mobility); non-pharmacological interventions such as physical contact (hugging, skin-to-skin contact), breastfeeding, and distraction significantly reduce pain in minor procedures (e.g., vaccinations, blood draws); prior preparation of parents improves their ability to support the child. Among the conclusions, systematic pain assessment in children should be standard in all clinical settings; parents are key allies: their active participation improves outcomes and reduces trauma associated with procedures; protocols that integrate pharmacological and non-pharmacological approaches, with family participation, are needed.

This study supports the findings (68.9% disagreement with excluding fathers), highlighting that their presence is not only beneficial, but necessary for ethical and effective management of pediatric pain.

Likewise, O'Malley et al in 2019, in their research they aimed to review clinical policies and practices based on evidence, the main results were the impact of family presence, since children show 30-40% less anxiety when parents are present during painful procedures (eg sutures, lumbar punctures); better cooperation, there is a 25% decrease in the need for physical restraint when parents actively participate, likewise 85% of parents report greater satisfaction with care when they are allowed to be present, the conclusions of the study show that family-centered care (PFCC) in pediatric emergencies is safe, feasible and improves clinical and emotional outcomes.

The results of O'Malley et al. (2019) reinforce the findings as the majority of respondents (68.9%) reject excluding fathers, aligning with the evidence that their presence is beneficial both clinically and emotionally.

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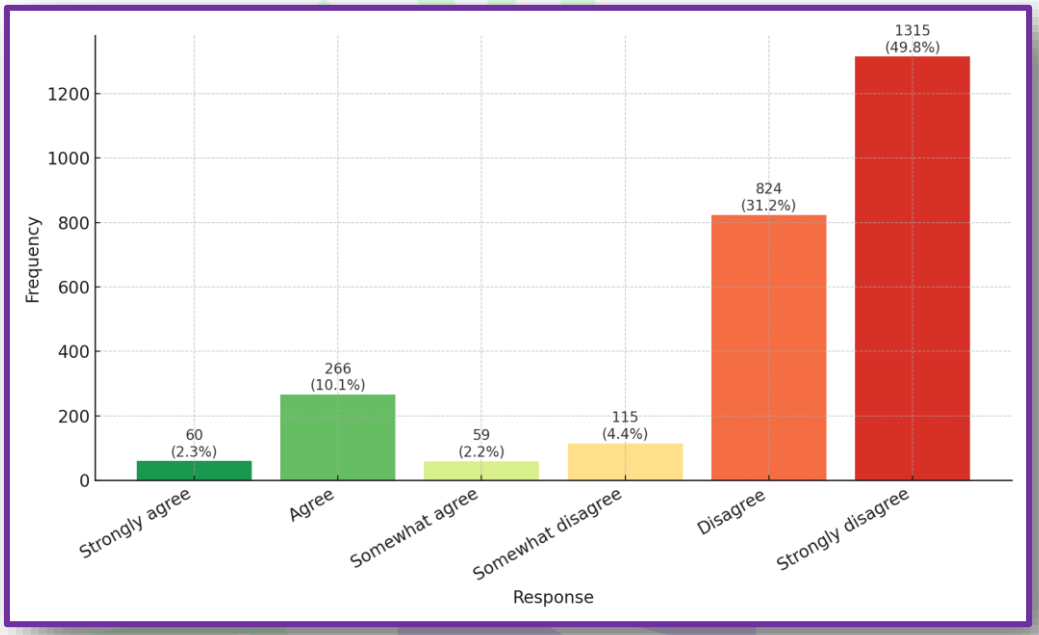
7.13. Q19-Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.	60 (2.3%)	266 (10.1%)	59 (2.2%)	115 (4.4%)	824 (31.2%)	1315 (49.8%)



The findings for question Q19, “Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief,” reflect significant disagreement among respondents.

49.8% of respondents "strongly disagreed" and 31.2% "disagreed" with the statement. 10.1% "agreed" with the statement. This reflects the growing awareness of the physical and emotional impact of untreated pain in children, as well as the importance of a more compassionate and humane approach to pediatric pain care.

This reflects the majority's opposition to the idea of postponing pain treatment in childhood, aligning the results with promoting children's right to receive pain relief without delay or conditions and considering it unacceptable that minors are encouraged to endure pain unnecessarily.

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In Boston, Hauer and Jones (2021) aimed to evaluate the ethical principles and practical barriers to pediatric pain management. Their findings showed that 95% of practitioners considered delaying pain relief unacceptable. Untreated pain in children is associated with increased post-traumatic stress (OR: 2.3; 95% CI: 1.8-3.0). The identified barriers included cultural myths ("pain builds strength") and a lack of standardized protocols. In conclusion, rapid pain relief is a fundamental right; clinical guidelines that prioritize early interventions are needed.

In California, Roessler et al. (2024) aimed to evaluate how pain is recorded, diagnosed, and treated in hospitalized children, including their experiences and those of their caregivers. The results show that 74.5 % of patients had at least a moderate to severe pain score, only 65.4 % received analgesic treatment (pharmacological and/or nonpharmacological). Significant gaps were also identified in documentation and the use of relief strategies, especially during procedures. The authors concluded that partial treatments and a lack of comprehensive interventions were evident. The authors recommended implementing multimodal treatments and nonpharmacological measures during procedures to improve the experience of hospitalized children.

In Italy, Silva et. al. (2023) in their research aimed to carry out a narrative review of studies published between 2015 and 2023 on the management of acute pain in children in emergency services, within the results it was found that there is a high prevalence of acute pain in children (15 % in primary care; many cases of moderate to severe pain); frequent undertreatment or delayed treatment of pain; and guidelines indicate that relief should be prompt and based on a multimodal approach (pharmacological + nonpharmacological), highlighting the urgency of administering analgesia immediately rather than conditionally, with standardized protocols that include integrated actions for acute pain in children.

In Brazil, Lima et al. (2018) conducted a study to understand children's satisfaction and dissatisfaction with pain management in pediatric emergency departments. The findings were organized into two themes: Theme 1 - Child-perceived satisfaction with pain management, comprised of three subthemes: Priority care and rapid pain relief, Basic needs met, and Team reception; and Theme 2 - Child-perceived dissatisfaction with pain management, comprised of three subthemes: Painful procedures, Uncomfortable environment, and Delay in pain relief. It was observed that children's satisfaction with pain management goes beyond pain relief or priority care; it also encompassed the pediatric emergency department environment and team reception. It is recommended that care be directed toward the uniqueness of children, that is, care built by understanding the experience from a child's perspective.

Our graph shows that 85.4 % of respondents reject the idea of encouraging pain management. These studies confirm this position: undertreatment and delay in the administration of acute analgesics are documented (Roessler De Angulo). Providing immediate and multimodal relief is recommended (Silva et al.). Rapid relief is key to the child's safety and satisfaction (Bea et al.).

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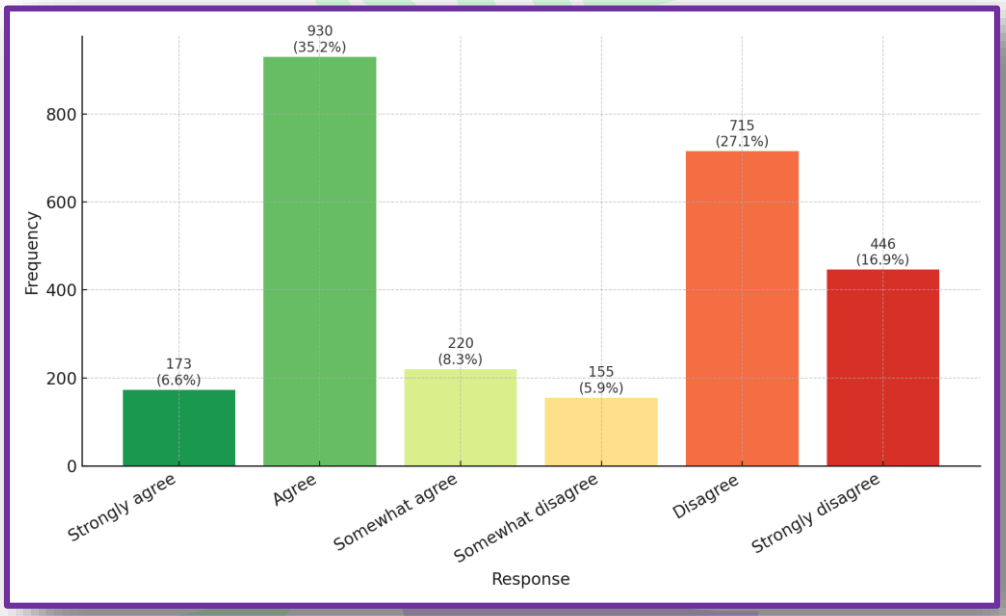
7.14. Q20-Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Giving children placebos (sterile water or saline, among others) is often a useful test to determine if the pain is real.	173 (6.6%)	930 (35.2%)	220 (8.3%)	155 (5.9%)	715 (27.1%)	446 (16.9%)



It is observed that approximately half of the participants (50.1%) agree to some degree with this practice. Similarly, almost the same proportion (49.9%) disagree, either mildly or strongly.

In Boston, Nurko et al. (2022) conducted a study to evaluate the efficacy of OLP for the treatment of children and adolescents with functional abdominal pain or irritable bowel syndrome. The primary outcome was the mean daily pain score during each intervention, measured on a 0- to 100-mm visual analog scale, with higher scores indicating greater pain. The number of rescue medications administered during each intervention served as a secondary objective measure; 16 [53.3%] with functional abdominal pain and 14 [46.7%] with irritable bowel syndrome completed the study. Mean (SD) pain scores were significantly lower during OLP treatment compared with the control period (39.9 [18.9] vs. 45.0 [14.7]; difference, 5.2; 95% CI, 0.2-10.1; P = .03). Patients took almost twice as

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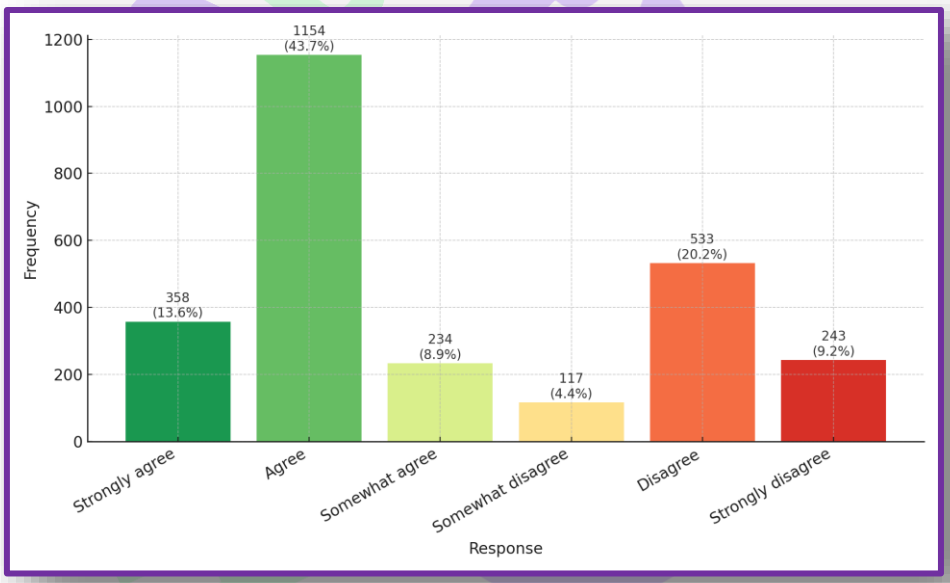
many hyoscyamine pills during the control period compared with the LPO period (mean [SD] number, 3.8 [5.1] pills vs 2.0 [3.0] pills; difference, 1.8 pills; 95% CI, 0.5-3.1 pills). They concluded that, during LPO, patients with functional abdominal pain or irritable bowel syndrome reported significantly less pain and took significantly fewer analgesics. Open-label placebo may be an effective treatment for children and adolescents with functional abdominal pain or irritable bowel syndrome.

7.15. Q21-Opioids for the treatment of acute pain can cause addiction in pediatric patients.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Opioids for the treatment of acute pain can cause addiction in pediatric patients.	358 (13.6%)	1154 (43.7%)	234 (8.9%)	117 (4.4%)	533 (20.2%)	243 (9.2%)



66.2% of participants agreed to some degree (13.6% strongly agreed, 8.9% somewhat agreed, and 43.7% agreed). On the other hand, 33.8% expressed some level of disagreement with this idea (20.2% disagreed, 4.4% somewhat disagreed, and 9.2% strongly disagreed).

These studies are similar to those of Olejnik et al. (2025), who concluded in a meta-analysis in JAMA Pediatrics that opioids are effective in treating acute pain in children, but NSAIDs show a better benefit-harm ratio, as they reduce pain without contributing to the need for rescue or causing significant adverse effects.

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An analysis of acute abdominal pain in pediatrics found that while opioids reduced pain, they also increased mild side effects without increasing the risk of serious complications such as perforation.

Matson et al. (2019) report that legitimate opioid exposure in adolescents is associated with a 33% increase in % risk of non-medical opioid use in early adulthood pmc.ncbi.nlm.nih.gov .

Hah (2016) indicates that up to 10 % of patients can develop addiction after medical exposure, and between 30 % and 80 % of addicts report that their first exposure was a prescription drug pmc.ncbi.nlm.nih.gov .
In a study of adolescents who received opioids for acute pain, 90 % showed two or more risk factors for use, and 35 % had five or more.
The use of opioids for the treatment of acute pain in pediatric patients is a topic that requires careful clinical evaluation. Although opioids are effective in relieving moderate to severe pain, they also carry significant risks, especially regarding the potential for addiction. The figure presented shows that a considerable portion of respondents (more than half) recognize this risk, stating that they "agree" or "strongly agree" with the statement that opioids can cause addiction in pediatric patients.

This result reflects an informed perception aligned with current scientific evidence. Several studies have documented that exposure to opioids at an early age, even under medical prescription, can increase the risk of misuse in later life, especially in adolescents, where biological and psychosocial factors converge to amplify this vulnerability. It is worrying, for example, that between 8 % and 12 % of patients receiving opioids for therapeutic purposes may develop problematic patterns of use if clear limits and preventive measures are not established.

At the same time, it cannot be ignored that opioids remain a valuable tool in clinical settings where acute pain cannot be effectively controlled with other analgesics. However, their use should be strictly limited to specific cases, with a short duration, doses adjusted for age and weight, and always under close monitoring. Furthermore, it is necessary to integrate family education strategies, identification of patient risk factors, and the design of post-treatment follow-up plans into clinical practice.

In this regard, non-opioid analgesics, such as NSAIDs or paracetamol, should be considered first-line pain management in pediatrics, reserving opioids for exceptional cases, such as major surgeries or severe trauma. This prioritization responds not only to clinical efficacy but also to the ethical commitment to minimizing future risks in a developing population.

In conclusion, the approach to acute pain in pediatrics must adequately balance effective pain relief with the prevention of long-term adverse consequences. The situation analyzed highlights a growing awareness of this clinical dilemma, which is encouraging, but also calls for strengthening the training of healthcare personnel and the implementation of clear policies regulating the use of opioids in pediatric settings.

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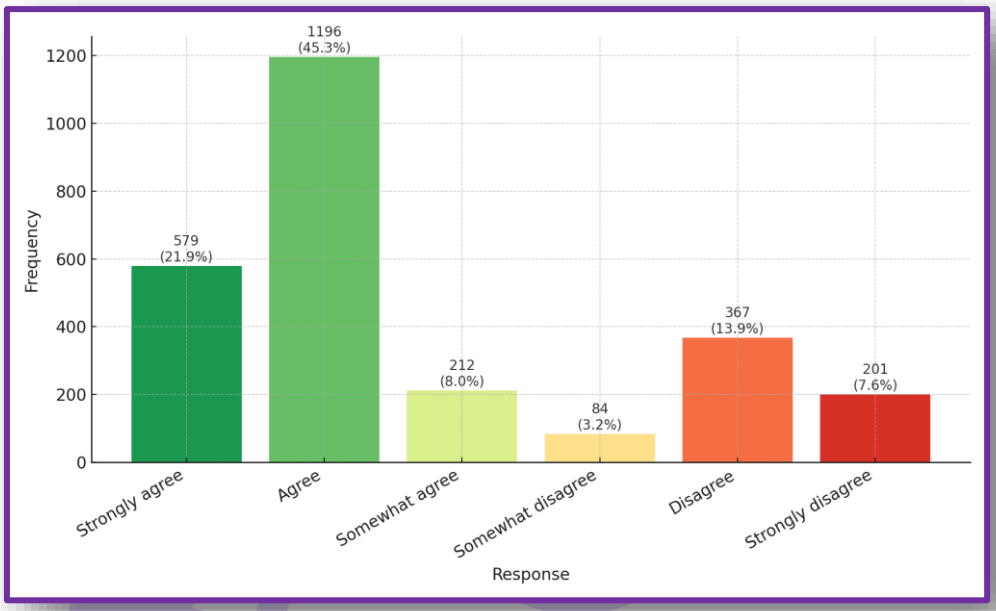
7.16. Q22-I know and apply pain assessment scales in children.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
I know and apply pain assessment scales in children.	579 (21.9%)	1196 (45.3%)	212 (8.0%)	84 (3.2%)	367 (13.9%)	201 (7.6%)



The majority of participants (1,196), representing 45.3%, stated that they agreed that they knew and used pain assessment scales in children; 21.8% strongly agreed, and 8.0% somewhat agreed. However, almost a quarter (24.7%) expressed some degree of disagreement.

The results are similar to those of Notejane et al. (2019), in their study on the implementation of scales, with public and private institutions in the metropolitan area of Bucaramanga and Floridablanca, using random surveys of health workers, to determine the use and application of pain assessment scales in neonatal units, concluded according to the bibliographic review, that although the staff knew the validated assessment scales for pain in the newborn, they are not fully used by the health professional and/or healthcare personnel in the care of the newborn.

Assessing pain intensity in children, especially those under 5 years of age or those with a cognitive disorder, is a challenge for families and healthcare providers. The use of scales is therefore a tool that contributes to a more objective assessment. The difficulty in verbally expressing themselves makes it more likely that their pain will go unrecognized by their caregivers and/or healthcare team, and therefore, untreated.

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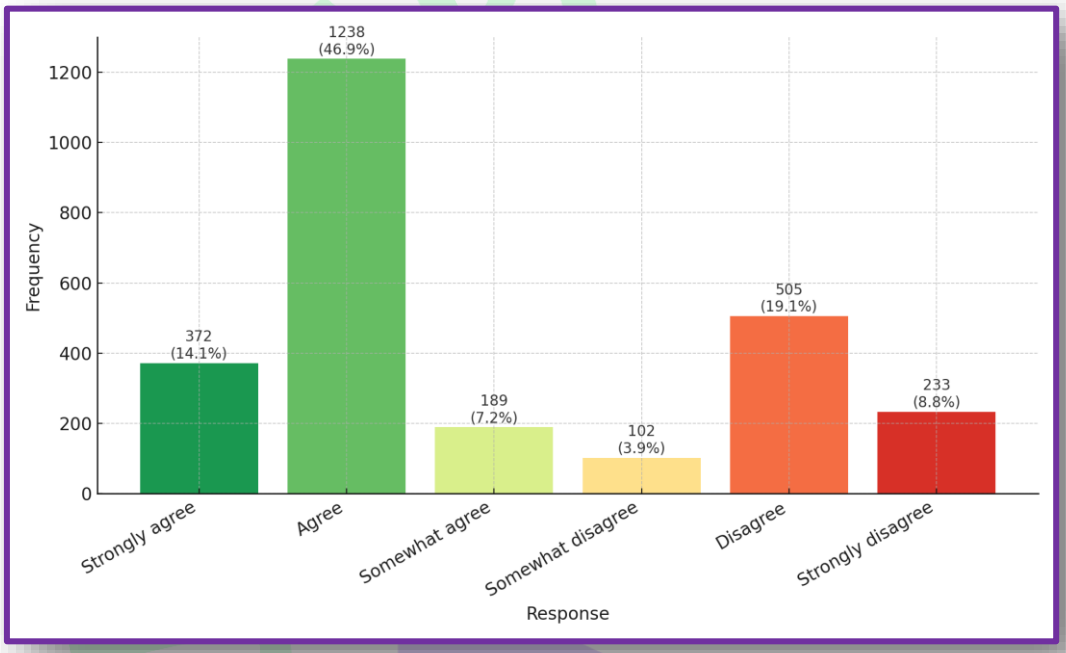
7.17. Q23-I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)	372 (14.1%)	1238 (46.9%)	189 (7.2%)	102 (3.9%)	505 (19.1%)	233 (8.8%)



The majority of participants (68.2%) stated they were familiar with and used the WHO linear scale of pain treatment levels for children. The percentage was 14.1% in complete agreement, 7.2% in partial agreement, and 46.9% in complete agreement. However, 31.8% expressed some degree of disagreement, indicating that a significant proportion did not use or were unfamiliar with this scale.

Over the years, various instruments have been designed for the assessment of pain in children; the WHO (2023) indicates that there is no single instrument for the assessment of pain, there are scales to measure pain in newborns and premature babies (PIPP-R), the FLACC scale evaluates the expression, leg movement, activity and crying of children from two months to seven years, very useful in cases of cognitive impairment, there are also CRIES scales, which evaluate postoperative pain, evaluating crying, saturation, vital signs and sleep characteristics. COMFORT is a validated instrument for children with mechanical ventilation, which evaluates sleep, calmness or agitation, crying,

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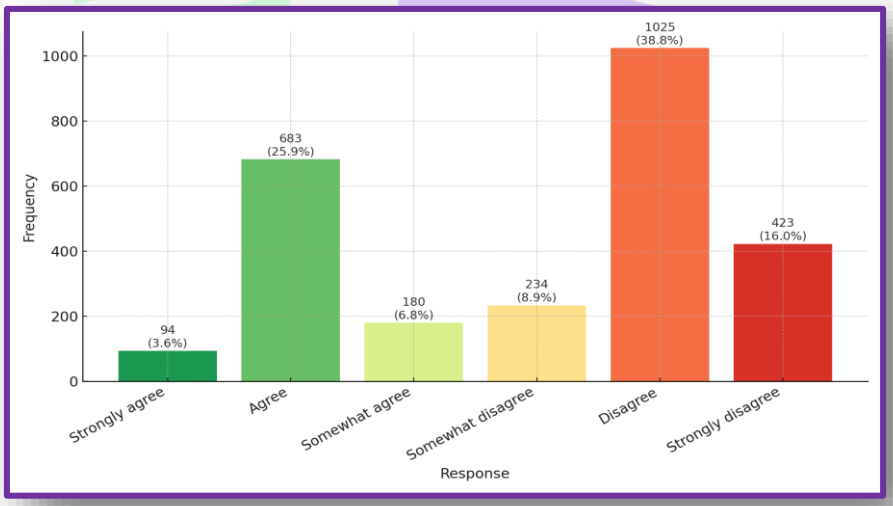
movement, muscle tone, facial expression and vital signs. For children over seven years of age, the numerical pain scale can be used, of which there are variants in which drawings of faces are integrated, referring to the level of pain.

The parents' experience is also significant. They go through the diagnostic process, which sometimes requires the evaluation of more than one health professional, to finally determine the health problem and what treatment options are available. This process generates anxiety and feelings of guilt and helplessness; the treatment process, dealing with the side effects of medication and the uncertainty of knowing if the children's health will be recovered; family coping, which in some cases unites and in others separates family members; and finally, the relationship with health personnel (doctors, nurses, psychologists, and social workers), which, according to the informants, should always be one of alertness and support (Cruz, 2020).

As can be seen, the instruments are diverse, but the key is that the healthcare personnel involved in infant care are properly trained to use them correctly and in a timely manner to assist any child in need. The painful experience not only translates into physical suffering, but also factors that affect the entire person. It is perceived through the eyes of each human being. This situation turns it into an enigma that resides in the culture and experience of each person.

7.18. Q24-Training on acute pain in children and its management is sufficient.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Training on acute pain in children and its management is sufficient.	94 (3.6%)	683 (25.9%)	180 (6.8%)	234 (8.9%)	1025 (38.8%)	423 (16.0%)



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Only 36.3% of respondents believe that training on acute pain in children and its management is sufficient (3.6% strongly agree, 6.8% somewhat agree, and 25.9% agree). In contrast, a clear majority of 63.7% express some degree of disagreement (38.8% disagree, 8.9% somewhat disagree, and 16.0% strongly disagree).

Notejane et al (2019) found that the overall level of knowledge of nursing professionals surveyed was acceptable, although a lack of knowledge of appropriate scales to assess pain in children was detected, especially in those who cannot express themselves verbally. The evaluation of pain intensity in children, especially those under 5 years of age or with some cognitive disorder, is a challenge for families and the health team. The application of scales is a tool that contributes to a more objective evaluation. The difficulty in expressing oneself verbally makes patients more likely to have their pain not identified by their caregivers and the health team, and therefore, not treated .

Pain in childhood is a frequent reason for consultation in all healthcare settings. It is a complex and multidimensional phenomenon with sensory, physiological, cognitive, affective, behavioral, and spiritual components, the assessment and management of which represents a public health issue. In pediatrics, pain is frequently underestimated and, therefore, undertreated, reflecting the urgent need for all healthcare professionals who care for children to have the necessary skills to diagnose and manage pain systematically and appropriately.

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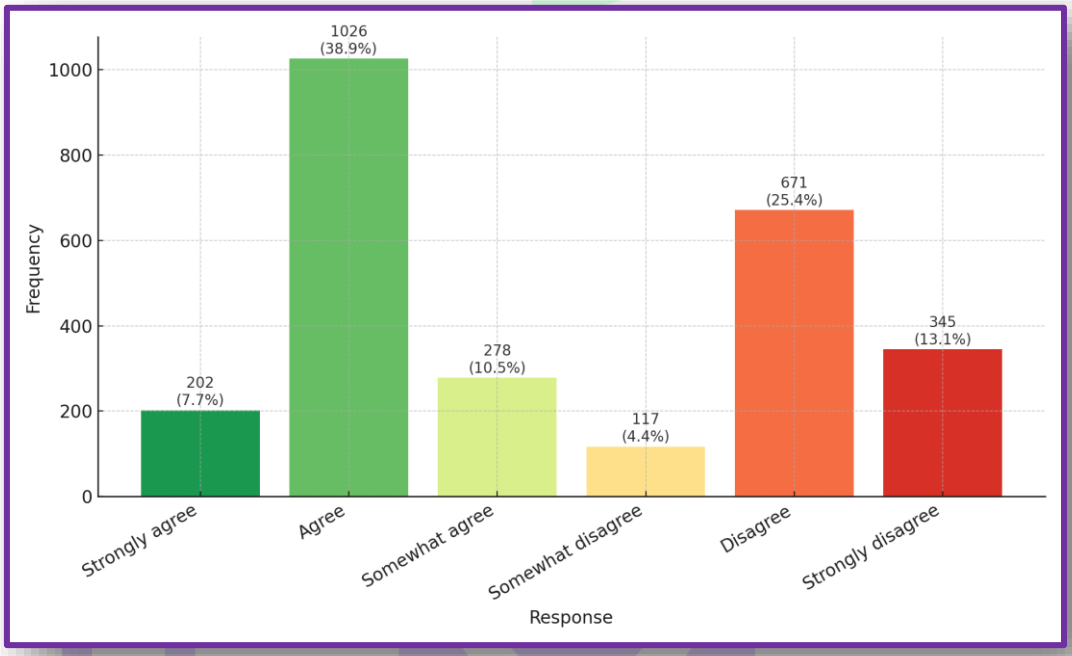
7.19. Q25-I can identify early signs of pain in newborns.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
I know how to identify early signs of pain in newborns.	202 (7.7%)	1026 (38.9%)	278 (10.5%)	117 (4.4%)	671 (25.4%)	345 (13.1%)



The results show that, of 2639 participants, 1026 (38.9%) stated that they agreed, followed by 671 (25.4%) who disagreed, 345 (12.07%) who strongly disagreed, 278 (10.5%) who somewhat agreed, 202 (7.65%) who strongly agreed, and 117 (4.42%) who somewhat disagreed. It is important to highlight that, of the total number of participants in the question asked, 1208 (64.8%) expressed some level of disagreement on a topic as relevant as the identification of early signs of pain in newborns.

Pain is a very prevalent symptom in hospitalized patients; however, it is frequently underestimated, particularly in newborns. Evidence demonstrates that newborns exposed to pain experience a short-term state of catabolism (increased heart rate, respiratory rate, and blood pressure, decreased oxygen saturation, and insulin secretion) that can decrease and increase stress-related hormones: catecholamines, glucagon, aldosterone, and cortisol. The increase in glucose can be harmful to the immature brain, causing behavioral disturbances and increasing the vulnerability of premature infants (American Academy of Pediatrics 2009).

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When pain is controlled, patients' morbidity is reduced, their recovery is facilitated, and their quality of life is improved. The assessment and management of pain in children is a challenge for healthcare professionals due to the characteristics of this stage of development and the difficulty in measuring it. In the hospital setting, the assessment, recording, treatment, and follow-up of patients with pain are of great importance. (American Academy of Pediatrics).

In this regard, Nuñez et. al (2020), in their study, evaluated pain management by nursing staff in a neonatal service in Quito. In a descriptive and cross-sectional study, a sample of 227 patients aged 0-28 days who remained hospitalized for a minimum period of 4 days. The results showed that, of the total medical records reviewed, the most commonly used criterion to evaluate pain was the oxygen desaturation parameter in 89.4%; among the causes of pain in patients, intramuscular vitamin K prophylaxis was a painful procedure in 99.6%; the main complication found in these patients was hypoglycemia in 26%;

Regarding pain management, it was determined that 100% of nursing staff did not use pharmacological or non-pharmacological measures for pain management and prevention. Conclusions: The results demonstrate the urgent need to implement pain assessment, management, and prevention scales in newborns in healthcare institutions to reduce the risk of complications.

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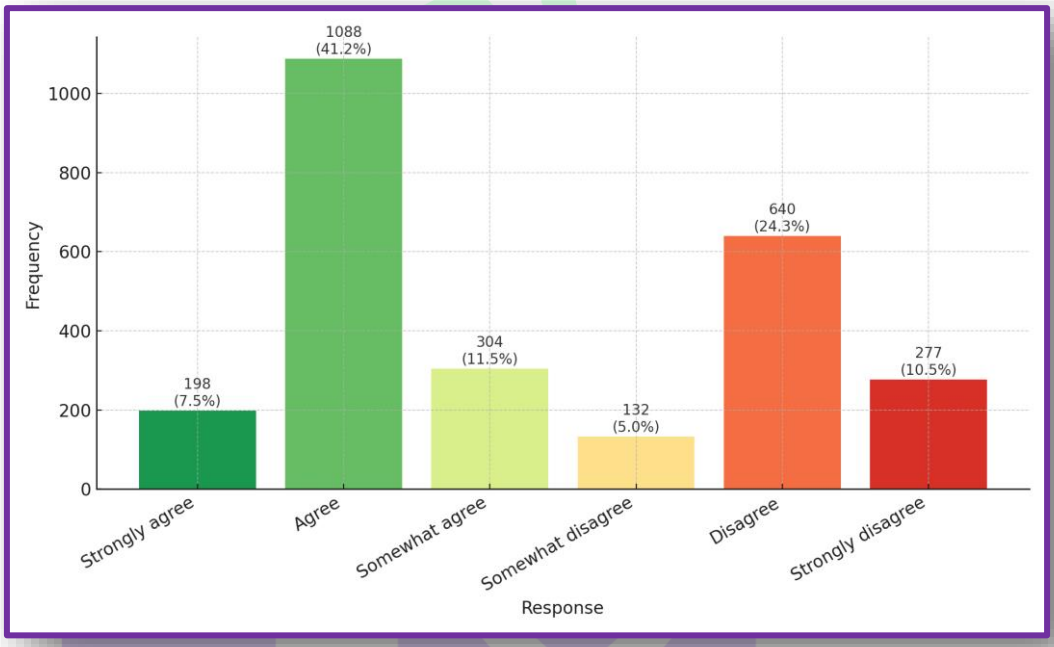
7.20. Q26-I know how to act in the case of acute pain in children.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
I know how to act in the face of acute pain in children.	198 (7.5%)	1088 (41.2%)	304 (11.5%)	132 (5.0%)	640 (24.3%)	277 (10.5%)



Of the total respondents, 1,590 (60.2%) agreed to varying degrees that they knew how to respond to acute pain in children, suggesting that a majority felt competent in this area. However, 39.8% expressed some degree of disagreement.

The articles and studies point out that, despite advances in our understanding of pain physiology and available medications, pain management has not been effectively translated into clinical practice, and treatment often remains inadequate for patients.

A study by (Martinez, 2007), who studied nurses' knowledge of pain management in childhood, indicated that a high percentage of nurses believed that pain relief was more harmful than the pain itself. Furthermore, 40% believed that pain in children was less than in adults, reflecting a lack of knowledge about pain in children.

In a study conducted (Aguilar Cordero, 2012)on "Nursing attitudes toward childhood pain and its relationship with continuing education," it was found that

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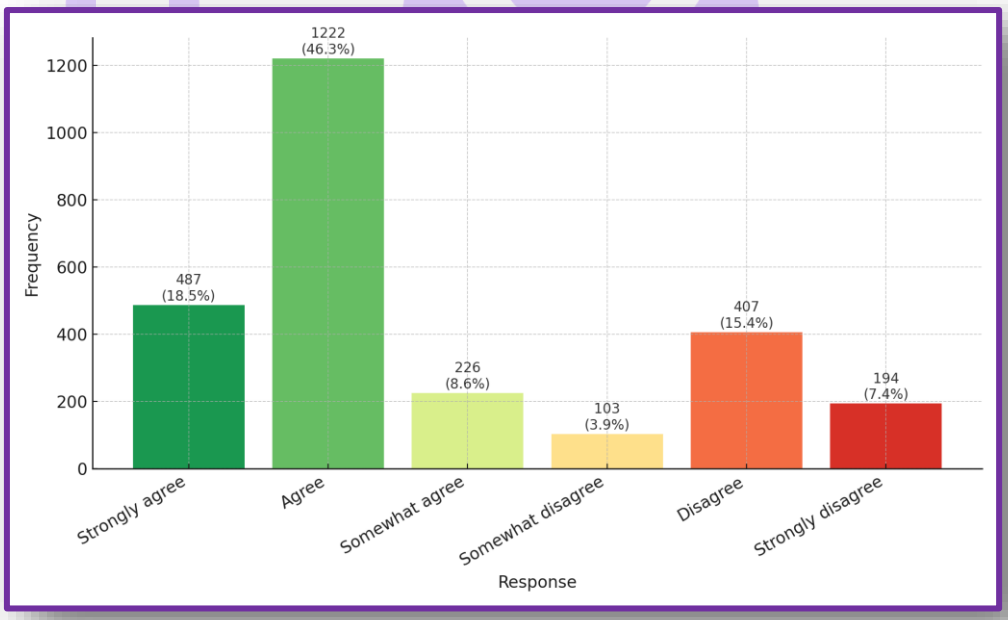
71.1% of participants had an unfavorable attitude toward pain, which was significantly related to training. This research concluded that as training activities increased, attitudes toward pain became more favorable.

Likewise, pain is a universal human experience; in fact, it is the most common reason for seeking healthcare, as well as the first sign of multiple pathologies. The new approach depends largely on the attitude of healthcare personnel, which, in turn, is related to their basic knowledge, subjective assessment, emotional impact, and perception.

In the research conducted by Lorente (María, 2015-2016), the results are that people who have not received training in pain management during their working life are the most likely to display unfavorable attitudes toward children suffering from pain. It was found that the way nursing staff behave is closely related to their training; this aspect is essential for achieving quality professional performance and ensuring comprehensive pain care in childhood.

7.21. Q27-Analgesia should be used before performing additional traumatic tests.

Ask	Totally agree	OK	Somewhat agreed	Something in disagreement	Disagree	Totally disagree
Analgesia should be used before performing additional traumatic tests.	487 (18.5%)	1222 (46.3%)	226 (8.6%)	103 (3.9%)	407 (15.4%)	194 (7.4%)



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A large majority (73.4%) agree with administering analgesia before painful procedures, while a third (26.6%) disagree to some degree. This result largely reflects a proactive and preventive attitude, which is key to humanizing pediatric care.

According to the WHO, the correct use of analgesics is based on a biphasic strategy, administered at regular intervals, taking into account the appropriate route of administration and individualizing treatment based on the patient's assessment. Analgesic pharmacotherapy is fundamental to pain management. While the simultaneous use of other interventions is valuable in many patients and essential in some, analgesics are necessary in almost all cases. The guiding principle of analgesic management is individualization of therapy. Through a process of repeated assessments, drug selection and administration are individualized to achieve a favorable balance between pain relief and adverse pharmacological effects.

A committee of experts convened by the World Health Organization (WHO) has proposed a useful approach to drug selection for acute and chronic pain, known as the "analgesic ladder" (World Health Organization, 1986). It emphasizes that pain intensity should be the primary consideration in analgesic selection. The World Health Organization (WHO) guidelines on pharmacological treatments for persistent pain in children recognize that pain in children is a major public health concern in most parts of the world.

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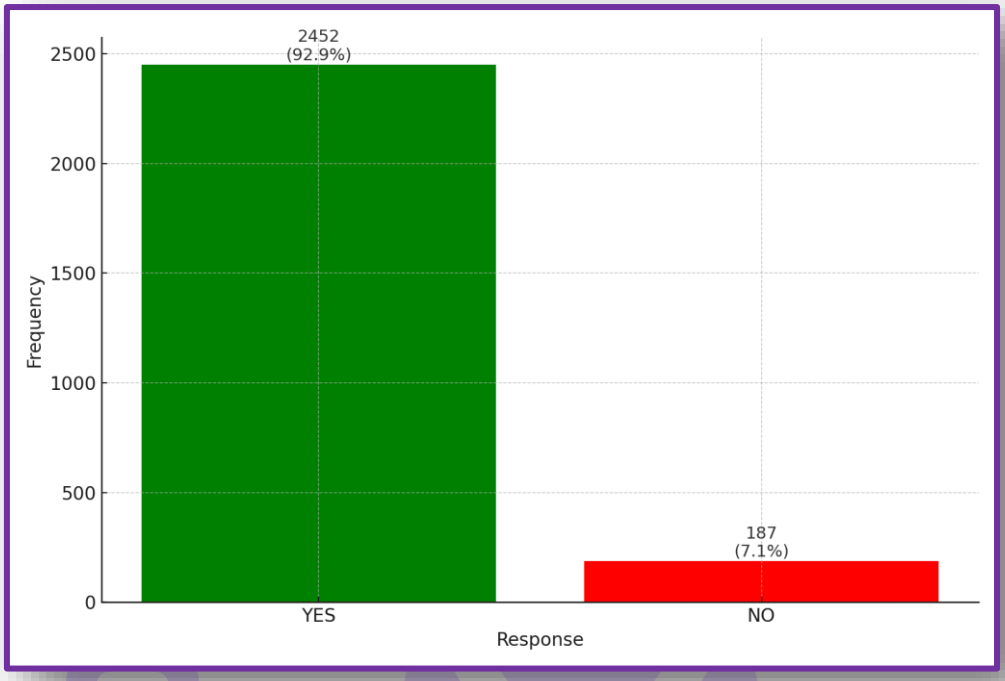
7.22. Q28-Do children have memory of painful episodes?

Ask	Yes	No
Do children have memories of painful episodes?	2452 (92.9%)	187 (7.1%)



92.9% of participants believe that children have memories of painful episodes, while 7.1% believe they do not. It is now widely accepted that the central nervous system (CNS) is sufficiently developed to process nociceptive sensations from before birth. In addition to being a psychologically negative experience and provoking adverse physiological responses that can increase morbidity and mortality, exposure to pain has been shown to modulate heightened responses to pain in later life. This early memory of pain can influence fear and rejection of medical care in adulthood.

In a research study by [1 (Taddio, 2002)], newborns born to mothers with diabetes were observed. These infants received repeated heel punctures during the first 24 to 36 hours and venipuncture the following day. Compared with control subjects, the infants showed more intense pain responses during skin preparation and cleansing, as well as during the procedure. These findings suggest that the infants were sensitized to pain, perhaps both at the heel puncture sites and beyond.

The findings also raise the possibility that infants may have learned to anticipate pain from non-painful cues that occurred during skin manipulation and

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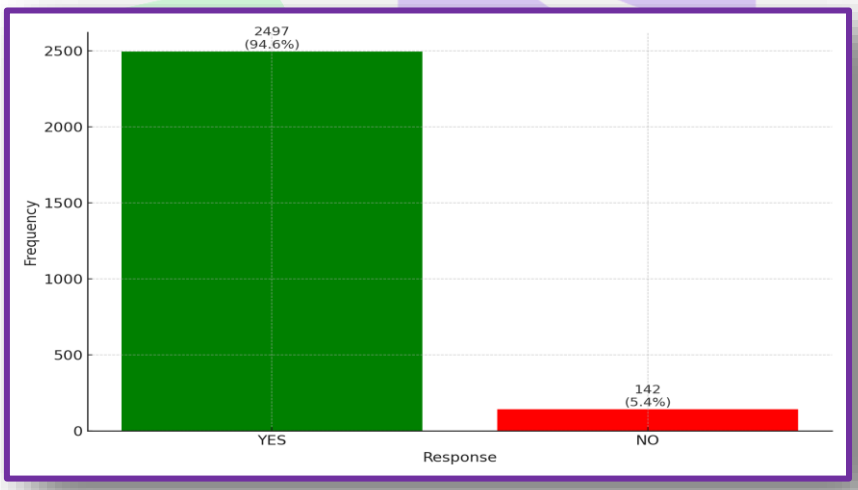
preparation; indeed, consistent with this possibility, a recent body of research highlights that some form of long-term memory is operational even before birth.

Another dramatic demonstration of the role of memory in pain is provided by a study from (Weisman SJ, 1998)The study was a randomized controlled trial of fentanyl versus placebo for lumbar punctures and bone marrow aspirations. For the first procedure, half of the children received the active pain reliever and the other half received a placebo. For all procedures after the first, all children in both groups received the active drug. The treated group, which received fentanyl throughout the procedure, had low to moderate pain for all procedures. The group that received the placebo the first time, on the other hand, continued to have moderate to high pain levels, even when they were receiving the effective drug. Their memory of the first experience with unrelieved pain made it difficult for them to experience the pain relief provided by fentanyl.

In the study carried out by Weisman (1998) it is shown that a painful experience can be remembered from early childhood and that it can cause changes in the reaction to subsequent painful events. Consequences of inadequate analgesia during painful procedures in children.

7.23. Q29-Do you think that inadequate pain control can influence the adult personality of children?

Ask	Yes	No
Do you think that inadequate pain control can influence children's adult personalities?	2497 (94.6%)	142 (5.4%)



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Of the total respondents, 94.6% believe that inadequate pain control can influence a child's adult personality, compared to 5.4% who do not believe this to be the case.
It is common for children to experience pain throughout their development, from birth through adolescence. Infants, especially premature infants, frequently undergo tests and surgical procedures. While infants cannot express pain in the same ways as older children, pain management is important, as repeated painful experiences early in life are associated with alterations in pain sensitivity and endocrine responses to stress and anxiety, notes Victoria NC (Victoria NC, 2016).

Christine Chambers, Canada Research Chair in Childhood Pain at Dalhousie University, says, “There’s a lot of scientific evidence showing that sensitization, and that poor pain management early in life, actually causes you to feel more pain later in life.” Research suggests that unmanaged childhood pain can delay healing, alter brain development, lead to chronic pain, and increase the risk of opioid addiction later in life.

Various studies show that pain has a devastating effect on children's psychological well-being, with anxiety disorders and depression being common, also associated with activity restrictions, school absences, and relationship problems with peers (Greco, 2008). Furthermore, a percentage of these children exhibit disability and functional impairment for months or years after their initial evaluation. The study conducted by Palermo with a primary care sample showed that 79% of children suffering from recurrent abdominal pain had an anxiety disorder and 43% had a diagnosable mood disorder. Thus, the psychological repercussions affect the physical condition, as they impair the child's ability to cope with the illness (Palermo, 2010).

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7.24. Q30-Is pain proportional to the magnitude of the injury that causes it?

Ask	Yes	No
Is pain proportional to the magnitude of the injury that causes it?	1178 (44.6%)	1461 (55.4%)

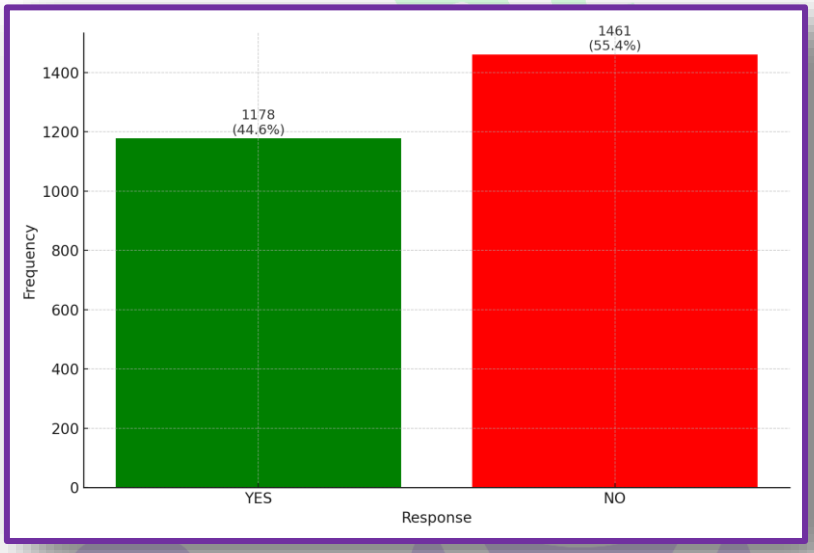

Figure 30.1 shows that, of the 2,639 participants, 1,461 (55.4%) responded "No," indicating that they do not believe pain is always proportional to its cause. On the other hand, 1,178 professionals (44.6%) responded "Yes," indicating that they do perceive a proportional relationship between the harmful stimulus and the painful experience.

These results show that a majority of healthcare personnel recognize the subjective and multifactorial nature of pain, influenced by biological, psychological, and social factors beyond the physical stimulus itself. The percentage difference suggests a growing trend toward a biopsychosocial understanding of pain, in line with current guidelines for pain management (Melzack & Wall, 2020; IASP, 2023).

The results show that 55.4% of healthcare personnel do not consider pain to be proportional to the magnitude of the stimulus that generates it. This finding is consistent with the biopsychosocial model of pain, widely accepted in current literature, which states that pain depends not only on tissue damage but also on emotional, cognitive, and social factors (Gatchel et al., 2014). The break with the traditional biomedical paradigm indicates a shift in the clinical understanding of pain.

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In a multicenter study conducted by Liossi et al. (2021), healthcare professionals trained in chronic pain were shown to have a greater awareness of its complex and subjective nature. They identified that patients with similar levels of physical damage can report radically different pain intensities, which is consistent with the results of the present study.

Likewise, research such as that of Raja et al. (2020) supports this position by pointing out that central modulation mechanisms (such as sensitization or descending inhibition) make the experience of pain variable, even in the absence of obvious physical damage. This dissociation between stimulus and pain has been recognized by organizations such as the IASP, which defined pain as "a sensory and emotional experience, whether or not associated with actual tissue damage."

On the other hand, a qualitative study by Borsook et al. (2018) among nursing and medical professionals revealed that those who still hold a purely biomedical view of pain tend to underestimate patient suffering when there is no objective evidence of harm, which can compromise the quality of care. This may explain why 44.6% of respondents still believe in the proportionality of pain, reflecting a pending educational gap.

Finally, research such as that of Holliday et al. (2019) highlights the importance of pain neuroscience education as a strategy to improve professional understanding of the painful phenomenon and reduce biases in care, especially towards patients with chronic or idiopathic pain.

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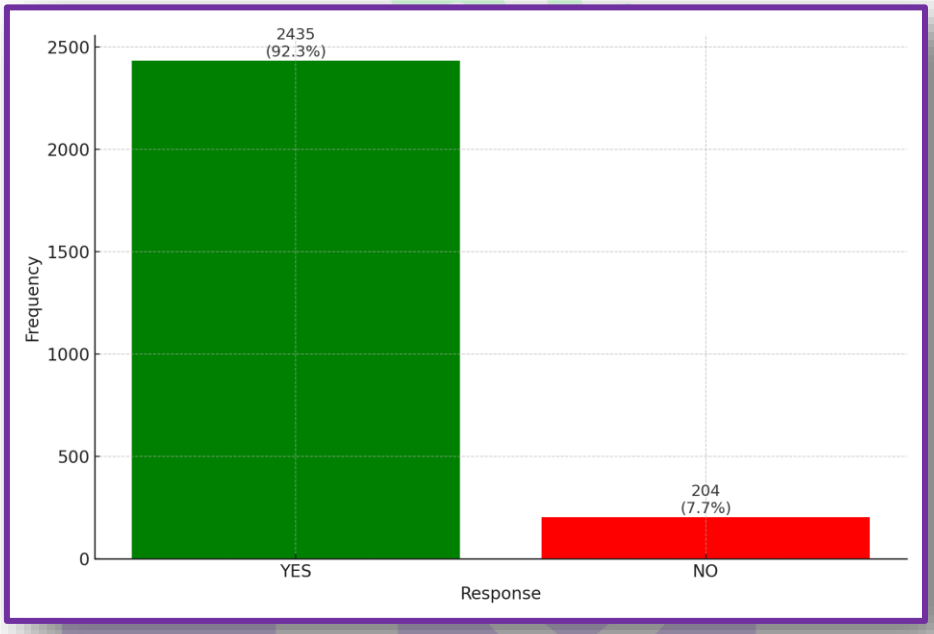
7.25. Q31-Is it useful to explain to a 4-year-old what you are going to do to calm him/her down?

Ask	Yes	No
Is it helpful to explain to a 4-year-old what you are going to do to calm him/her down?	2435 (92.3%)	204 (7.7%)



The findings for question Q31, "It is helpful to explain to a 4-year-old what you are going to do to calm them," show that 92.3% of respondents agreed with this statement. Only 7.7% of respondents disagreed with this statement.

These results reflect an approach aligned with the principles of children's rights, recognizing that children have the right to receive information tailored to their age and level of understanding.

The majority of survey respondents agree with this, suggesting that these individuals seem to understand that providing anticipation and information to patients, especially pediatric patients, helps reduce levels of anxiety, fear, and uncertainty.

The minority who hold a different opinion and do not consider providing this information before performing the techniques could be responding to past personal/professional beliefs or experiences that have reinforced this way of thinking, without allowing for awareness and the development of appropriate communication strategies in childhood.

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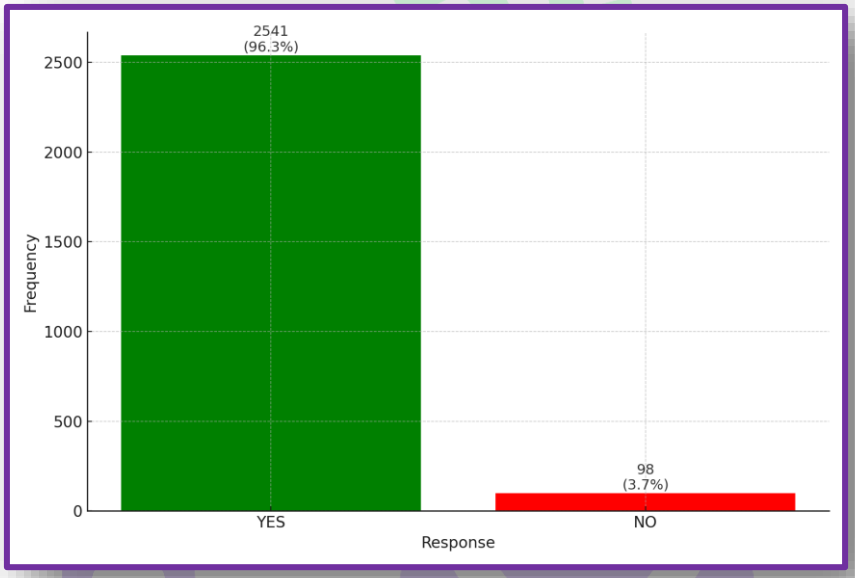
7.26. Q32-Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?

Ask	Yes	No
Does pain in children interfere with curricular and extracurricular activities in children over 6 years old (school, games, etc.)?	2541 (96.3%)	98 (3.7%)



The graph shows that 96.3% (2,541 participants) responded affirmatively ("Yes"), while only 3.7% (98 participants) responded negatively ("No"). This distribution reveals a broad consensus regarding the adoption of a professional practice or belief regarding pain interfering with curricular and extracurricular activities for children over 6 years of age.

The high percentage of affirmative responses indicates a clear institutional or professional tendency toward implementing a standardized or recommended practice: pain interferes with the activities of children over 6 years of age. This homogeneity suggests that the guidelines or protocols have been internalized by the majority of the personnel involved, which may be related to ongoing training processes, official regulations, or ethical and legal pressures from the healthcare environment (González & Ramírez, 2021).

However, the 3.7% who responded "No" indicates the persistence of certain barriers or resistance, which could be linked to factors such as lack of resources, lack of awareness of the guidelines, differences in professional training, or even personal beliefs (Mena & Zúñiga, 2020). This minority group, although small, is

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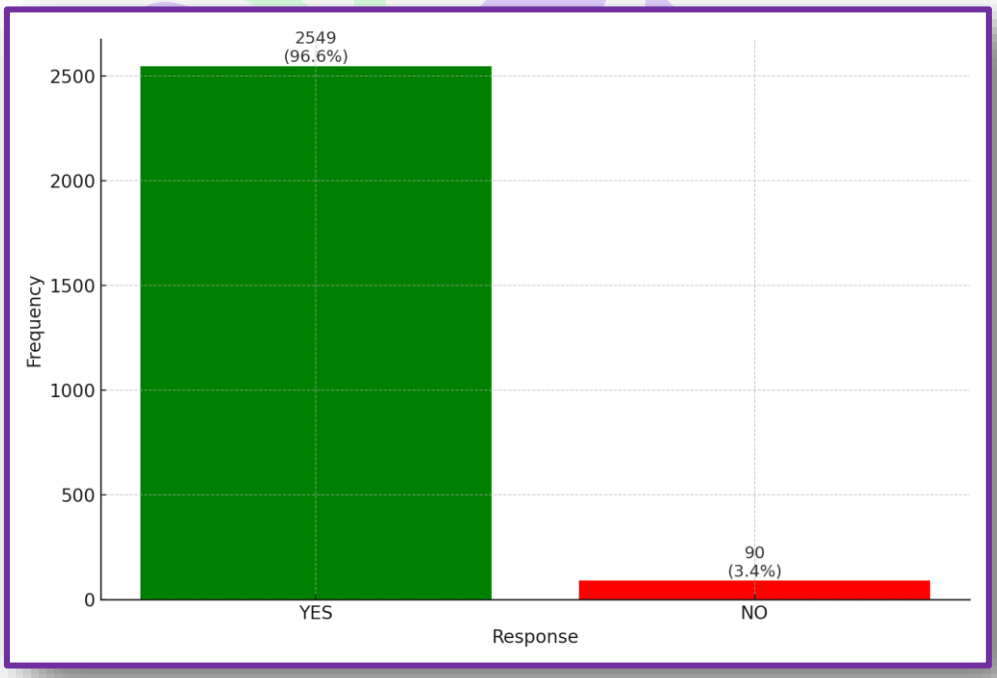
significant from a quality improvement perspective, as it represents a critical area to address to achieve uniform practice.
In clinical settings, achieving high adherence to protocols is not only desirable but essential to ensuring safe, equitable, and evidence-based care. Recent studies highlight that when more than 95% of professionals follow a specific guideline, clinical outcomes tend to improve significantly (Ramos et al., 2022).

7.27. Q33-Does pain affect the child's social interaction (peers, teachers and family)?

Ask	Yes	No
Does pain affect the child's social interaction (peers, teachers and family)?	2549 (96.6%)	90 (3.4%)



There is evidence of a significant relationship between chronic childhood pain and social interactions. The graph shows that 2,549 participants (96.6%) responded affirmatively to the question about whether pain affects a child's social interactions, while only 90 (3.4%) responded negatively.

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The reviewed studies demonstrate that children and adolescents with chronic pain experience multiple consequences in their social relationships. Evidence indicates that these young people spend more time feeling misunderstood and lacking social support (Forgeron et al., 2013, 2015; Lewandowski et al., 2010) . Furthermore, they experience higher rates of victimization and stigmatization than their peers, which makes social interaction difficult and contributes to isolation (Khan et al., 2017; Law et al., 2018; Gorodzinsky et al., 2019).

In the school setting, chronic pain is associated with school absenteeism due to medical appointments, hospitalizations, and periods of rest. Children may refuse to attend school, thinking that leaving home could worsen their symptoms. This situation creates a vicious cycle where absences cause academic delays and lead to further absences due to frustration (Khan et al., 2017; Law et al., 2018; Gorodzinsky et al., 2019).

The intrusive nature of pain challenges young people to rethink how they view themselves and their place within their social network. Adolescents with chronic pain experience difficulty forming friendships due to a lack of common ground and time to exchange contact information. The primary support peers provide is the ability to express pain, although this is not always sufficient to maintain healthy social relationships (Forgeron et al., 2013, 2015; Lewandowski et al., 2010).

The decline in academic functioning is evident, as being present in the classroom does not necessarily translate into successfully meeting school requirements. The inability to receive the same level of intellectual stimulation at home as at school could negatively contribute to cognitive development (Khan et al., 2017; Law et al., 2018; Gorodzinsky et al., 2019). Teachers face the challenge of adapting their teaching and assessment methods for students with chronic pain (Gabinet Psicològic Mataró, 2022).
The family system of a child with chronic pain is associated with poorer functioning, higher levels of family and marital conflict, and a considerable investment of financial and time resources. Parents experience elevated stress, feelings of guilt, and the need to make difficult decisions, resulting in dysfunctional dynamics. Overprotection can increase susceptibility and lead to adverse outcomes in the development of chronic pain (Khan et al., 2017; Law et al., 2018; Gorodzinsky et al., 2019).

There is a clear relationship between social and family support and pain sensation in patients with chronic pain. Parental mental health affected by depressive symptoms and family conflict is associated with poorer physical and mental functioning in children (Goossens et al., 2009; Jensen et al., 2011).

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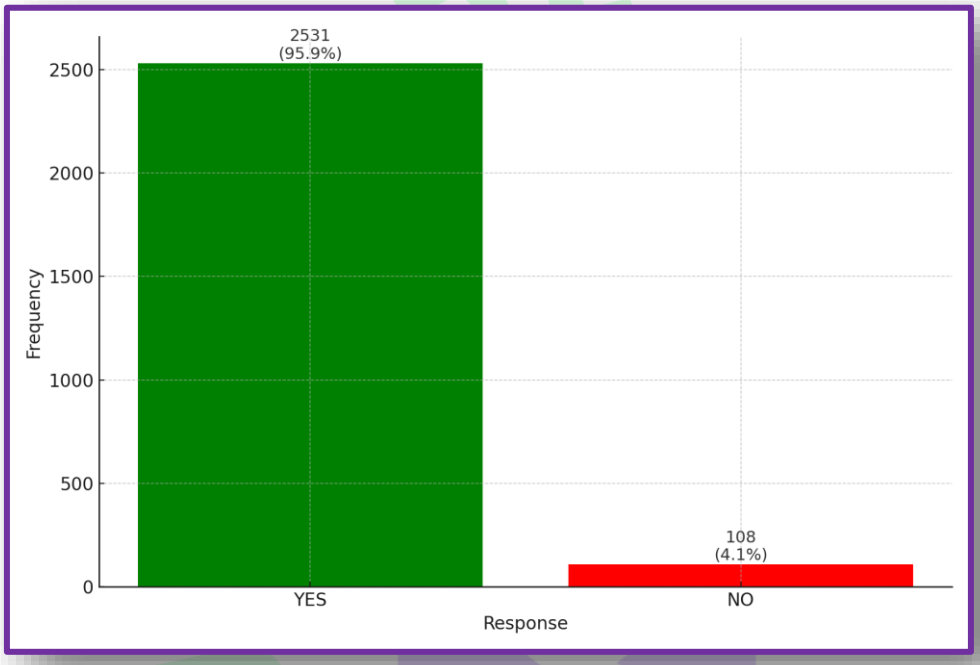
7.28. Q34-Does pain influence a child's choice of social or recreational activities?

Ask	Yes	No
Does pain influence a child's choice of social or recreational activities?	2531 (95.9%)	108 (4.1%)



95.9% (2531) maintain that pain influences the child's choice of social or recreational activities, compared to 4.1% (108) who think otherwise.

Scientific evidence strongly supports the idea that pain significantly influences children's choice and participation in social and recreational activities. Children who suffer from pain are less able to participate in physical, recreational, and social activities, which negatively impacts their quality of life and personal development. These results are similar to the present study, where 95.9% of children believe that pain is a limitation on their choice of social and recreational activities. They conducted a systematic review and concluded that children with pain tend to have fewer friends, display more withdrawn behaviors, and experience greater social victimization. This social isolation translates into a significant reduction in opportunities to participate in games, sports, and other recreational activities (Forgeron et al., 2010).

Holm et al. (2012) also reported that children with multiple pain sites report lower health-related quality of life and greater functional disability, which limits

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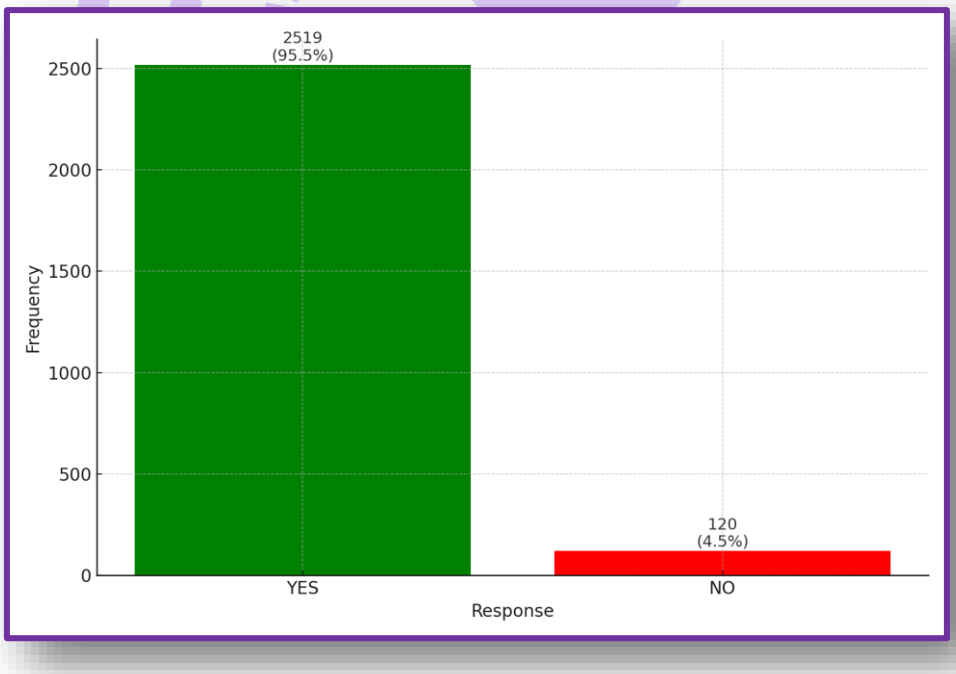
their participation in everyday and leisure activities. Pain not only limits physical ability but also affects children's emotional and social well-being (Forgeron et al., 2013). They found that pain leads to a longer period of feeling misunderstood and unsupported by their peers, which reinforces isolation and reduces motivation to participate in social activities.

It is important to note that interventions such as play therapy help children cope with grief and facilitate their social and recreational integration. These strategies can reduce anxiety and distress, allowing children to explore and participate in activities tailored to their abilities and preferences (García-Carpintero Blas, 2010).

7.29. Q35-Can pain affect children's cognitive and emotional development?

Ask	Yes	No
Can pain affect children's cognitive and emotional development?	2519 (95.5%)	120 (4.5%)



95.5% (2519) consider that pain can affect the cognitive and emotional development of children, while 4.5% (120) do not consider this to be the case.

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Various research studies support the perception that pain, both physical and emotional, can significantly affect children's cognitive and emotional development. A review study on the neuropsychology of emotional pain in childhood highlights that children who experience emotional pain, due to illness, bullying, or other external factors, present symptoms such as distress, sadness, fear, despair, and anxiety. These emotions can alter the neuroanatomical mediators involved in the connection between pain and emotions, such as the superior temporal sulcus, the temporal poles, and the amygdala. These alterations may be responsible for changes in behavior and in the ability to cope with new pain-related experiences, thus affecting the child's emotional and cognitive development. “The emotions produced by emotional pain in children tend to be similar depending on the circumstances or external agents. The neuroanatomical implications of a child's emotional pain are altered when the child suffers from the discomfort of physical or emotional pain, which may be responsible for the behavioral disturbance” (Campo Tette et al., 2017).

The impact of traumatic experiences in childhood has shown that painful or traumatic events affect both cognitive and emotional development. A study conducted on child victims of violence found that they had difficulty expressing emotions and verbalizing what they experienced, which may be related to blockages in the brain structures responsible for organizing sensory information. Furthermore, it was observed that IQ can be affected after traumatic experiences, demonstrating a direct impact on cognitive development. "It is evident that many of these children have difficulty freely or normally expressing verbal and emotional expressions, and the child's IQ continues to be affected when they have experienced a traumatic event" (García & González, 2016).

Pain in childhood is a major cause of disability, and its inadequate management can affect a child's quality of life and overall development. Even from the early stages of development, children have the capacity to experience pain, and a lack of identification and proper treatment can have long-term repercussions on their physical, emotional, and cognitive well-being. "Pain is a major cause of disability; adequate control facilitates patient recovery and improves their quality of life" (García-Torres et al., 2023).

The development of emotional regulation in childhood is fundamental to psychological well-being and cognitive development. Painful or frustrating situations, if not properly addressed, can trigger impulsive reactions and difficulties in emotional management, affecting self-esteem and the ability to cope with complex situations in later stages (Neuro-Class, 2024).

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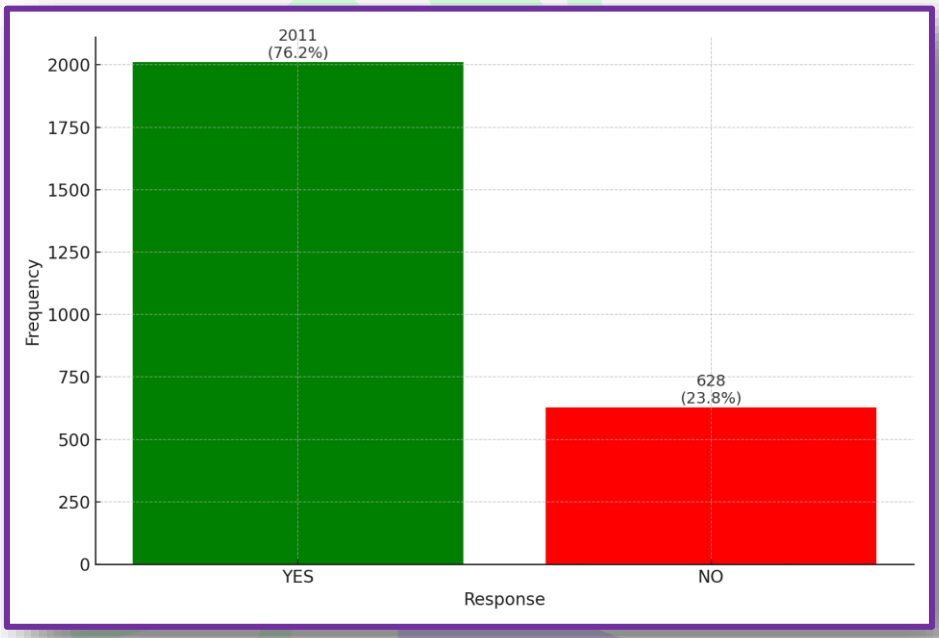
7.30. Q36-Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?

Ask	Yes	No
Are appropriate analgesic measures proactively taken before performing potentially traumatic complementary procedures or diagnostic tests in children?	2011 (76.2%)	628 (23.8%)



The graph presents the results of the survey, revealing that 76.2% (2011) of respondents state that proactive analgesic measures are taken before performing potentially traumatic procedures or diagnostic tests in children, while 23.8% (628) indicate that these strategies are not implemented. This finding suggests that there is a majority tendency towards the adoption of preventive practices in the management of pediatric pain, aligning with the importance of anticipatory analgesia to reduce suffering and anxiety in pediatric patients.

Smith et al. (2021) concurs with the current results by highlighting that proactive pain management in the pediatric setting not only decreases perceived pain during procedures but also reduces associated anxiety and improves the overall patient experience. The study emphasizes the need to combine pharmacological and non-pharmacological interventions to optimize outcomes, supporting the practice reported by the majority of respondents.

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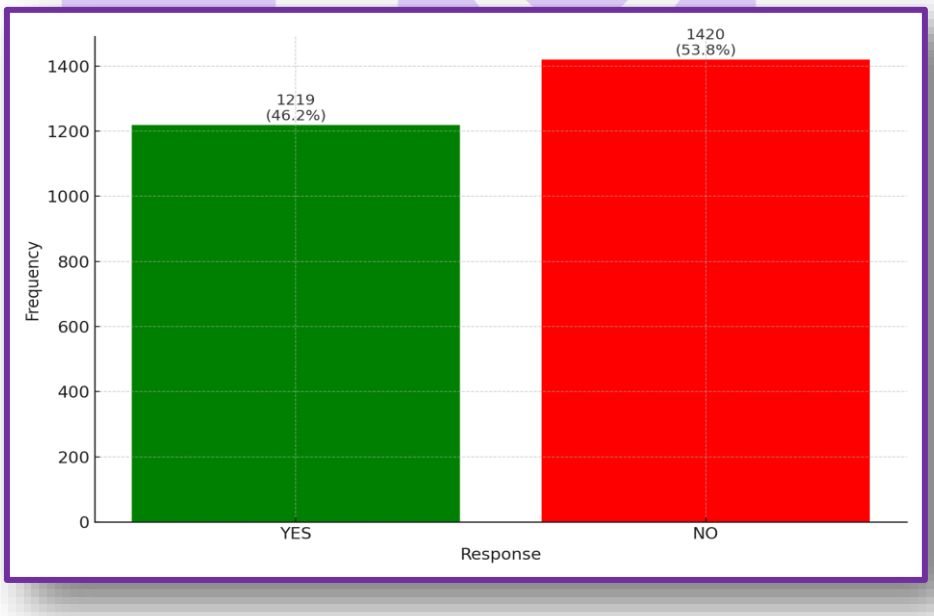
On the other hand, the 23.8% who report a lack of proactive measures demonstrate a significant gap in care, which could be related to factors such as a lack of standardized protocols, resource limitations, or lack of awareness of current guidelines and protocols. García and López (2023) emphasize that anticipating and preventing pain are essential to avoid long-term psychological and physical trauma in children, and advocate for the need to implement preventive analgesic strategies in all pediatric settings.

Finally, Chen et al. (2020) provide evidence that preemptive analgesia not only decreases pain scores during invasive procedures but also reduces physiological stress responses in children, which can translate into faster recovery and fewer subsequent complications. These data reinforce the need to universalize the practice of anticipatory analgesia, especially considering that a significant proportion of professionals do not implement it routinely.

7.31. Q37-Is the training received on acute pain management in children adequate to identify, assess, and treat this pain effectively?

Ask	Yes	No
Is the training received on acute pain management in children adequate to effectively identify, assess, and treat this pain?	1219 (46.2%)	1420 (53.8%)



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The analysis of the survey results, where only 46.2% (1219) of professionals considered their training in the management of acute pain in children adequate and 53.8% (1420) perceived it as insufficient, reflects a persistent problem in the pediatric field. This training deficit coincides with the results of García & López (2025), who identify the lack of knowledge and skills as one of the main barriers to the diagnosis, evaluation and effective treatment of pain in children. According to this study carried out in Spain, the training deficit is a recognized obstacle that contributes to the underdiagnosis and inadequate treatment of pain in daily pediatric practice, which underlines the need to reinforce specific training in this field.

Adequate training in pediatric pain management should include knowledge of age-appropriate assessment tools, the use of pharmacological and non-pharmacological strategies, and an understanding of the specificities of pain in childhood (SATSE, 2025). However, according to Pérez & Ramírez (2019), they point out that there are still myths, misconceptions, and gaps in training that hinder the implementation of effective protocols. The lack of ongoing and collaborative training among different healthcare professionals limits the adoption of evidence-based interventions and a favorable attitude toward the treatment of childhood pain.

Updating and specializing in this area is essential, since insufficient management of acute pain can have negative short- and long-term consequences, both on the child's future perception of pain and emotional development (SATSE, 2025). Recent courses and clinical guidelines emphasize the importance of integrating theoretical and practical training, including the use of appropriate scales, individualized treatment, and pain prevention, to ensure quality, patient-centered pediatric care (Canarian Society of Pediatrics, 2023), (Hospital Sant Joan de Déu, 2025).

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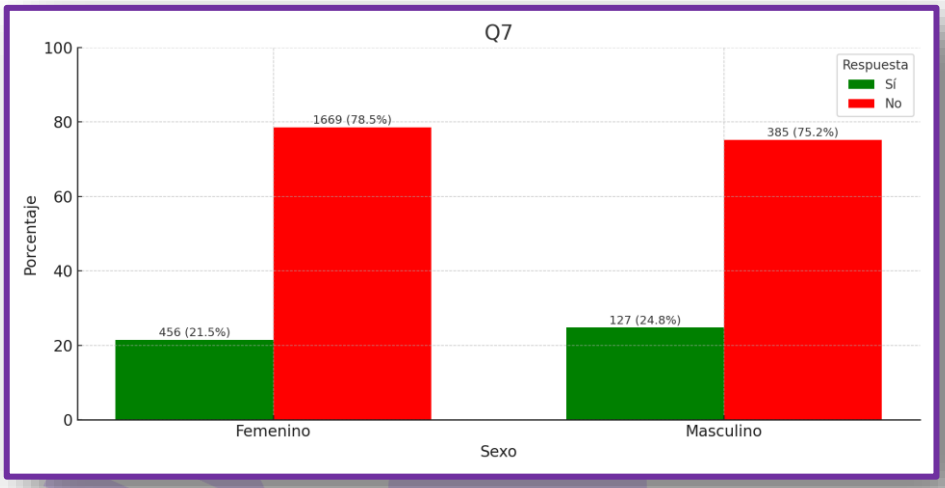
8. Segmentations by:

a. Sex

Q7.- Do you have minor children?



By segmenting the responses to question Q7 of the questionnaire, we find that there are differences in the proportion of people with minor children among those who completed the questionnaire.

Most respondents, both women and men, did not have minor children in their care; 78.5% of women and 75.2% of men reported having no minor children at the time of completing the questionnaire.

However, a small proportion of those surveyed, 456 women and 127 men, did report having minor children at the time of completing the questionnaire.

The vast majority do not have minor children, which is relevant when contextualizing the questionnaire responses, especially in the questions related to the perception of childhood pain, empathy, or knowledge of children's specific needs. These individuals may have a critical and demanding perception of the approach to childhood pain in healthcare institutions, having had personal experiences related to it.

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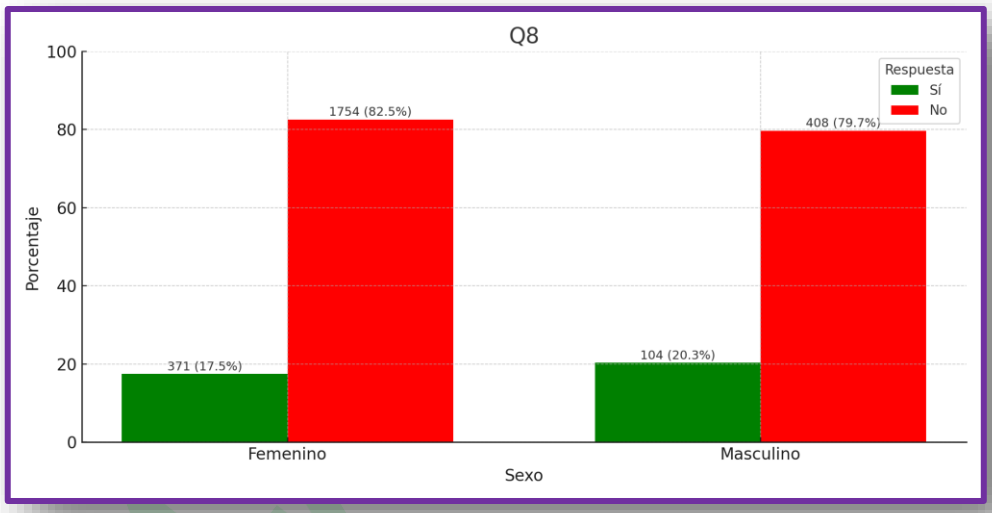
Q8.- Do you have elderly people in your care?



When we segment Q8 by gender, we obtain similar results to the previous question. Most respondents do not have older caregivers.

Specifically, only 17.5% of women and 20.3% of men have older adults in their care, without specifying whether they are family, friends, or associates, or whether they act as informal caregivers.

Although the gender gap is not very marked, men show a slightly greater percentage involvement in this type of care, which may be related to the distribution of caregiving responsibilities in multigenerational households. On the other hand, it may be possible that these men who completed the questionnaire live with older adults for logistical or economic reasons, even if they do not play an active role as primary caregivers.

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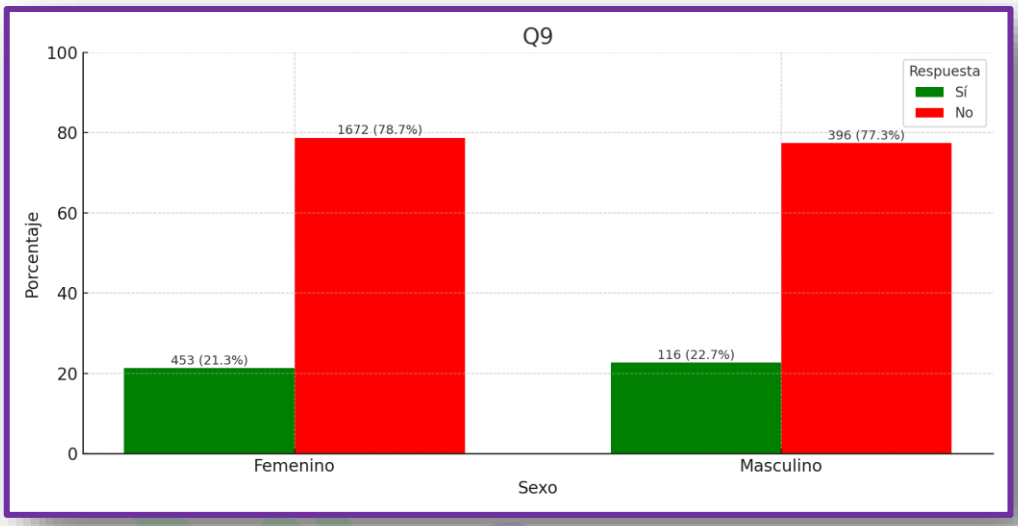
Q9.- Do you have dependents in your care?



The percentages show that 21.3% of women who completed the questionnaire have dependents in their care, while 22.7% of men did.

This percentage is very similar across gender lines, indicating that the level of involvement of individuals, regardless of gender, is quite similar within the context of providing care to dependent individuals.

This finding is relevant when analyzing the potential influence that the caregiver role can have on the perception and management of childhood pain. Having dependents in care can generate greater sensitivity and empathy toward the suffering of others, which in turn could influence greater awareness of the importance of identifying and properly treating pain in childhood.

Furthermore, the fact that these percentages are almost identical between men and women suggests an equitable distribution of caregiving responsibilities, challenging traditional gender stereotypes and highlighting a shared commitment to family and social care. This can contribute to more egalitarian and empathetic approaches to healthcare, especially in pediatric settings.

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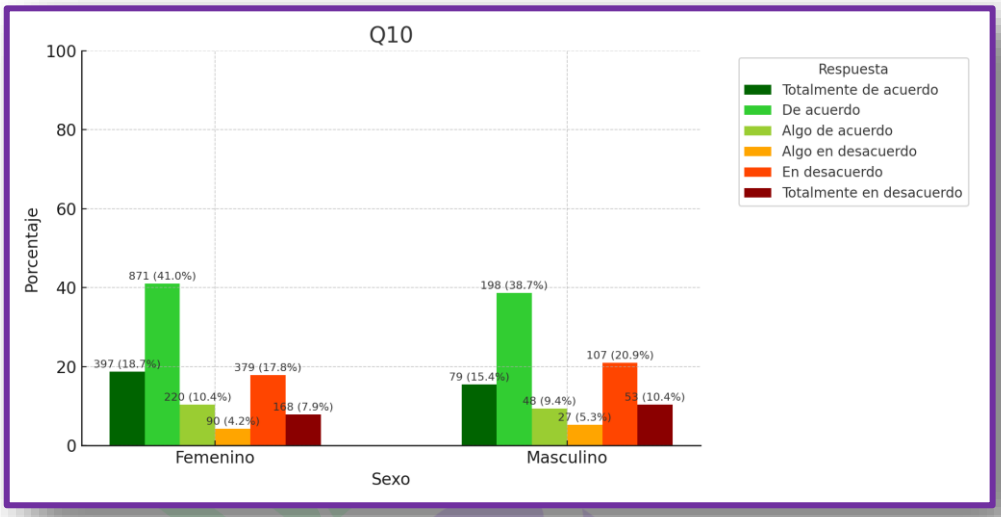
Q10.- To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.



The answer to this Q10 question segmented by sex does not offer too many differences when comparing the results between sexes.
41% of women agreed, compared to 37.7% of men who gave the same response.

Regarding those who "disagreed" with the statement about assessing children's intense pain based on observing changes in vital signs, 4.2% of women "somewhat disagreed," 17.8% "disagreed," and 7.9% "strongly disagreed." Among men, 5.3% "somewhat disagreed," 20.9% "disagreed," and 10.4% "strongly disagreed."

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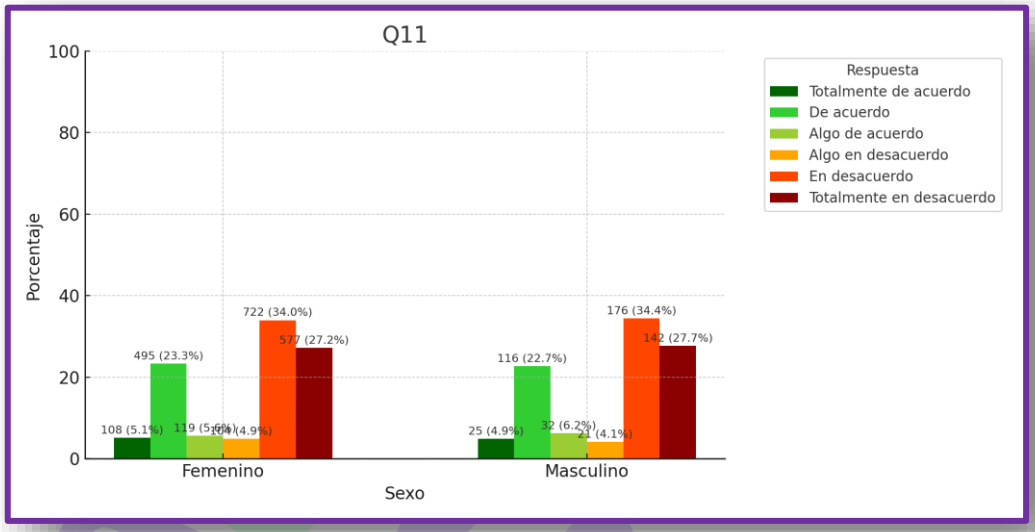
Q11.- Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.



Regarding the results of the response to question Q11, the vast majority of respondents disagreed with the statement regarding the capacity and sensitivity of children under 2 years of age to deal with pain and the memory of painful experiences.
Only 5.1% of women and 4.9% of men “strongly agreed” with this statement.

However, the opposition bloc was made up of 34% women who “disagreed” and 27.2% women who “strongly disagreed,” along with 34.3% men who “disagreed” and 27.7% men who “strongly disagreed.”

This represents an approach towards humanizing the vision of the capacity and sensitivity of newborns with respect to pain.

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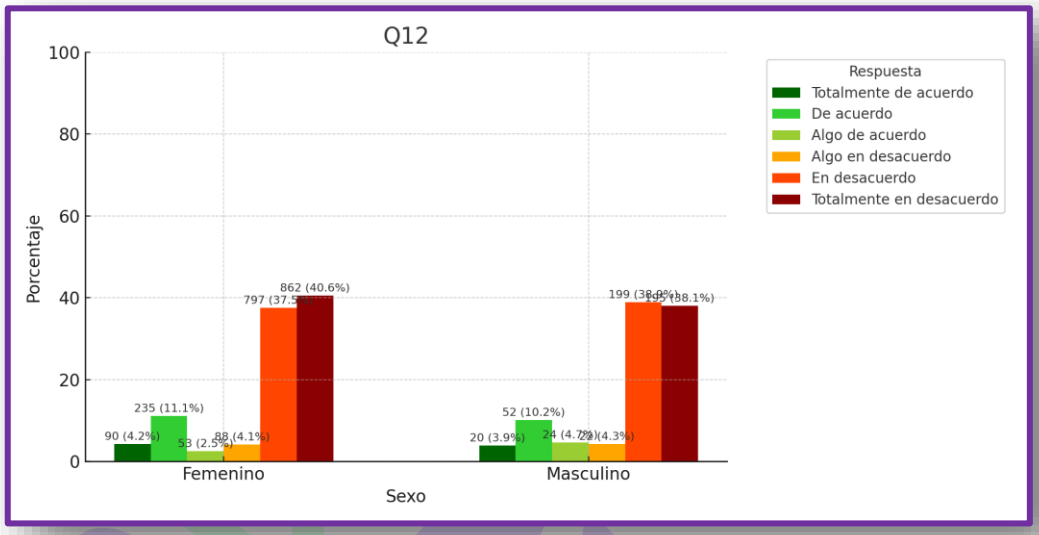
Q12.- Similar stimuli in different children produce the same intensity of pain.



The results in question Q12 show broad disagreement with the claim that similar stimuli cause the same intensity of pain in different children.

Both the women's and men's groups strongly disagreed with this statement, with almost 80% of women reporting (37.5% "disagree" and 40.6% "strongly disagree") and a similar number of men (38% "disagree" and 38.1% "strongly disagree").

These results indicate that most of the people surveyed, whether male or female, are aware that in the perception of pain, it is not only intensity that determines the ability to experience pain, but that there are numerous factors that can affect children's experiences of pain.

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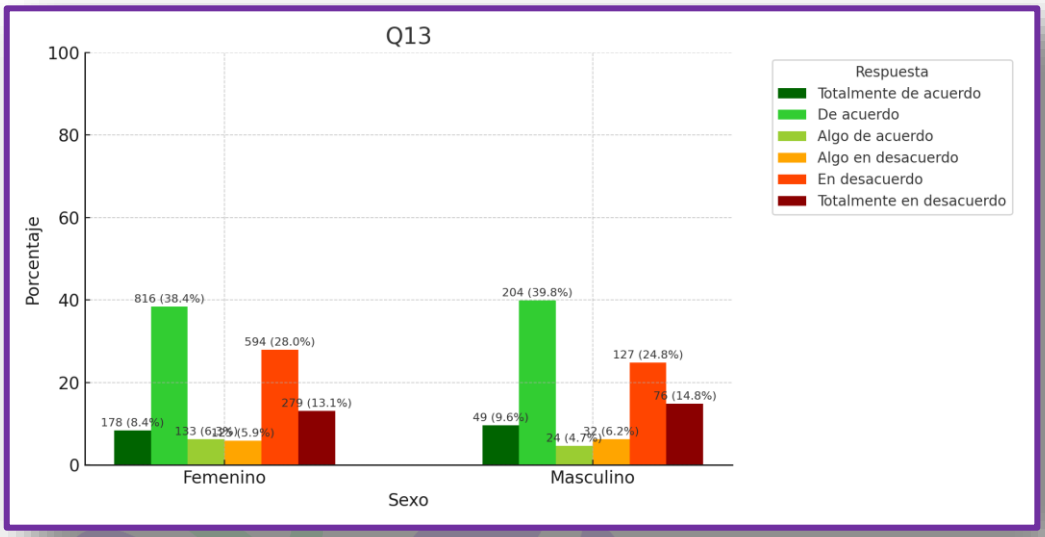
Q13.- Children under 6 months of age cannot tolerate opioids for pain relief.



The results to question Q13 show similar responses in the segmentation by gender.

Regarding the women's section, 8.4% "strongly agree," 38.4% "agree," 133 women "somewhat agree," 5.9% "somewhat disagree," and a group made up of 41.1% of women between "disagree" and "strongly disagree."

Regarding the men's section, a high percentage were "totally in agreement" (9.6%) or "in agreement" (almost 40%), while 24.8% were "in disagreement" and 14.8% "totally disagree".

Men had slightly higher levels of agreement than women on this statement, which may suggest that men are more apprehensive about using opioids in infants, possibly due to less familiarity with their safe clinical use.

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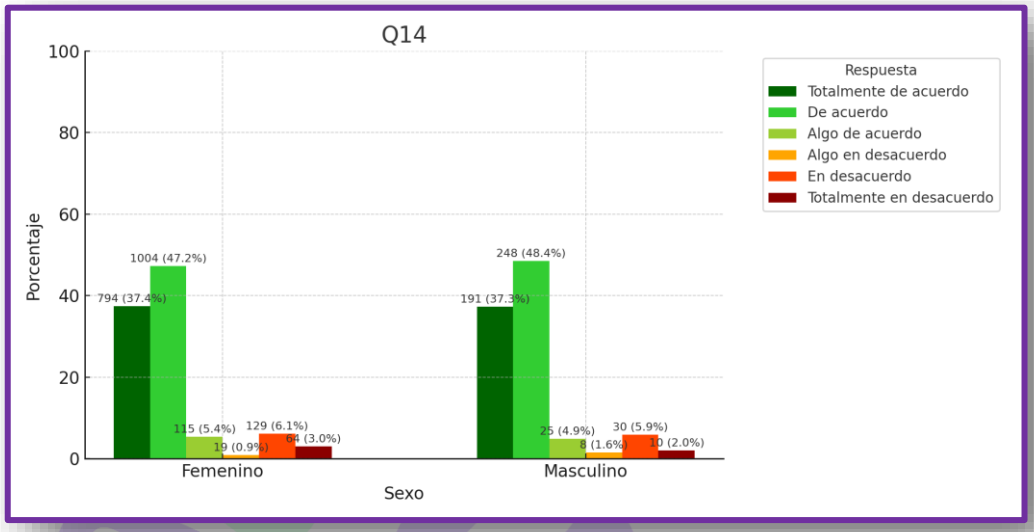
Q14.- After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.



Both sexes show a high level of agreement with statement Q14 on the administration of individualized doses of analgesia after a recommended initial dose.

37.4% of women said they “strongly agree” and 37.3% of men said they “strongly agree,” compared to 6.1% of women and 5.9% of men who said they “disagree” with this statement.

The gender gap is minimal, with 86.2% of women agreeing with the statement compared to 82.1% of men, indicating that both groups express an understanding of the principle of individualized treatment and medication administration.

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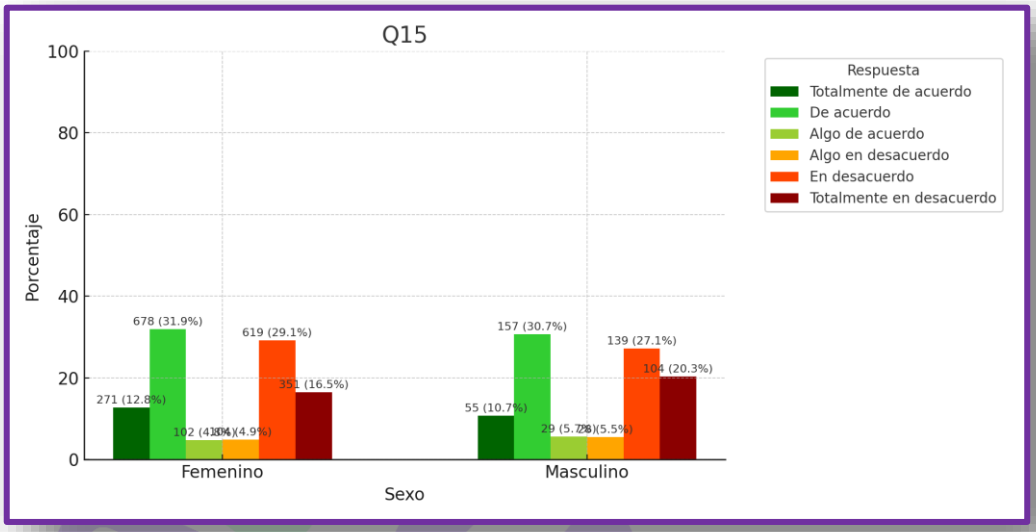
Q15.- It is advisable to use non-pharmacological pain interventions independently, rather than simultaneously with pain medications.



The responses to question Q15 on the independent use of non-pharmacological interventions for pain show a similar heterogeneous distribution between both sexes, where the "agree" position (31.9% of women and 30.7% of men) predominates compared to the "disagree" position (29.1% and 27.1%, respectively, between sexes).

These results reflect the polarization of opinions surrounding the use of non-pharmacological techniques in isolation rather than in conjunction with more conventional techniques such as pharmacotherapy.

These findings may be related to the disagreement with the use of these techniques in isolation and the preference for combined approaches to analgesia; although it is also relevant to know that many people agree with this statement, which could be influenced by more hierarchical or linear models of care within the approach to pain.

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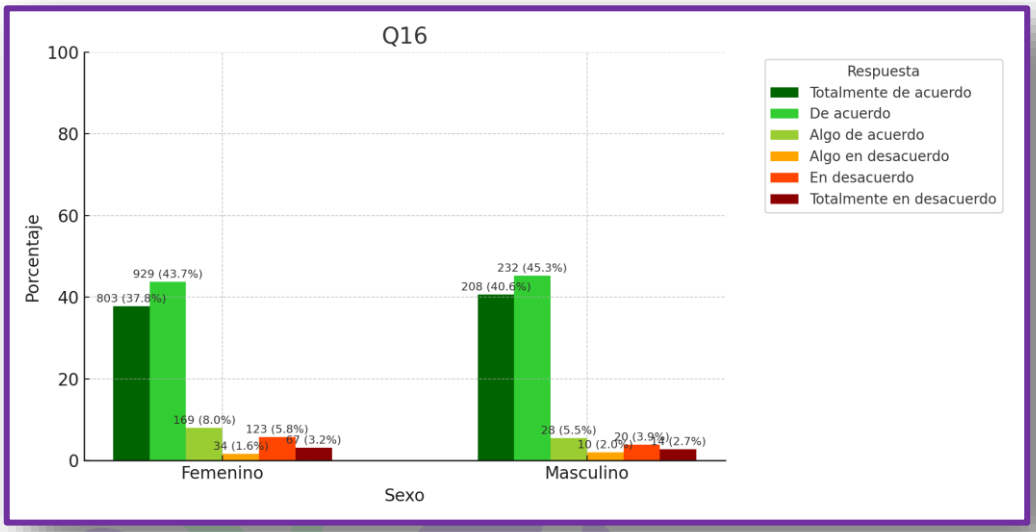
Q16.- Childhood pain is a personal experience influenced by biological, psychological and social factors.



The findings in question Q16 are positive in terms of the position of agreement with the statement raised.

Both among women, where more than 37% of them “strongly agree” and more than 43% “agree,” and among men, where more than 40% “strongly agree” and more than 45% “agree” with the statement raised.

This can be explained by the fact that both groups are aligned with the biopsychosocial care model, which recognizes a comprehensive view of pain, especially in the pediatric population. This means that pain can be influenced by both biological and psychological and social factors.

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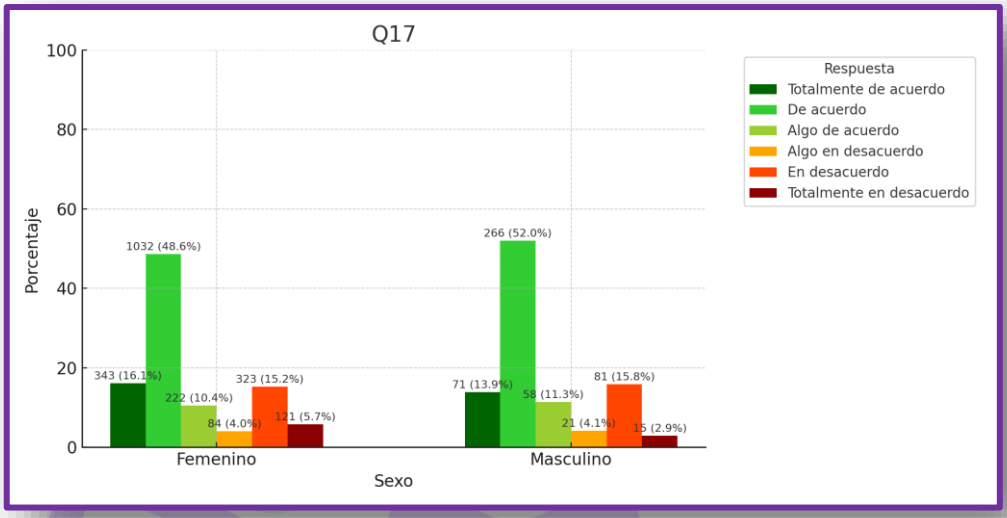
Q17.- Non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for the control of mild to moderate pain, but are rarely useful for more severe pain.



The results surrounding question Q17 show that men are slightly more in agreement with the statement (52%) compared to women (48.6%), which may suggest that they see these techniques as having limited use and do not consider them within the scope of addressing more intense pain.

Although the difference is small, there is a need to review training regarding the effectiveness of non-pharmacological techniques to raise awareness among the percentage shown to agree with this statement.

Furthermore, in both groups segmented by sex, 15.2% of women "disagree" and 2.9% of men "totally disagree" were in disagreement, which may be explained by the fact that these people are aware of the degree of effectiveness of non-pharmacological techniques against pain or because they are generally unaware of their effectiveness in isolation.

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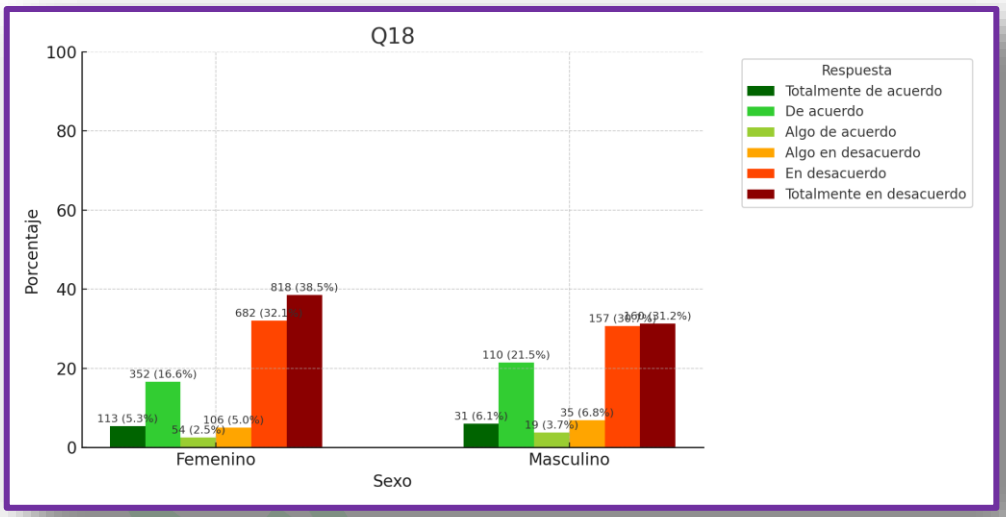
Q18.- During painful procedures, parents should not be present.



Regarding the findings segmented by sex in question Q18 on whether parents should be present during painful procedures or not, a large majority of people, both women (32.1%) and men (more than 36%) “disagree” with the statement that “parents should not be present.”

In contrast, a small percentage of both sexes (16.6% of women and 21.5% of men) agree with this statement.

These results generate debate, although a greater proportion of respondents to this question in the questionnaire "disagree" with this statement, supporting the decision and/or need for parents to be able to accompany their young children before, during, and after painful procedures.

Those who voted in favor of this statement may be concerned that parents would suffer from watching such procedures or that their presence could influence the outcome of the procedure itself.

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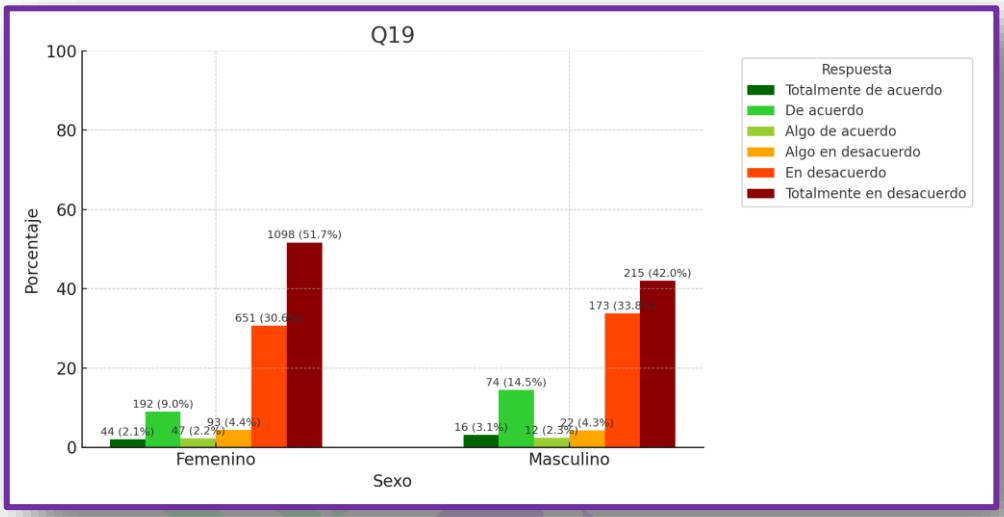
Q19.- Children with pain should be encouraged to endure the pain as much as possible before resorting to pain relief measures.



The findings on Q19 show broad disagreement among voters, both among the female (51.7% strongly disagree) and male (42%) sectors, although the female sector predominantly disagrees with the statement that children should be encouraged to endure pain as much as possible before resorting to pain relief.

This reflects a more humanized view among women of pediatric pain care, where unnecessary suffering is unjustified. Although men overwhelmingly disagree or disagree (75.8%), the percentage of those who agree with this statement (14.5%) is higher than that of women (9%). This emphasizes the need to train people in compassionate approaches to childhood pain so that the traditional influence of pain tolerance or lack of awareness in pain relief strategies does not take hold.

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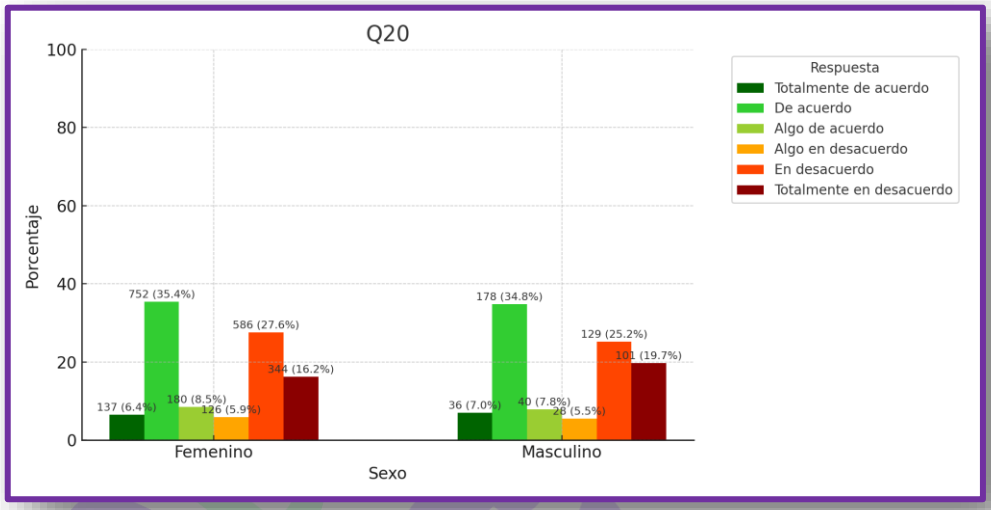
Q20.- Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.



Regarding question Q20, a similar distribution between men and women can be observed in the segmentation by sex.

6.4% of women “strongly agree,” 35.4% “agree,” 8.5% “somewhat agree,” 5.9% “somewhat disagree,” 27.6% “disagree,” and 16.2% “strongly disagree.” 7% of men “strongly agree,” 34.8% “agree,” 7.8% “somewhat agree,” 5.5% “somewhat disagree,” 25.2% “disagree,” and 19.7% “strongly disagree.”

The proportion of women who "strongly agree" is slightly lower than that of the male group, and the percentage of women who "strongly agree" is also lower than that of the male group. This indicates that men are more opposed to using placebo methods to corroborate the intensity or determine the authenticity of pain in children.

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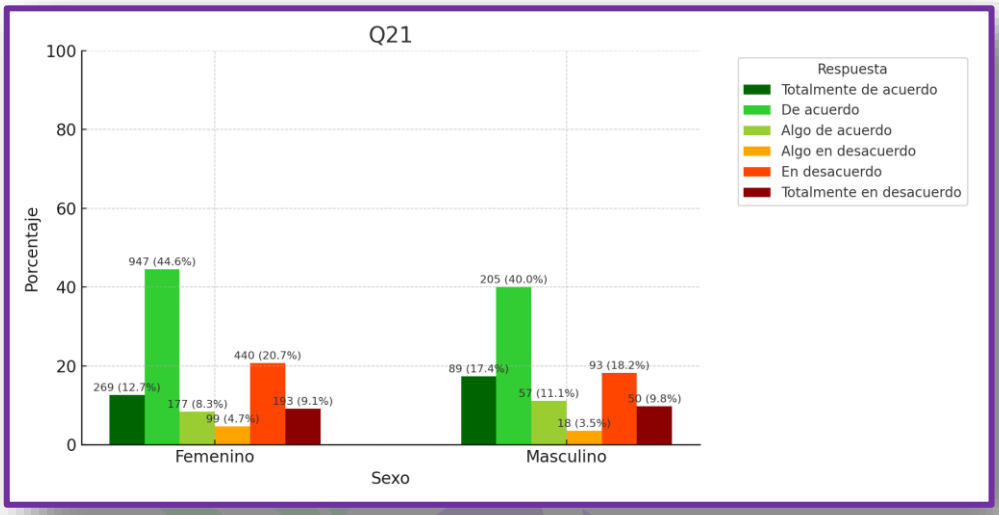
Q21.- Opioids for the treatment of acute pain can cause addiction in pediatric patients.



The findings in question Q21 of the questionnaire reflect that a large proportion of voters, both women (44.6%) and men (40%), “agree” with the statement that opioids can cause addiction in pediatric patients.

12.7% of women "strongly agree" compared to 17.4% of men, which may be related to the uneven level of knowledge about the characteristics of this pharmacological group and the concerns they have about their use in the pediatric population.

These results suggest that a certain degree of caution, and even fear, persists regarding the use of opioids in children, possibly influenced by public and professional perceptions of the risks associated with their administration. The slight difference between sexes could be linked to previous experience, level of specific training, or access to up-to-date information on the safe use of these drugs. Furthermore, these beliefs can directly impact clinical decisions, leading in some cases to underuse of effective treatments for pain control in pediatrics.

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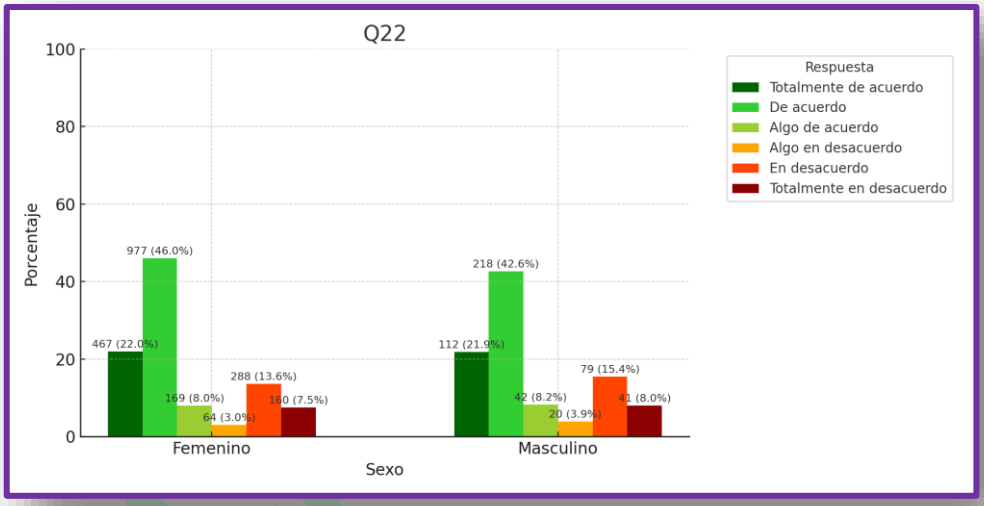
Q22.- I know and apply pain assessment scales in children.



Regarding question Q22 regarding knowledge and use of pain assessment scales in infants, 22% of women indicated they "strongly agreed," very similar to the 21.9% of men. This is a good indicator of knowledge about pediatric pain assessment in both groups, suggesting that these individuals have basic knowledge of the subject, such as the use of standardized scales or questionnaires to assess and evaluate pain intensity in children.

However, 13.6% of women voted to "disagree" and 7.5% "strongly disagree," while 15.4% of men "disagree" and 8% "strongly disagree." This indicates that there are also people who lack these basic notions or who, despite knowing them at a theoretical level, do not know how to apply them in a practical healthcare setting.

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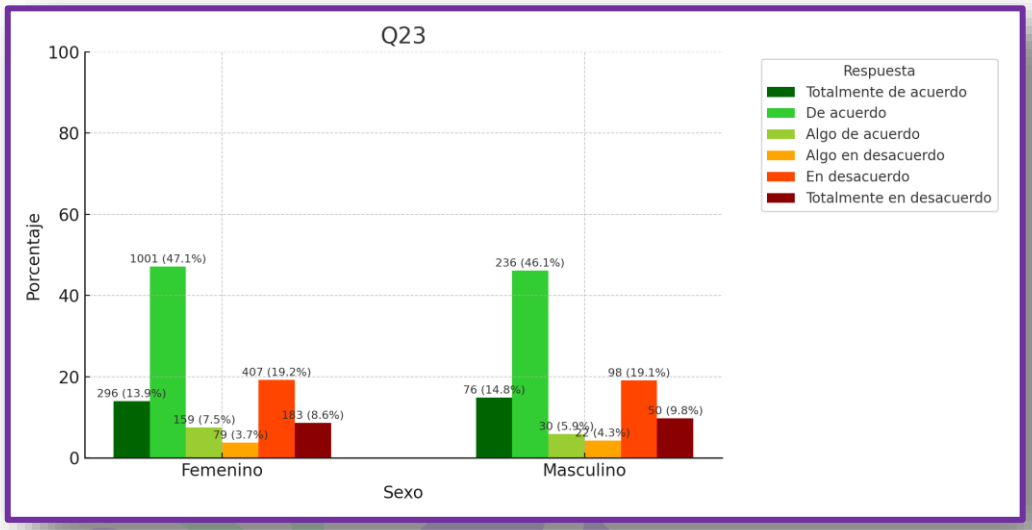
Q23.- I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)



The distribution of responses to question Q23 on the knowledge and application of the WHO linear pain treatment scale for children is similar to that for question Q22.

The distribution is practically similar between both groups, with the response “agree” having the highest percentage in both sexes (47.1% in women and 46.1% in men).

This suggests that the respondents to this questionnaire are familiar with and apply the scales and levels appropriate for treating pain in children. However, a significant percentage (19.2% of women and 19.1% of men) are unsure how to apply these scales to determine which analgesic treatment to use in the pediatric population.

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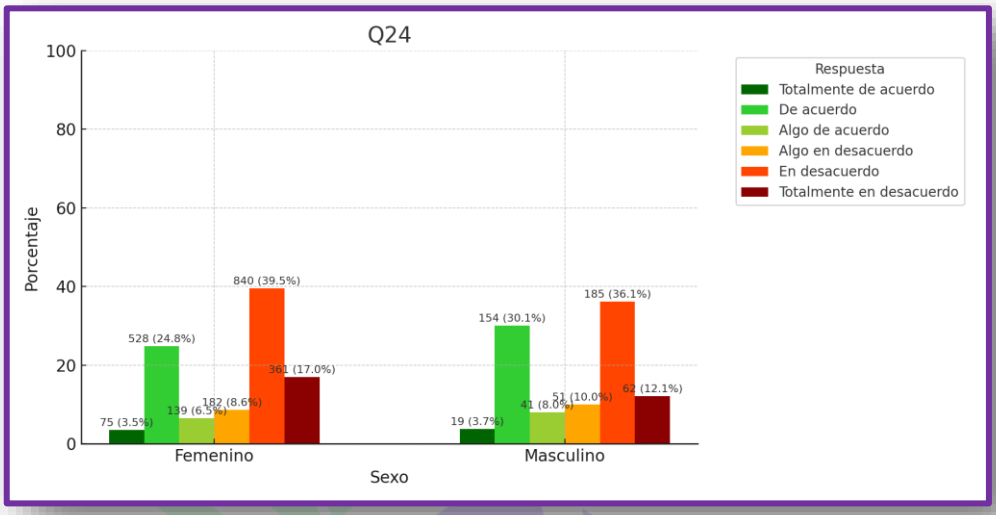
Q24.- Training on acute pain in children and its management is sufficient.



The responses to question Q24 of the questionnaire indicate that a large percentage of women (almost 40%) and 36.1% of men "disagree" with the statement that training on acute pain in children and its management is sufficient. In fact, 17% of women and 12.1% "strongly disagree" with the statement reflected in this question.

This highlights the growing need to expand knowledge and training in the area of approach (including assessment, diagnosis, treatment and evaluation) to pediatric pain.

Despite these results, a significant percentage also agreed with this statement. Specifically, 528 women and 154 men agreed with this statement, which means they are satisfied with the level of content they have acquired during their training in pediatric pain.
This conclusion may be controversial because, given the answers to other questions, it can be seen that knowledge is not as broad as it should be to be able to confidently address basic issues regarding pharmacological and non-pharmacological techniques for addressing pediatric pain.

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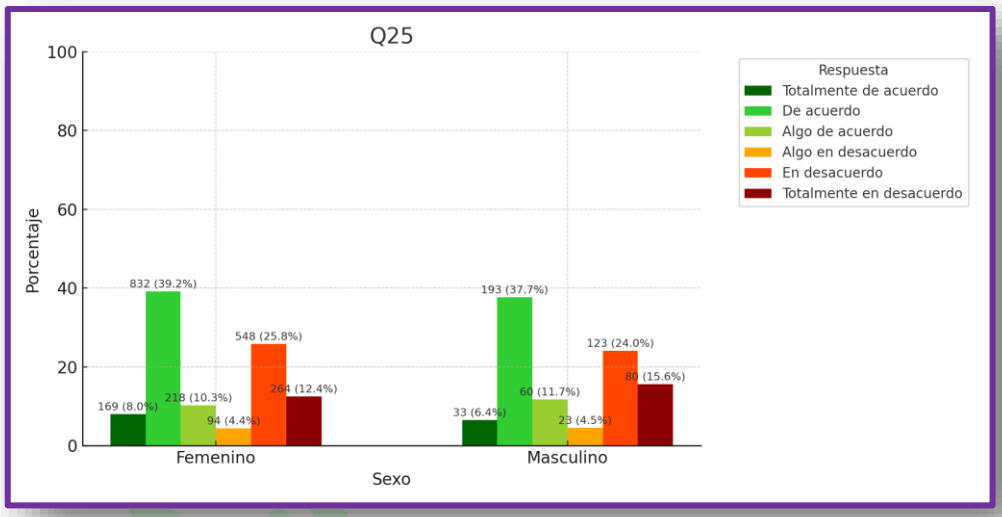
Q25.- I can identify early signs of pain in newborns.



Regarding the responses to question Q25 of the questionnaire on identifying early signs of pain in newborns, the gender distribution also appears to be heterogeneous.

8% of women “strongly agree,” 39.2% “agree,” 10.3% “somewhat agree,” 4.4% “somewhat disagree,” 25.8% “disagree,” and 12.4% “strongly disagree.” 6.4% of women “strongly agree,” 37.7% “agree,” 11.7% “somewhat agree,” 4.5% “somewhat disagree,” 24% “disagree,” and 15.6% “strongly disagree.”

More than a quarter of women and men disagreed with this statement, confirming the need to expand training in pain assessment and detection in newborns.

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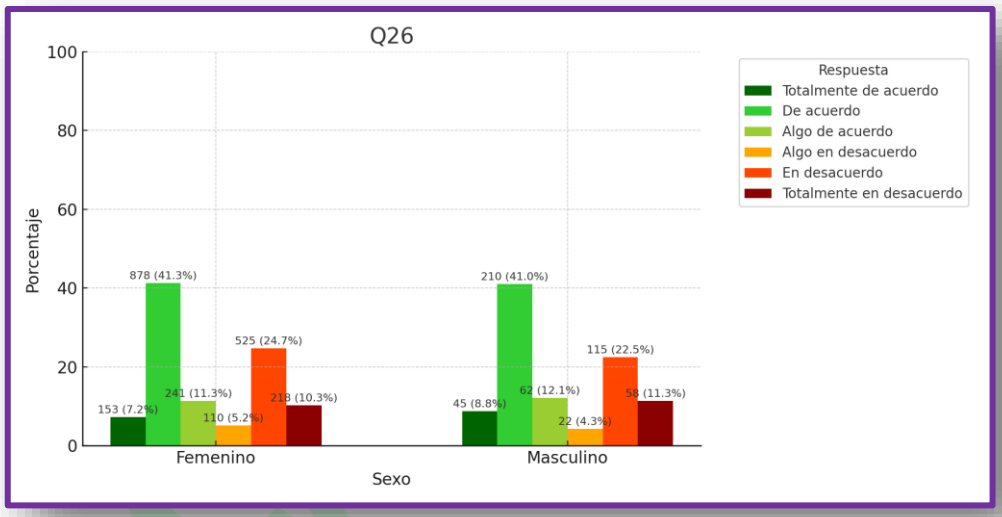
Q26.- I know how to act in the case of acute pain in children.



Regarding the findings from the responses to question Q26 about whether I know how to respond to acute pain in children, 59.8% of women say they know how to identify it, compared to almost 62% of men.

Both groups show considerable levels of uncertainty or disagreement regarding the statement that they know how to respond to acute pain in children, with 24.7% of women and 22.5% of men “disagreeing” and 10.3% and 11.3% “strongly disagreeing,” respectively.

These results are alarming, and therefore, in this sense, it is necessary to expand knowledge about detecting signs and symptoms of pain in those people who cannot express it accurately verbally or in other ways that an adult could.

Therefore, it is essential to strengthen specific training on the management of acute pain in childhood, especially regarding the evaluation of nonverbal patients, where detailed clinical observation and the use of adapted scales are key tools to ensure safe and humane care.

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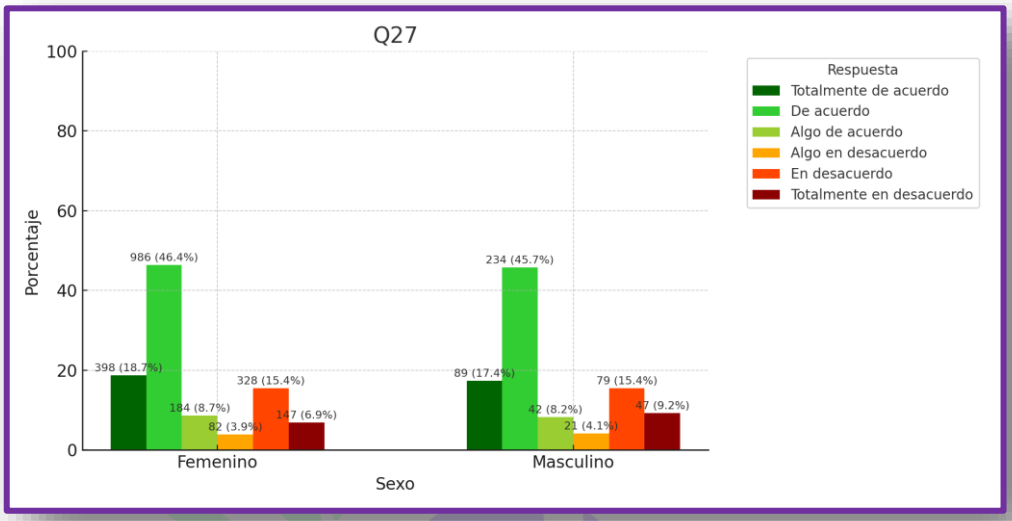
Q27.- Analgesia should be used before performing additional traumatic tests.



The vast majority of respondents, both women (46.4%) and men (45.7%), agreed with the statement that analgesia should be used before performing traumatic complementary tests that could potentially cause pain in the pediatric population. Furthermore, 18.2% of women strongly agreed with this statement, and 17.4% of men also strongly agreed.

Only 6.9% of women who responded to the questionnaire and a mere 10% of men “strongly disagreed” with this statement.

This may be related to each person's pain tolerance and perception, as well as the severity of the additional tests performed, which may influence their perception compared to what pediatric patients may experience.

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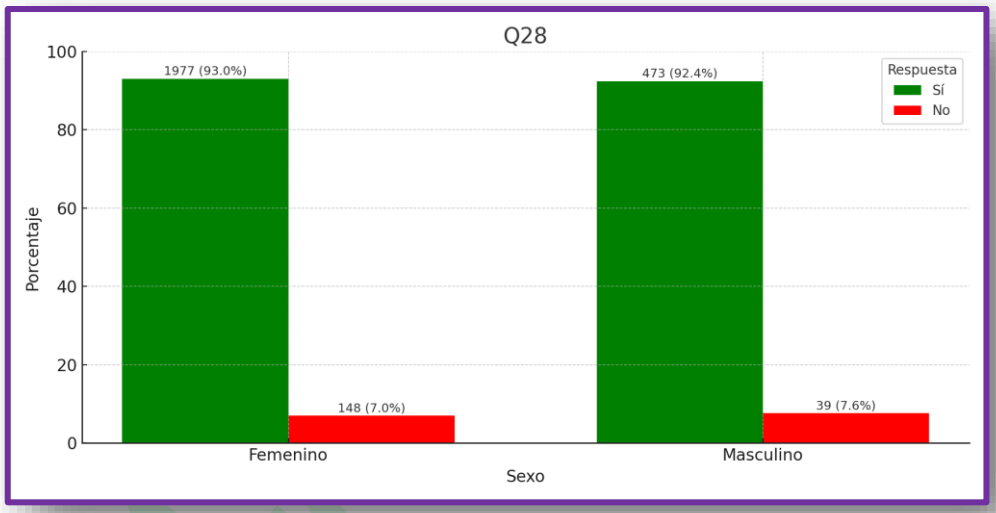
Q28.- Do children have memory of painful episodes?



Regarding question Q28 of the questionnaire, the majority of respondents, around 93% of women and men, agreed with the question posed.

This fact denotes a humanistic approach to the perception of pain suffered by children, recognizing that these people also have the capacity to remember painful episodes they experienced in childhood.

Only 7% of women and 7.6% of men expressed opposition to this statement, which may be influenced by traditional views.

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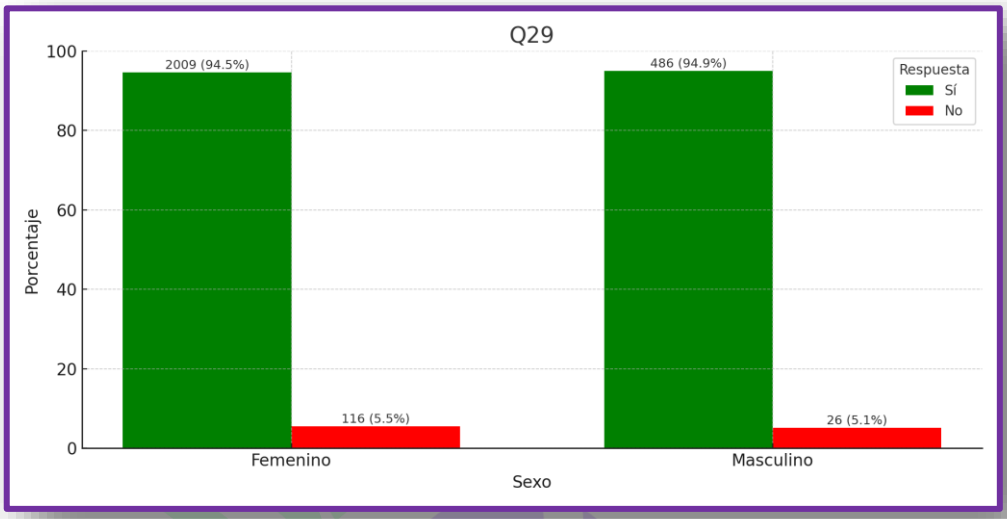
Q29.- Do you think that inadequate pain control can influence the adult personality of children?



Regarding the responses to question Q29, a large percentage of both women and men (approximately 95% of men and women) agreed with this statement, which confirms that the population has become aware of the importance of symptom control, especially pain, and its impact on the development of later adult personality.

The absence of significant differences between the sexes means that awareness of the emotional and psychological consequences that pain can have has permeated across all those surveyed.

This recognition is positive because it implies a common core knowledge essential for developing clinical practices focused on the well-being of pediatric patients, regardless of the sex of the person treating them.

Furthermore, this widespread consensus can foster greater coherence among multidisciplinary teams when designing pain management strategies in childhood. Having a common foundation of beliefs and knowledge facilitates the implementation of effective clinical protocols and guidelines. It also promotes a more empathetic and child-centered culture of care, recognizing that pain relief not only improves the present but also prevents negative consequences for future emotional development.

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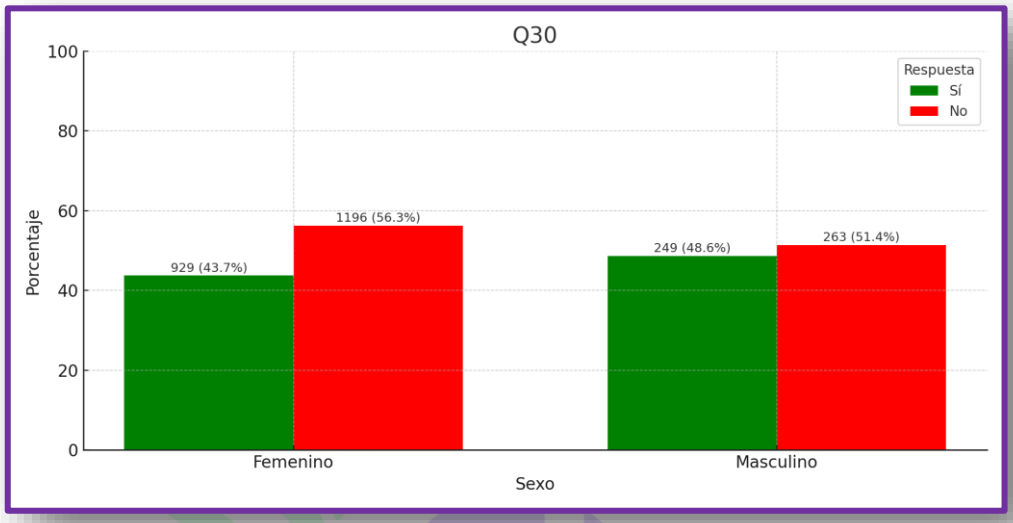
Q30.- Is pain proportional to the magnitude of the injury that causes it?



The findings in question Q30 of the questionnaire, regarding whether pain is proportional to the magnitude of the injury causing it, show that the majority of respondents, regardless of gender, believe that pain is not always proportional to the magnitude of the injury. However, men seem to be slightly more inclined to believe that there is a direct correspondence (48.6%), compared to this belief among women (less than 44%).

This finding is consistent with current evidence suggesting that pain and its intensity are not only related to the extent of the injury, but may also be influenced by a variety of additional factors, including the possibility of a potential injury that may not actually be causing pain.

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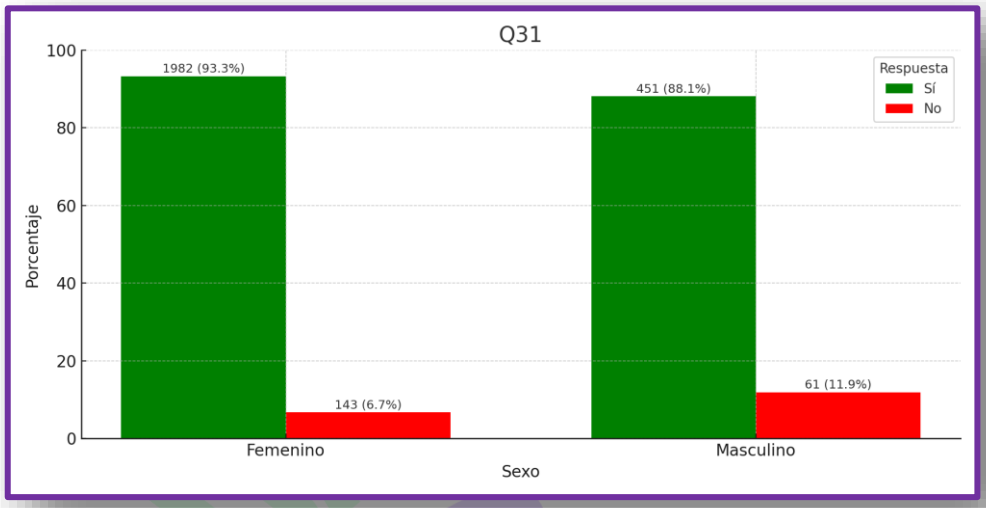
Q31.- Is it useful to explain to a 4-year-old child what you are going to do to calm him/her down?



The findings in question Q31 reflect that the majority of respondents, both men and women, agree that it is useful to explain to children what is going to be done to them.

This opinion is likely based on the fact that, in this way, these patients' anxiety and uncertainty may be reduced when they know what procedures they will undergo.

The male sector is slightly superior to the female sector in the opposition with 11.9% compared to half of the women (6.7%).

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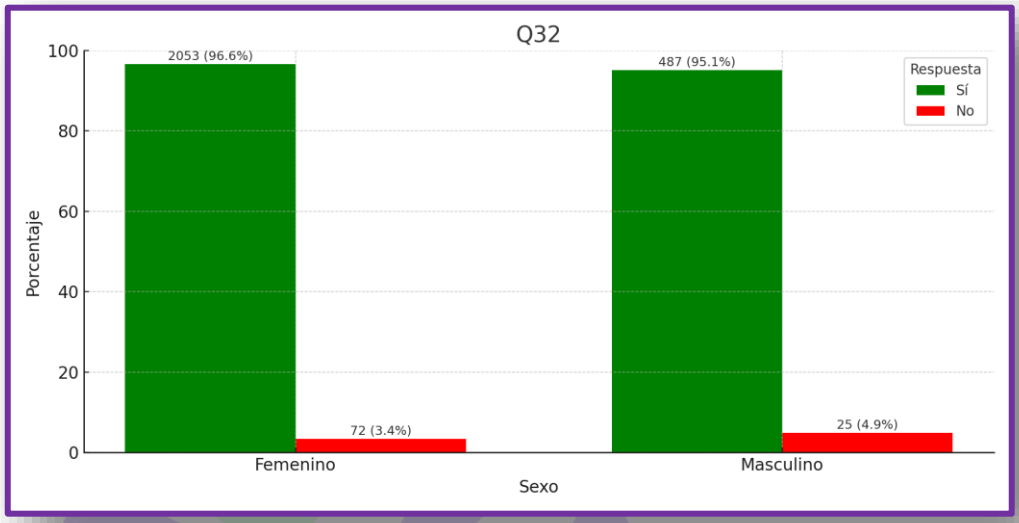
Q32.- Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?



Regarding the findings on question Q32 about whether pain interferes with children's curricular and extracurricular activities over the age of 6, the majority of respondents agreed with this statement.

This response offers the view that both women (96.6%) and men (95.1%) consider that pain can affect the daily performance of pediatric patients, preventing them from normally carrying out their daily and extracurricular activities, thus limiting their enjoyment and ability to normally carry out such everyday tasks as going to school, enjoying leisure time and playing with classmates, etc.

A total of more than 2,000 women and nearly 500 men have expressed their support for this topic, which is positive, as it demonstrates an awareness of the impact and severity of pain on the childhood experiences of pediatric patients suffering from both acute and chronic pain.

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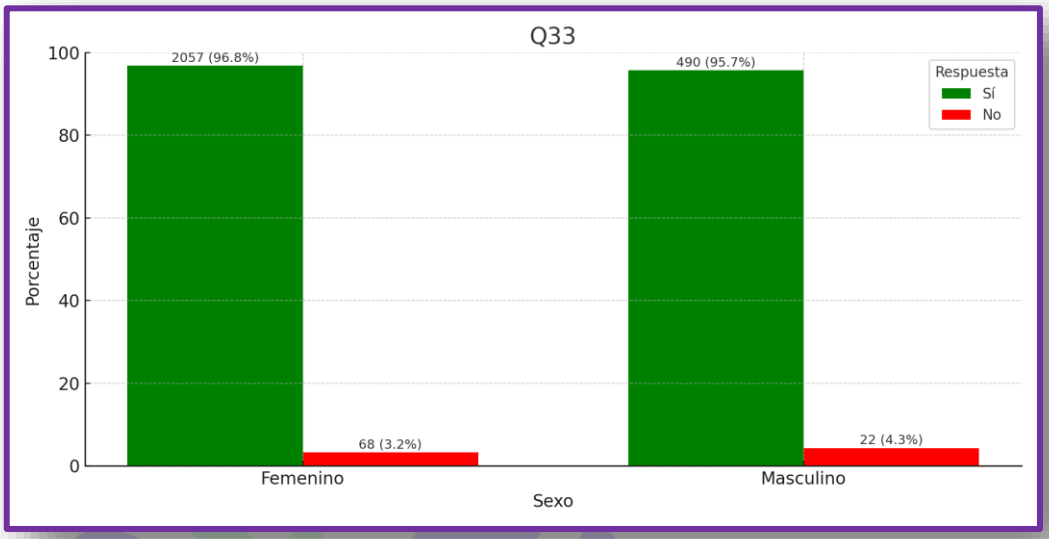
Q33.- Does pain affect the child's social interaction (peers, teachers and family)?



The findings from the responses to question Q33 reflect strong agreement with the statement that pain affects children's social interaction.

96.8% of women and 95.7% of men agreed. The fact that the level of agreement was similar across genders suggests that this idea is deeply rooted in basic knowledge about child development, regardless of the respondent's sex.

This could also reflect the influence of evidence in certain areas and the growing awareness of the consequences of prolonged pain in childhood.

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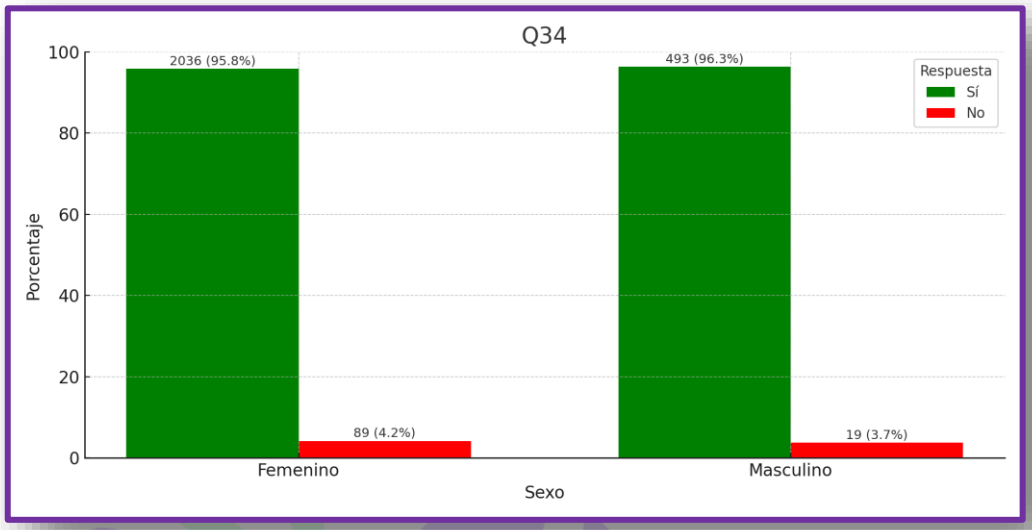
Q34.- Does pain influence a child's choice of social or recreational activities?



The findings on question Q34 show general agreement between both sexes, women and men, regarding whether pain influences the child's choice of social or recreational activities.

Both 95.8% of women and 96.3% of men agreed with this statement, reinforcing the importance of integrating a multidisciplinary approach to pediatric pain management, focusing not only on the clinical dimension but also on the emotional and social repercussions.

The unanimity of the responses underlines the need to know support strategies that allow both women and men to help children maintain their social ties and enjoy activities appropriate to their development, even in contexts of pain.

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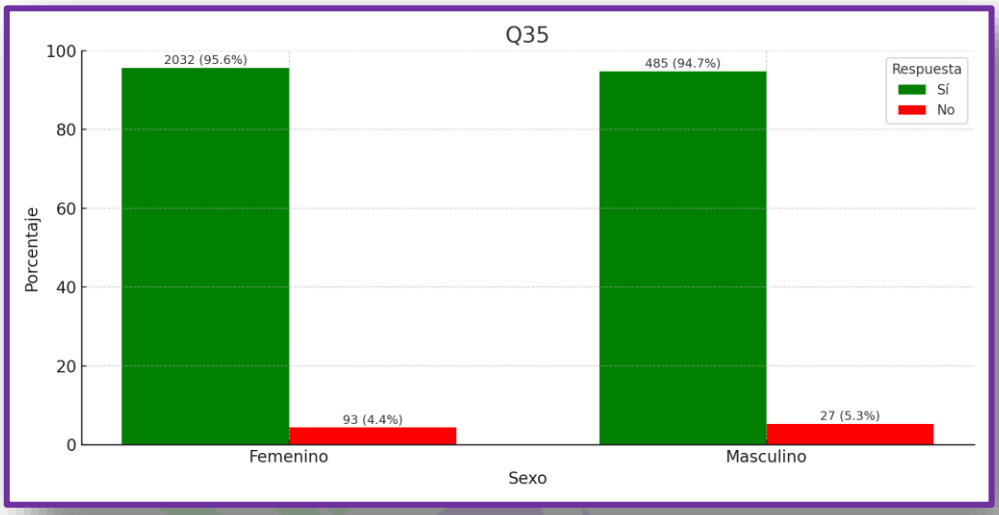
Q35.- Can pain affect children's cognitive and emotional development?



The results regarding question Q35, on whether pain can affect children's cognitive and emotional development, show that the vast majority of respondents agreed with the statement. A total of 2,032 women and 485 men agreed with the statement.

A vast majority of respondents, both women and men, recognized pain not only as a physical symptom but as a factor that impacts children's overall development. Furthermore, its influence extends beyond the physiological dimension, affecting the maturation process at the emotional, psychological, and cognitive levels, reinforcing the importance of a holistic approach to pain management in children, considering its effects on well-being and development.

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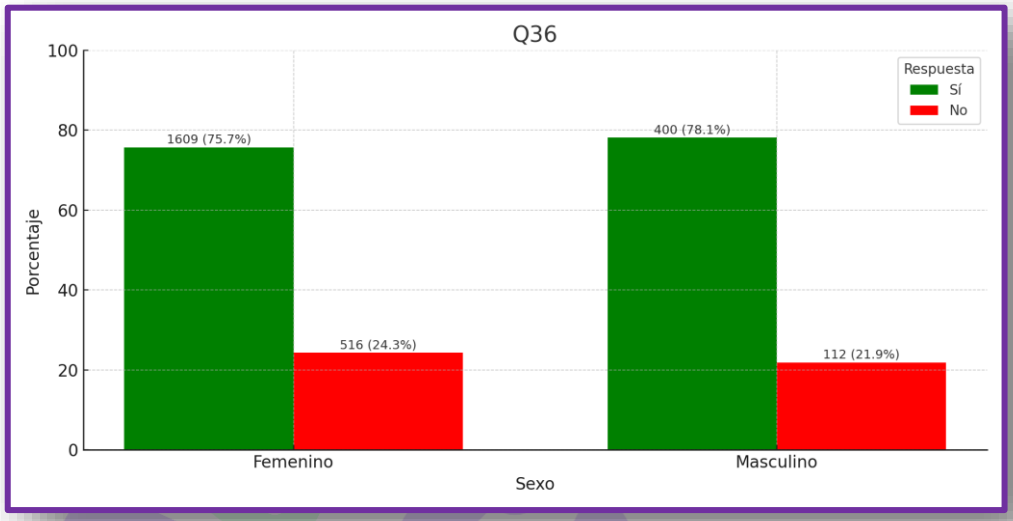
Q36.- Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?



The majority of respondents responded that they considered that the necessary analgesic measures are implemented before traumatic procedures in children (reflected in question Q36 of the questionnaire).

Men showed a slightly higher level of agreement (78.1%) compared to women (75.7%), which could suggest differences in perception or experiences in the application of pediatric analgesia.

The gender gap, although small, may be a relevant factor in assessing potential discrepancies in the implementation of pain management strategies, reflecting that women may perceive a deficiency in the proactive administration of analgesia in daily practice, perhaps due to direct exposure to the variability in the application of clinical protocols.

The majority consensus on the proactive use of analgesia is encouraging, but the significant percentage who do not consider it sufficient highlights the need to strengthen protocols, training, and impact assessments on the quality of care.

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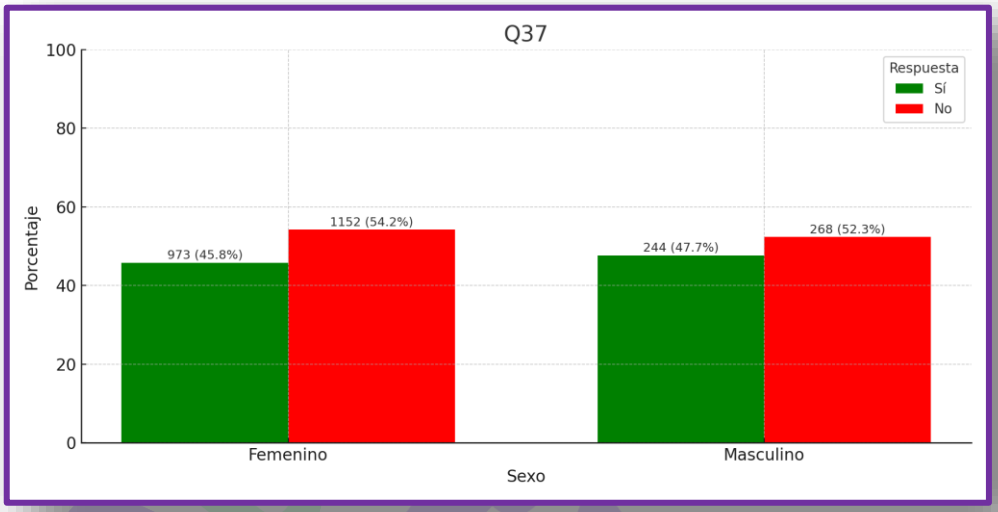
Q37.- Is the training received on acute pain management in children adequate to identify, evaluate and treat this pain effectively?



The results of question Q37 show that more than half of women (54.2%) and men (52.3%) disagree with the statement that the training received on acute pain management in children is adequate to identify, assess and treat this pain effectively.

The gender gap is minimal, suggesting that dissatisfaction with training is a cross-cutting issue. However, the tendency for men to perceive it as slightly more adequate could indicate a difference in professional experience or level of exposure to childhood pain management situations.

This finding again underscores the critical need to strengthen training in pediatric pain management.

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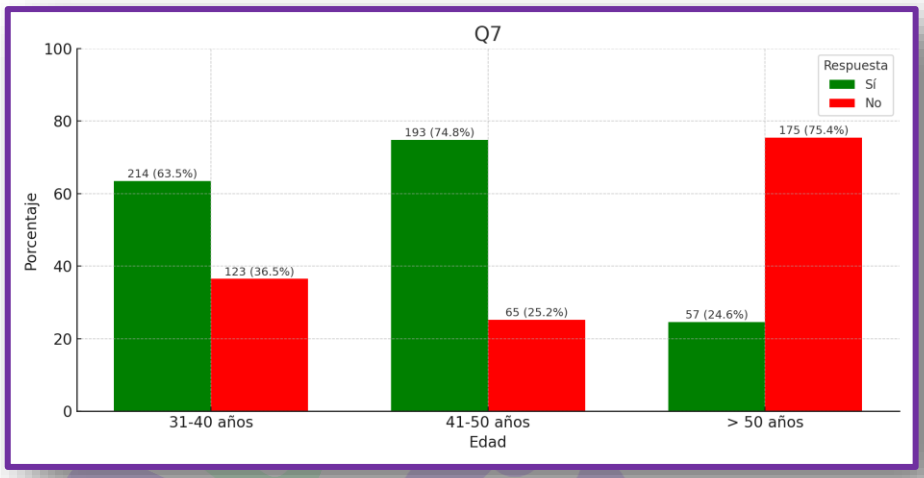
b. Age

Q7.- Do you have minor children?



Question Q7 of the questionnaire addresses the sociodemographic data of those who completed the questionnaire, specifically those responsible for minor children.

There is a direct relationship between age and the likelihood of having minor children. The age group with the highest proportion of children is the 31-40 age group (63.5%) and the 41-50 age group (74.8%). The group with the lowest proportion of minor children is the over-50 age group.

Younger respondents may have more experience raising children, which may influence their sensitivity to pediatric pain. This personal experience may make them more proactive in relieving children's pain compared to age groups without minor children or their same-age peers without minor children.

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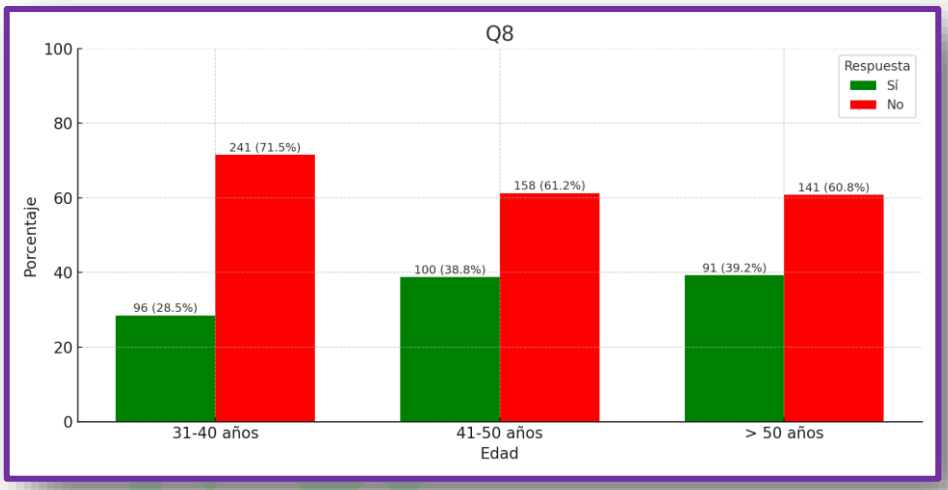
Q8.- Do you have elderly people in your care?



Question Q8 relates to the sociodemographic data of the respondents, specifically to their responsibility to care for older adults.

The burden of caregiving increases with age. The age group with the highest proportion of older people in their care is the over-50 age group (39.2%), the 41-50 age group (38.8%), and the 31-40 age group (28.5%).

Middle-aged professionals have a double challenge in being responsible for childcare and eldercare (as can be seen in the previous question).

This may influence their perceptions of the importance of humane care and pain management in different age groups, especially in pediatrics.

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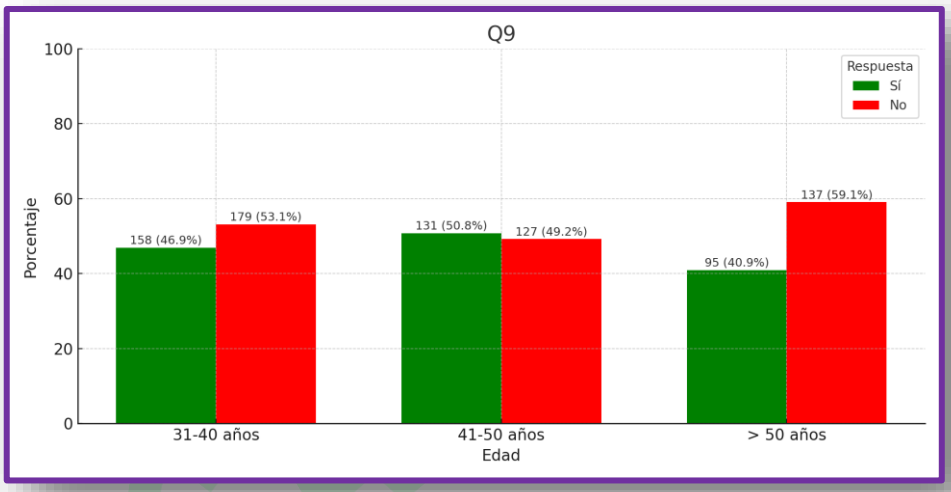
Q9.- Do you have dependents in your care?



The results of question Q9 show that 46.9% of people in the 31-40 age group specifically have dependents. In the other age groups, 50.8% of people between the ages of 41-50 and 40.9% of those over 50 report having dependents as well.

Respondents with caregiving responsibilities may show greater empathy for children's suffering and may be influenced when prioritizing effective analgesia strategies. Those without dependents (53.1% of those aged 31-40, 49.2% of those aged 41-50, and 59.1%) may also have a more biomedical perspective that focuses on the assessment of clinical signs and fails to understand the subjectivity of each child.

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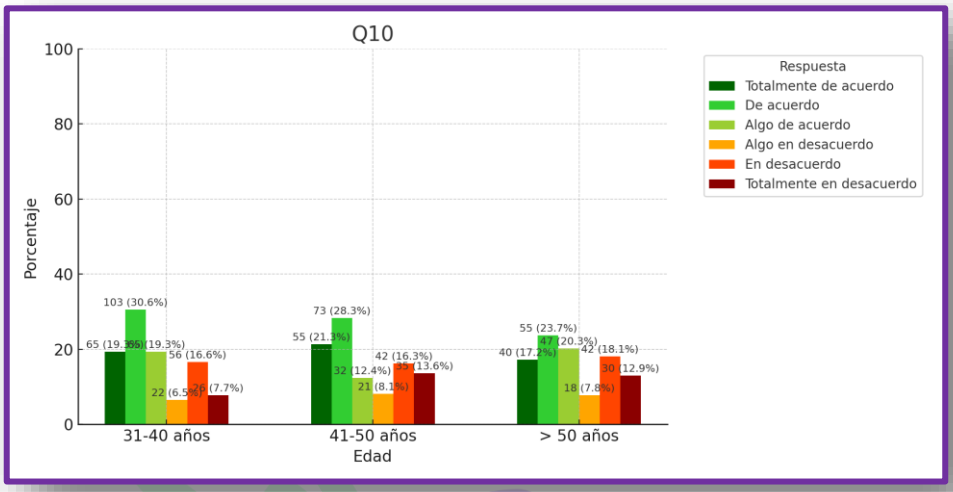
Q10.- To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.



Most respondents in the younger age group seem to agree with the statement in Q10 that "a statement that a child is in severe pain should be verified by observing changes in vital signs," while the responses in the over-50 age group show a more diverse distribution of opinions.

Within the over-50 age group, opinions are divided into 17.2% “strongly agree,” 23.7% “agree,” 20.3% “somewhat agree,” 7.8% “somewhat disagree,” 18.1% “disagree,” and 12.9% “strongly disagree.”

Most respondents still partially agree with this statement, although younger groups tend to recognize indicators beyond changes in vital signs, which is positive, demonstrating that young professionals are integrating more holistic approaches to pain assessment.

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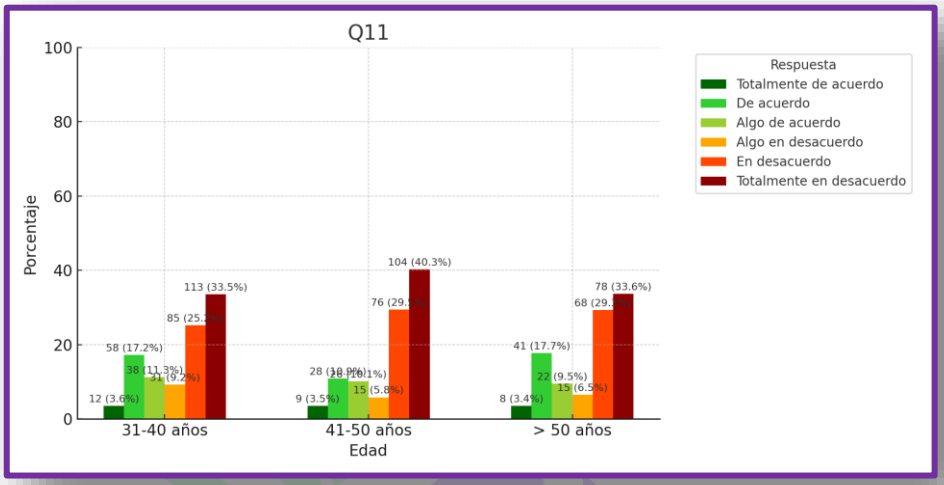
Q11.- Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.



The rejection of the statement in Q11, “because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences,” is consistent across all age groups, indicating a deep understanding of the impact of pain on child development.

33.5% of people aged 31-40 "strongly disagree," as do 40.3% of participants in the 41-50 age group and 33.6% of those over 50.

However, younger respondents may have more deeply rooted beliefs in myths about pain perception in infants, with the highest percentage of all three age groups in the “agree” or “strongly agree” position.

The results point to a strong tendency to demystify newborns' ability to experience pain, considering that children under 2 years of age do feel and can remember painful experiences.

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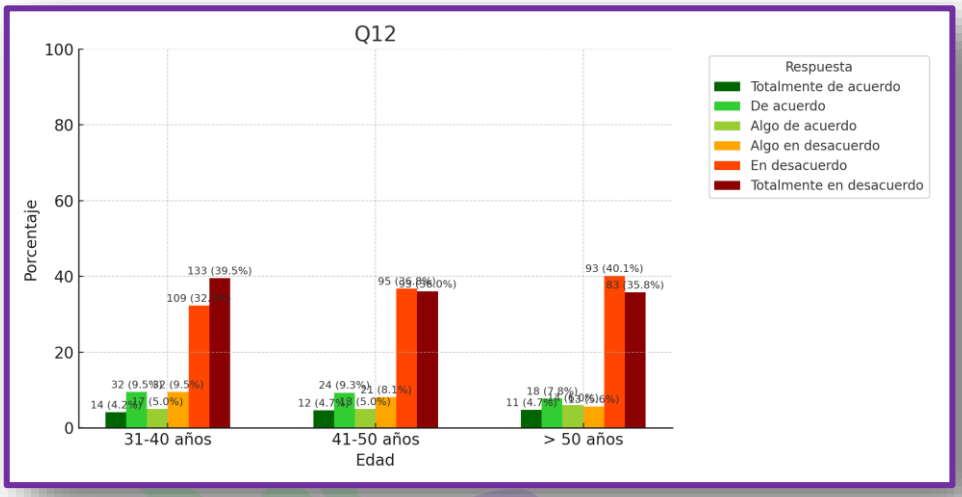
Q12.- Similar stimuli in different children produce the same intensity of pain.



The disagreement on question Q12 that “similar stimuli in different children produce the same intensity of pain” leads to consensus since more than half of the participants across all age groups “strongly disagree” or “disagree” with the statement.

This may mean that all respondents understand that pain perception can vary depending on individual factors and not just the intensity of the painful stimuli applied or experienced.

To achieve this, it is necessary to use individualized scales to adapt treatment according to the personal perception of each pediatric patient and to assess it based on each patient's ability to express themselves.

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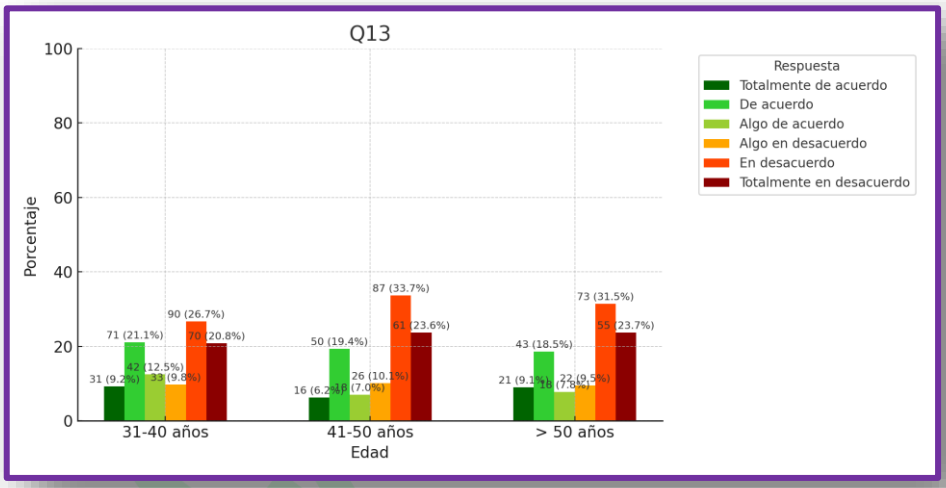
Q13.- Children under 6 months of age cannot tolerate opioids for pain relief.



Regarding question Q13 about whether “children under 6 months of age cannot tolerate opioids for pain relief,” the responses were unevenly distributed.

In the 31-40 age group, there was the greatest agreement with the statement, with 21.1% saying "agree," while in the over-50 age group, only 18.5% gave this response.
Regarding the disagreement position, the age group with the highest proportion of "strongly disagree" respondents was those aged over 41. It is noteworthy that the 41-50 age group had the highest proportion of "disagree" respondents of the three age groups. Furthermore, they had the lowest percentage of "strongly agree" respondents, with 6.2% of participants in this age group compared to 9.2% of those aged 31-40 and 9.1% of those over 50.

The results reflect a generational gap in opioid use, as professionals aged 31-40 tend to believe that opioids are not tolerable for children under 6 months of age, while this idea is more widely rejected by older adults.

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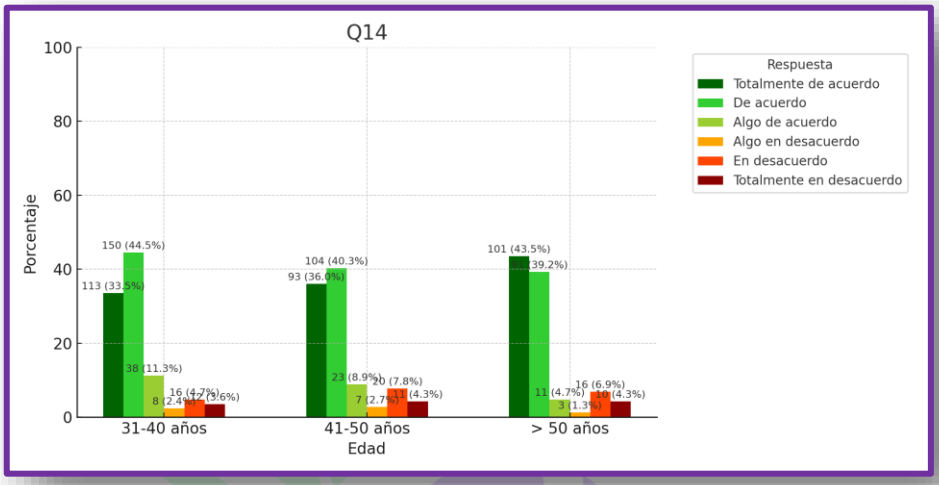
Q14.- After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.



Responses to question Q14, regarding whether "after the recommended initial dose of analgesics, subsequent doses should be individualized according to patient response," reflect unanimous agreement across all age groups. Although it is notable that in the older age group of those over 50 years of age, the percentage who "strongly agree" is 43.5%, compared with 33.5% among those in the 31-40 age group and middle-aged patients (36%). This means that across all age groups, there is broad support for individualized pain management in the pediatric population.

3.6% of voters aged 31-40, 4.3% of those aged 41-50, and the same percentage of those over 50 are opposed to this idea.

The widespread agreement regarding the statement “after the recommended initial dose of analgesic, subsequent doses should be individualized according to the patient's response” demonstrates a strong clinical consensus on the importance of tailoring analgesic treatment to each pediatric patient.

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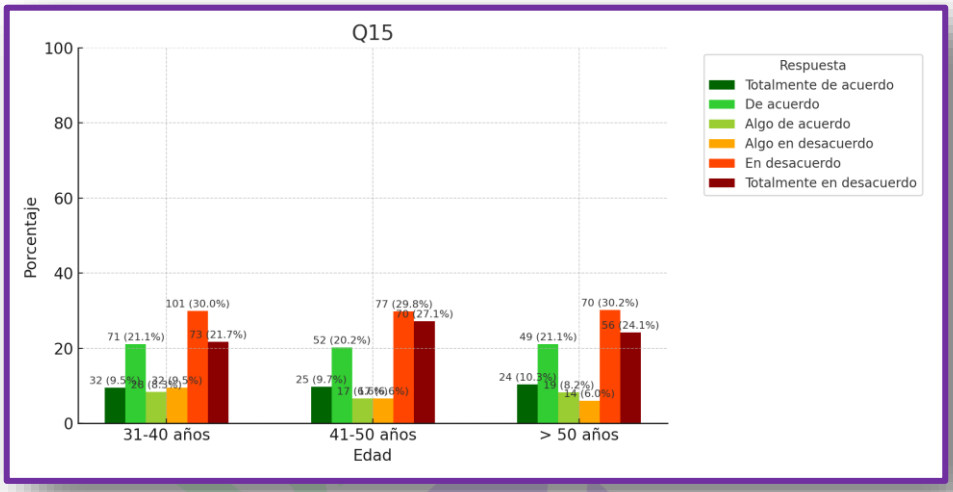
Q15.- It is advisable to use non-pharmacological pain interventions independently, rather than simultaneously with pain medications.



Regarding the responses to Q15 about “non-pharmacological pain interventions are recommended independently, rather than in conjunction with pain medications,” the responses are unevenly distributed.

Within the 31-40 age group and the over-50 age group, there is greater acceptance of the statement, while the 41-50 age group has the highest percentage of people who "disagree," suggesting a generational difference in the appreciation of non-pharmacological approaches.

Possible explanations for the differences include greater reliance on complementary therapies at the extremes of the age groups, resistance to this in the middle-aged group, and differences in clinical practice and the observation of successful cases in addressing pain without resorting to drug therapies.

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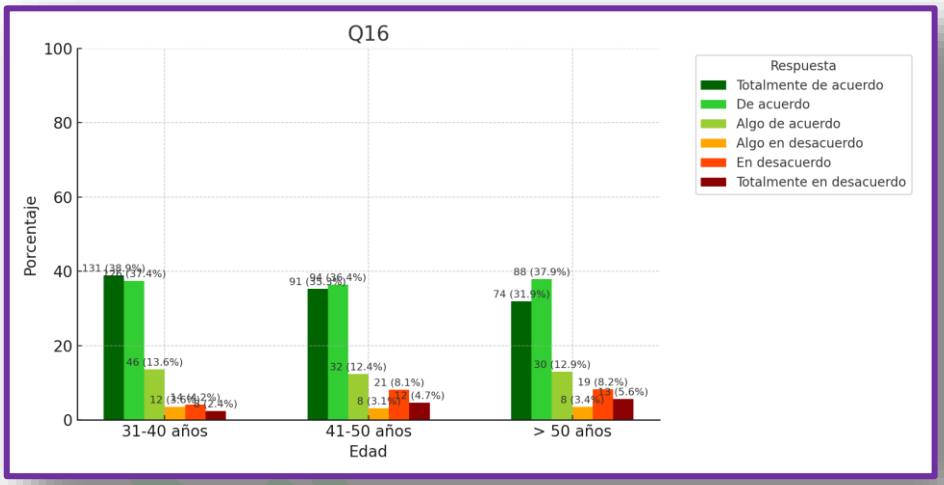
Q16.- Childhood pain is a personal experience influenced by biological, psychological and social factors.



The findings presented in question Q16 show high agreement with the statement across all three age groups.

Specifically, the group with the highest proportion of "totally agree" is the 31-40 age group (38.9%), while the lowest is the age group over 50 years old (31.9%).

The relationship between these percentages and the growing trend of adding the biopsychosocial model to pain training may explain this high proportion among people in the younger age group, who may have received more up-to-date or recent training in line with current scientific evidence.

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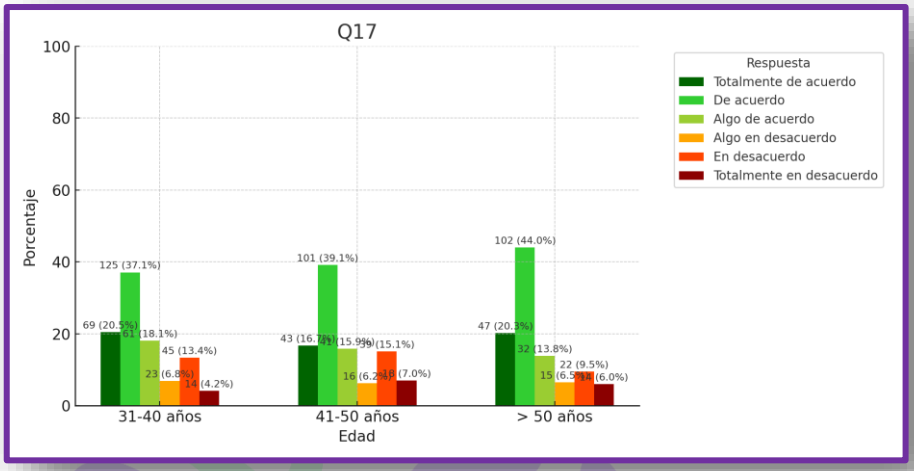
Q17.- Non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for the control of mild to moderate pain, but are rarely useful for more severe pain.



The findings around Q17 of the questionnaire, which states that "non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for the control of mild to moderate pain, but are rarely useful for more severe pain," lead to a majority opinion in favor of "agreement" across the three age groups.

The response "strongly agree" was voted by 20.5% of people aged 31-40, 16.7% of those aged 41-50, and 20.3% of those over 50.

This represents a high general acceptance of the use of non-pharmacological techniques and supports them in the management of mild to moderate pain.

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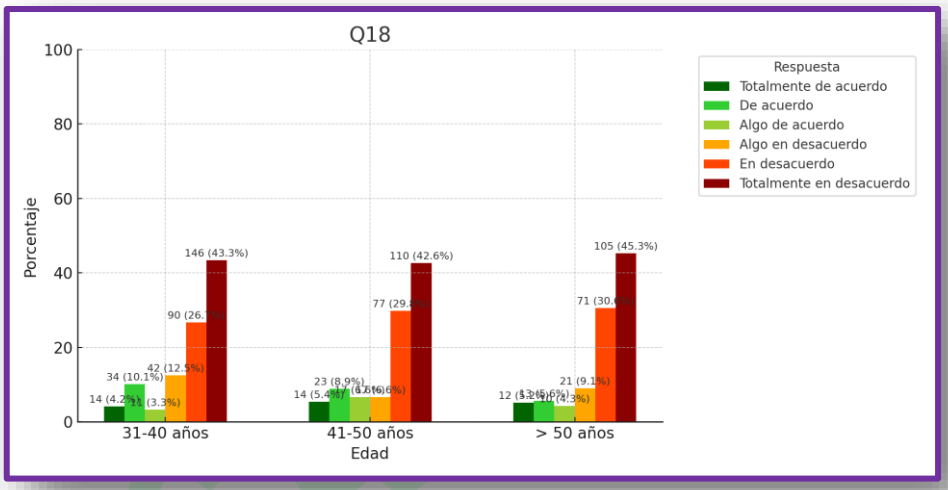
Q18.- During painful procedures, parents should not be present.



Regarding the findings in Q18 of the questionnaire, regarding whether "parents should not be present during painful procedures," disagreement is widespread across all age groups.

43.3% of people aged 31-40 said they "strongly disagree" with this statement, as did 42.6% of people aged 41-50 and 45.3% of those over 50.

However, there is a small percentage in all groups, less than 11%, who "agree" with this statement.

These results reflect a strong opposition to the exclusion of parents from these types of events, regardless of age. The idea of excluding parents during these procedures is rejected, whether due to their clinical experience or personal beliefs.

In previous decades, parental presence tended to be limited to prevent them from interfering in procedures. However, it is now known that parental support improves the pediatric experience and is not a direct reason for hindering the medical team's performance.

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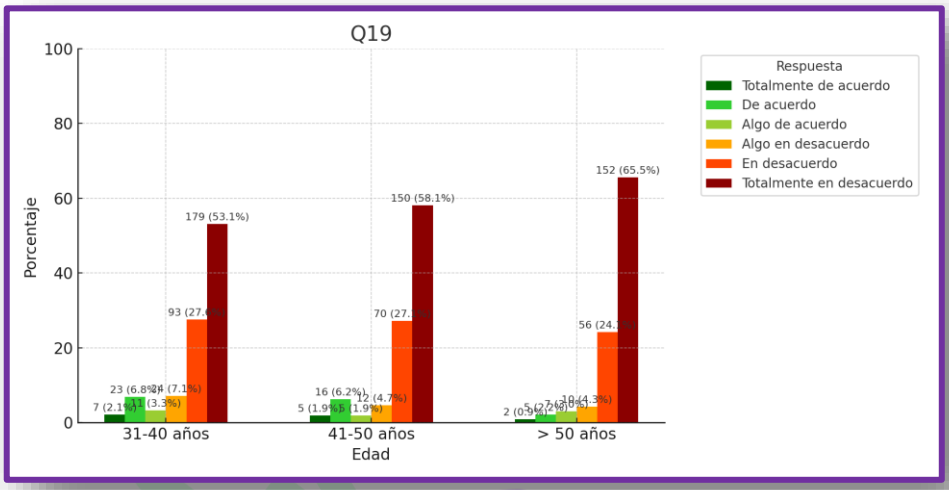
Q19.- Children with pain should be encouraged to endure the pain as much as possible before resorting to pain relief measures.



Regarding the responses from those who completed the questionnaire, in question Q19, which states "Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief," the option "strongly disagree" was the most common across all three age groups. The age group with the highest proportion of this option was those over 50 years of age, with 65.5% of the votes, followed by the 41-50 age group with 58.1%, and finally, 53.1% of those between 31 and 40 years of age.

This widespread rejection of the statement that “children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief measures” increases with age, probably because these individuals have witnessed the negative consequences of untreated pain on numerous occasions, which increases the belief that it should be relieved without delay.

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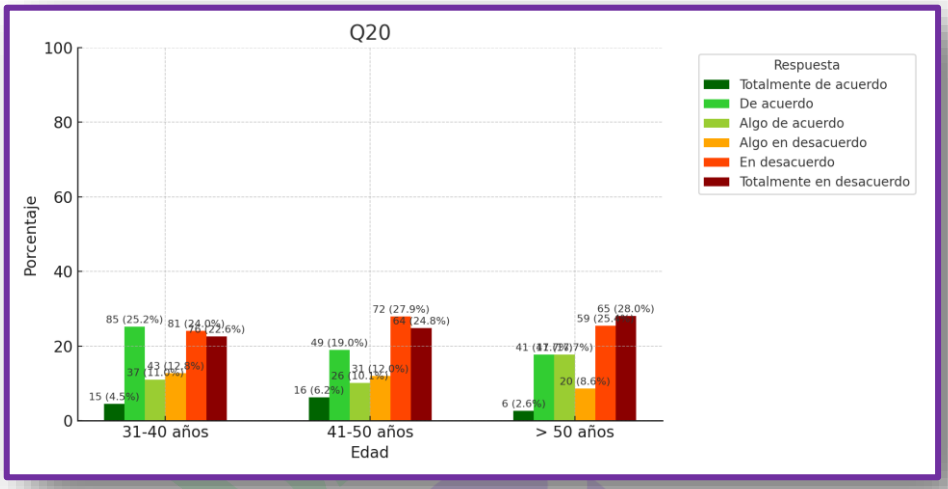
Q20.- Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.



The responses to question Q20 of the questionnaire, which asks whether “giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine whether the pain is real,” show a very heterogeneous distribution of responses across the three age groups.

The most frequently cited options within the 31-40 age group were "agree" (25.2%), "disagree" (24%), and "strongly disagree" (22.6%). Within this age group, the distribution varies, with the highest-voted option being "disagree" (27.9%), followed by "strongly disagree" (24.8%), and "agree" (19%). Finally, within the more mature age group, the most frequently voted option was "strongly disagree" (28%), followed by "disagree" (approximately 25%).

The diversity of responses can be observed, although there is a general tendency toward disagreement, particularly among older age groups; while there is greater acceptance among younger people, who may continue to perceive the use of placebo as a valid diagnostic tool.

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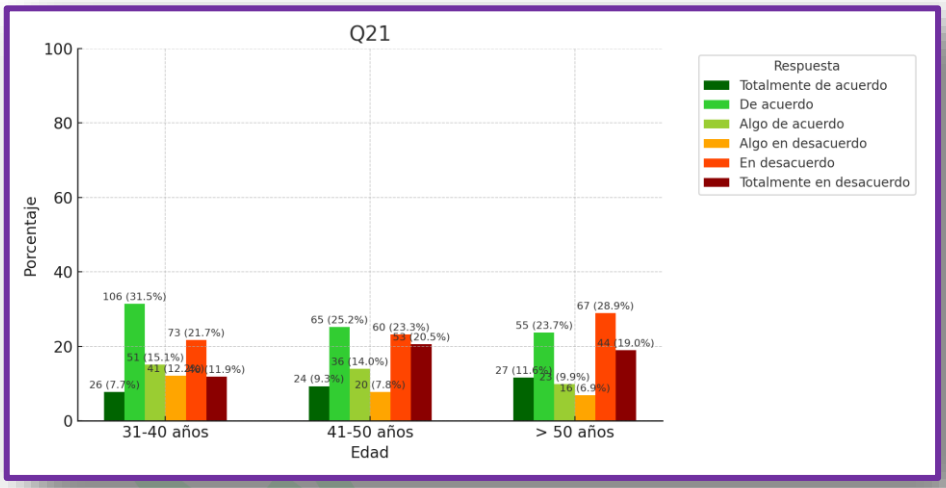
Q21.- Opioids for the treatment of acute pain can cause addiction in pediatric patients.



Responses to Q21 of the questionnaire on “Opioids for the treatment of acute pain can cause addiction in pediatric patients” also showed a polarized trend between agreement and disagreement, but in this case, the results pointed primarily toward simple “agreement” and simple “disagreement,” not toward the entire opinion.

Only 7.7% of people in the 31-40 age group voted “strongly agree” and 11.9% “strongly disagree.” Within the next age group, 9.3% voted “strongly agree” and 20.5% “strongly disagree.” In the last age group, 11.6% voted “strongly agree” while 19% “strongly disagree.”

There is a clear bias in responses toward intermediate options rather than extreme positions. This may be due to professionals' greater perception of risk and a tendency to discredit the direct relationship between opioids and pediatric addiction.

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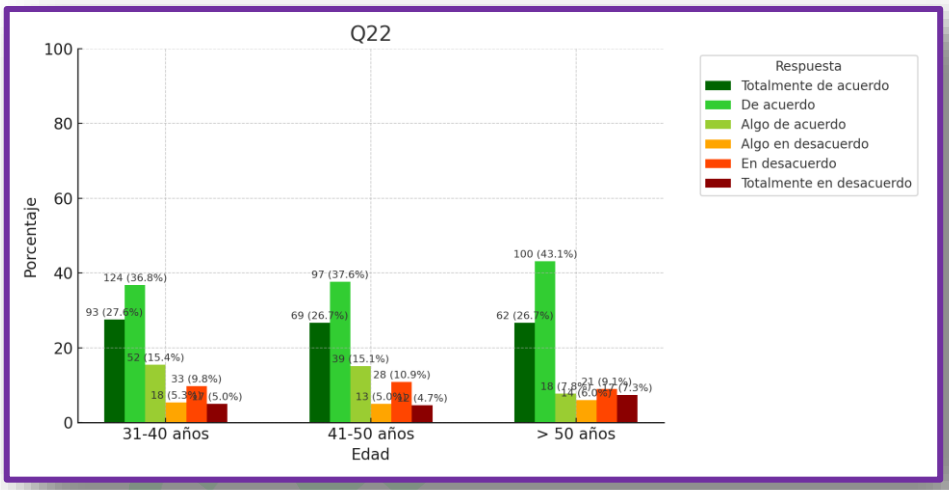
Q22.- I know and apply pain assessment scales in children.



The results of question Q22 on whether “I know and apply pain assessment scales in children” show general agreement across age groups.

This graph reflects that nearly 30% of respondents in each age group who completed the questionnaire "strongly agreed" with the statement, suggesting that most respondents recognize the importance of using standardized scales to assess and evaluate pain in children and newborns.

The fact that there is a generally agreed position, and that this is similar across the three age groups, indicates that this notion has been central to the training received by all groups and that it is considered a skill that is either essential for clinical practice or that is successfully acquired during clinical practice.

Despite this, there is a small fraction of people who are unsure about the statement (5% of people in the 31-40 age group, 4.7% in people aged 41-50 years and 7.3% of those over 50 years), which indicates that there is a potential opportunity to train these individuals in the use of tools to assess childhood pain.

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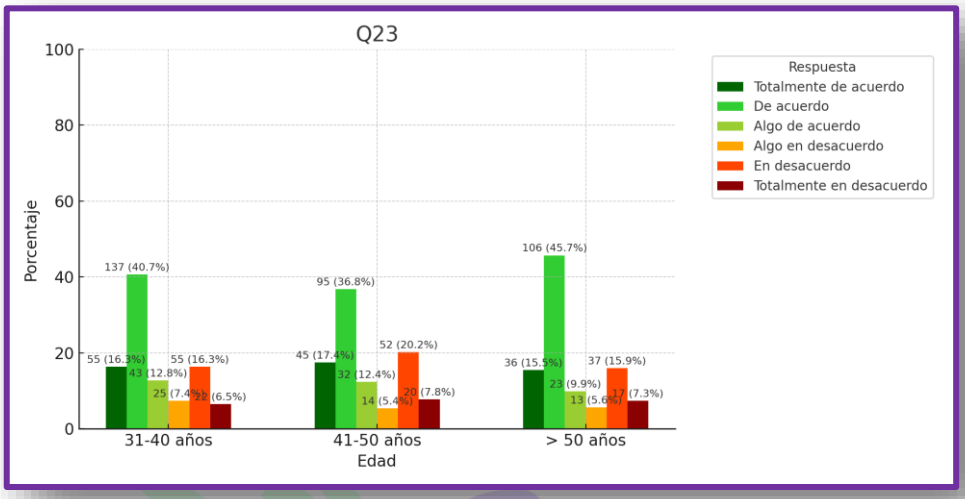
Q23.- I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)



The findings obtained in question Q23 show that the most voted option for the statement " I know and apply the WHO linear scale of pain treatment levels in children (analgesia scale)" was "Agree." Specifically, 40.7% of respondents between 31 and 40 years of age, 36.8% of those between 41 and 50 years of age, and 45.7% of those over 50 years of age selected this option.

These results demonstrate a significant level of agreement with the statement, suggesting that the health professionals participating in the study have a good understanding and application of this tool, which is essential for the appropriate treatment of childhood pain according to WHO guidelines.

The degree of knowledge of how to apply this analgesic scale could be linked to accumulated professional practice, which is why the age group with the greatest agreement regarding this statement is those over 50 years of age.

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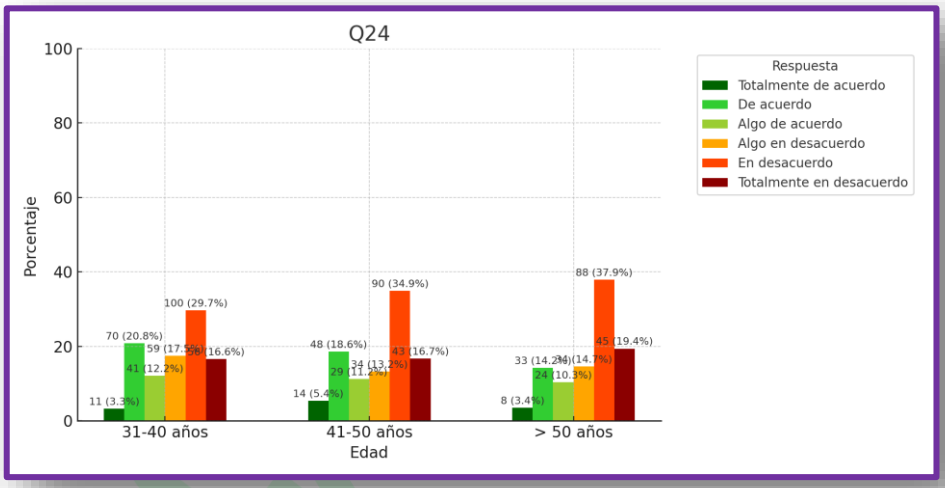
Q24.- Training on acute pain in children and its management is sufficient.



Regarding question Q24 of the questionnaire, the results are mainly inclined toward disagreement. 16.6% of people aged 31-40 "strongly disagreed," 16.7% of people aged 41-50 disagreed, and 19.4% of those over 50 disagreed.

This pattern suggests a critical or disagreeing tendency toward the statement that "training on acute pain in children and its management is sufficient." Although not entirely in the majority, it is significant and reflects a shared view across all three age groups.

More than 30% of the three groups expressed disagreement with the question, indicating a need to review the processes for training and adopting new pediatric care guidelines.

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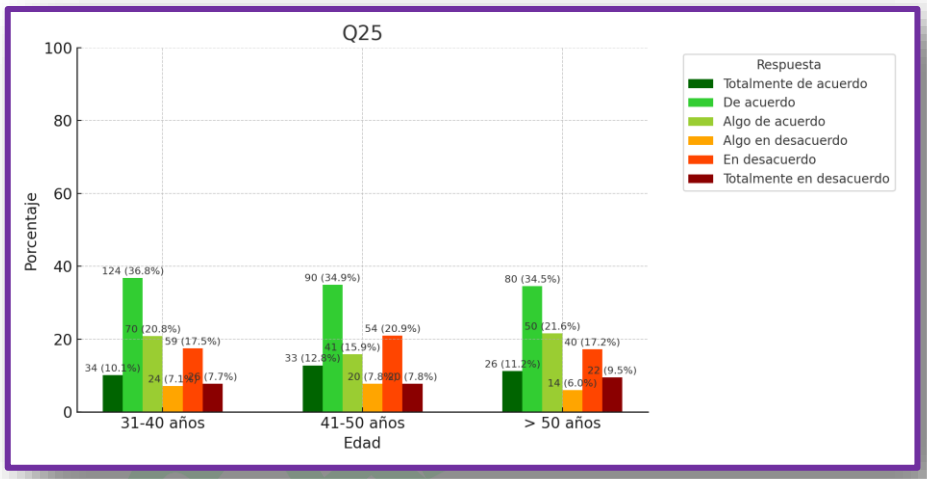
Q25.- I can identify early signs of pain in newborns.



The findings from the responses to question Q25 of the questionnaire, segmented by age, show a very similar distribution across the different groups. This question states, "I know how to identify early signs of pain in newborns."

The most repeated position is "agree," with 36.8% of people in the 31-40 age group, 34.9% in the 41-50 age group, and 34.5% of those over 50. The "strongly agree" position was voted by 10.1% of people in the first (youngest) age group, 12.8% of those aged 41-50, and 11.2% of those over 50.

Regarding disagreement, 17.5% of people aged 31-40 disagreed with the statement, 20.9% of people aged 41-50, and 17.2% of those over 50.

Despite the homogeneity of the results across groups, the percentages reveal that the middle-aged group has the highest level of confidence, with the highest percentage of "strongly agreeing," while the group with the lowest percentage in this position is the 31-40 age group. This suggests that accumulated experience or education can create differences in the level of confidence and actual knowledge that cannot be reflected in the overall percentages without segmenting by age.

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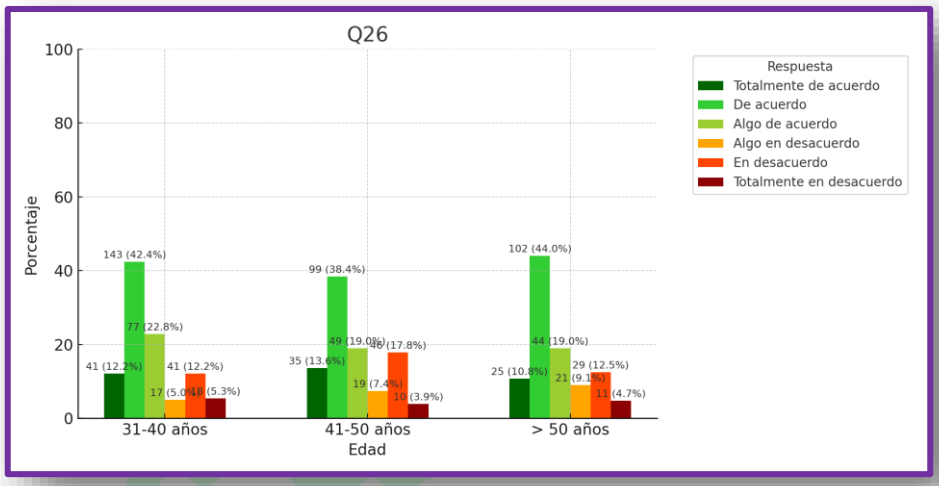
Q26.-I know how to act in the case of acute pain in children.



Regarding question Q26 on whether "I know how to act in the face of acute pain in children," the results reflect that, within the 31-40 age group, 12.2% of participants "totally agree" and 42.4% "agree," while only 12.2% "disagree" and 5.3% "totally disagree."

On the other hand, within the 41-50 age group, 13.6% of people in the group "strongly agreed" and 38.4% "agreed," while 17.8% "disagreed" and 3.9% "strongly disagreed."

Finally, within the over-50 age group, 10.8% of respondents "strongly agreed" and 44% "agreed" with the statement, while only 4.7% "strongly disagreed."

These results reflect a general trend toward agreement with the statement about knowing how to respond to acute pain in the pediatric population, with slight variations by age. The 41-50 age group showed a higher percentage of disagreement (17.8%), which could indicate greater self-criticism or awareness of limitations. In contrast, those over 50, although with a lower proportion of "strongly agree" responses, showed less total disagreement, which could reflect greater accumulated confidence.

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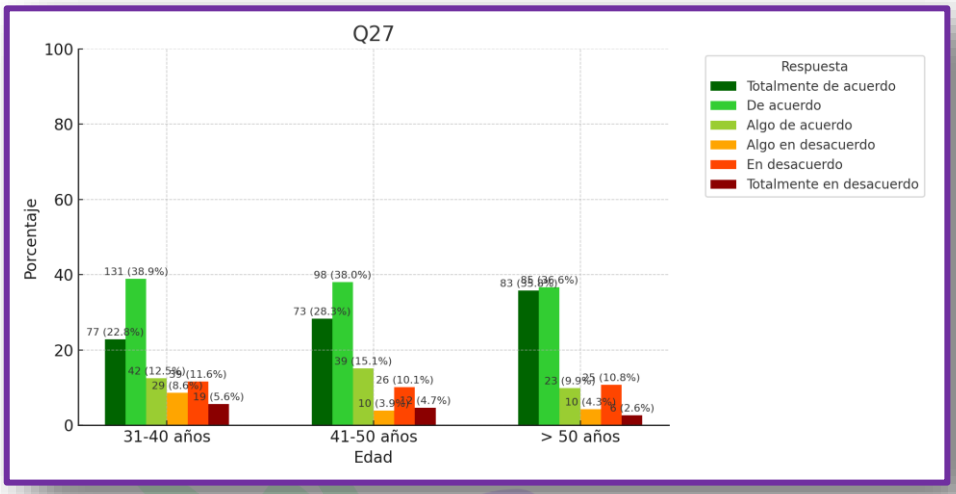
Q27.- Analgesia should be used before performing additional traumatic tests.



The findings from the results of question Q27 “analgesia should be used before performing additional trauma tests” show that the majority trend is toward “agree” or “strongly agree” across all groups.

The group with the highest percentage of "strongly agree" was the over-50s, with 33.8% of participants belonging to this age group, while the 31-40 age group had the lowest percentage in this option, at 22.8%. Within the former group, 12.5% "somewhat agree," 15.1% of the 41-50 age group, and only 2.6% of those over 50 said they "strongly disagree" with the statement offered by this question.

The results of question Q27 reflect a general consensus on the need to use analgesia before traumatic tests, although with notable differences in the intensity of agreement depending on age. The over-50 age group stands out with 33.8% in "strong agreement," which could be attributed to greater sensitivity acquired through clinical experience or an evolution in childhood pain perception over their careers. In contrast, the 31-40 age group shows the lowest percentage in this category (22.8%), which could suggest less exposure to established practices or a training that is still developing.

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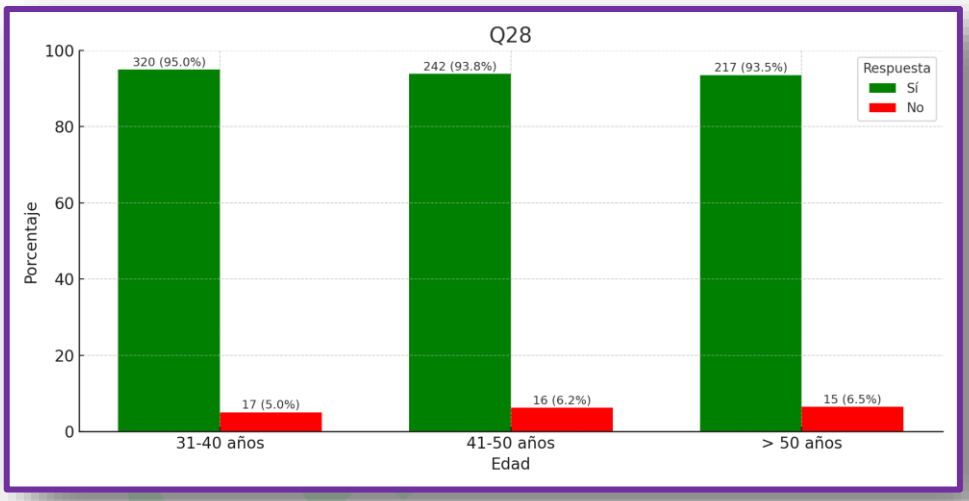
Q28.- Do children have memory of painful episodes?



The breakdown of question Q28 of the questionnaire, which asks, "Do children have memory of painful episodes?", shows almost identical results across the three age groups. These results reflect a positive trend that creates a favorable trend toward humanizing pain care for children, as pain was often underestimated in the past, especially in newborns.

Currently, it has been observed that more than 90% of participants in the age groups of 31-40 years (95%), 41-50 years (93.8%) and those over 50 years (93.5%) agreed with this statement.

This raises awareness and understanding among participants across age groups that children are not only capable of experiencing pain and painful episodes, but also of retaining memories of these episodes, which can persist throughout their lives.

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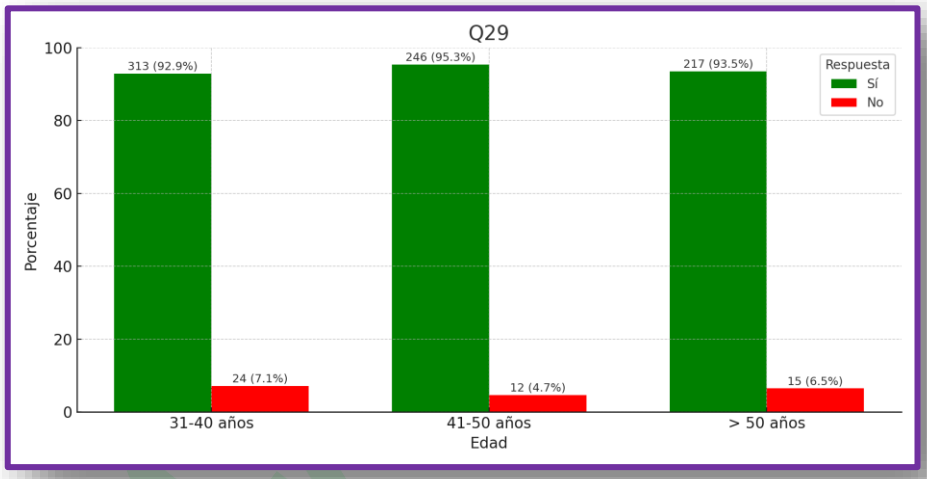
Q29.- Do you think that inadequate pain control can influence the adult personality of children?



The age-disaggregated results for question Q29 on "Do you think inadequate pain control can influence children's adult personality?" reflect majority agreement with this statement.

Only 7.1% of people in the first age group (31-40 years), 4.7% of those aged 41-50, and 6.5% of those over 50 disagreed with this question.

This result indicates a widespread awareness of the profound impact that childhood experiences, especially those related to pain, can have. It is recognized that pain not only affects the person at the time of its occurrence but can also leave psychological, emotional, and neurobiological marks that influence a child's development.

These effects can be temporary, manifesting as changes in behavior or mood, but also permanent, affecting pain perception, stress response, and even the configuration of certain brain structures.

In light of the results, and considering that more than 90% of respondents across all age groups emphasize the importance of sensitive and humane pediatric care that prioritizes pain prevention and management from the earliest stages of life.

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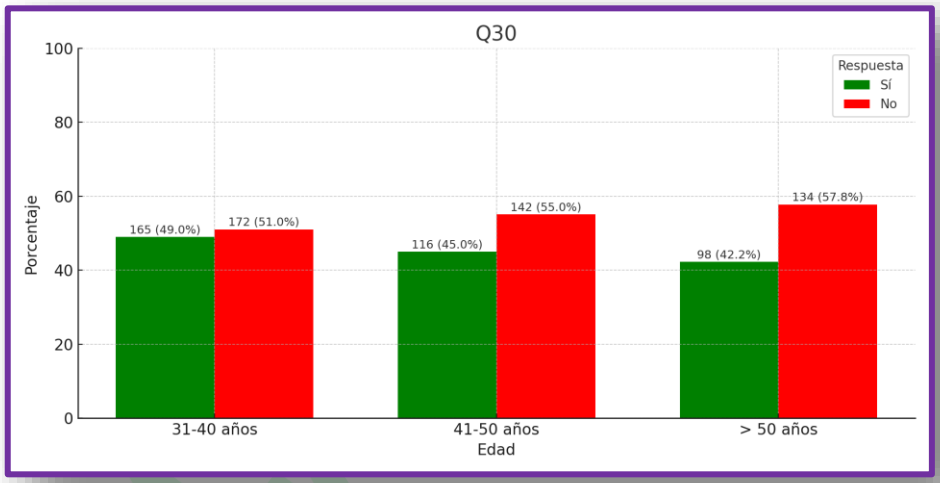
Q30.- Is pain proportional to the magnitude of the injury that causes it?



The results for question Q30 show differences between the different age groups, since within the first segment of 31-40 years, the distribution seems to be divided into “agreement” (49%) and “disagreement” (51%), while in the proportion of 41-50 years, a higher percentage are in “disagreement” with 55% of participants in the group.

This difference becomes even more consistent within the over-50 age group, where “disagreement” is present in almost 58% of the group's participants.

Question Q30, which asks, "Is pain proportional to the magnitude of the injury that causes it?", generates debate because it challenges a common belief that doesn't always correspond to clinical reality.

Pain is a subjective experience influenced by multiple factors, such as emotional, neurobiological, contextual, and emotional factors, among others, so it does not necessarily bear a direct relationship to the objective severity of an injury.

The tendency toward disagreement that increases with age could reflect greater experience and understanding of the multifactorial nature of pain, as opposed to a more reductionist view that may be present in professionals with fewer years of practice. This suggests that knowledge about pain evolves with clinical experience and continuing education.

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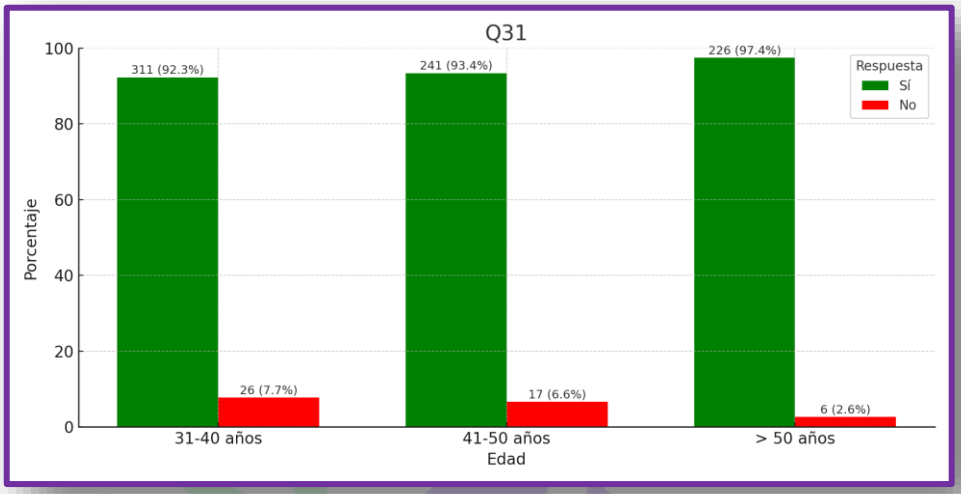
Q31.- Is it useful to explain to a 4-year-old child what you are going to do to calm him/her down?



The age-segmented results for question Q31, "Is it helpful to explain to a 4-year-old what you're going to do to calm them down?" reflect widespread agreement among participants of all ages.

The results conclude that 292.3% of participants in the 31-40 age group agreed with the question, 93.4% of those in the 41-50 age group, and 97.4% of those over 50 agreed.

This consensus demonstrates a shared understanding of the importance of age-appropriate communication in the context of pain and anxiety management in children. Explaining medical procedures, even to young children, is perceived as an effective strategy for reducing fear and promoting a more positive and collaborative experience during healthcare.

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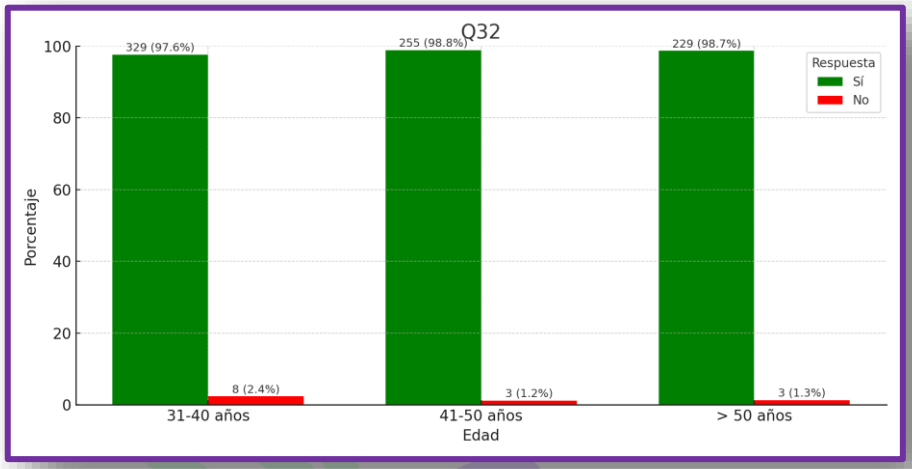
Q32.- Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?



In question Q32, “Does pain in children interfere with curricular and extracurricular activities in children over 6 years of age (school, games, etc.)?” there is also general agreement across the three age groups.

97.6% of people aged 31-40 agreed with the statement, 98.8% of those aged 41-50, and 98.7% of those over 50 agreed. These responses reflect a widely shared perception of the negative impact pain can have on children's daily lives.

The results of question Q32 show almost unanimous agreement across age groups that pain in children over 6 years of age interferes with their curricular and extracurricular activities.

The results demonstrate a widespread awareness that pain can significantly affect children's functional and social functioning. Beginning at age 6, children must attend school, participate in sports or artistic activities, and establish more complex social relationships, all of which can be limited if pain is not managed appropriately.

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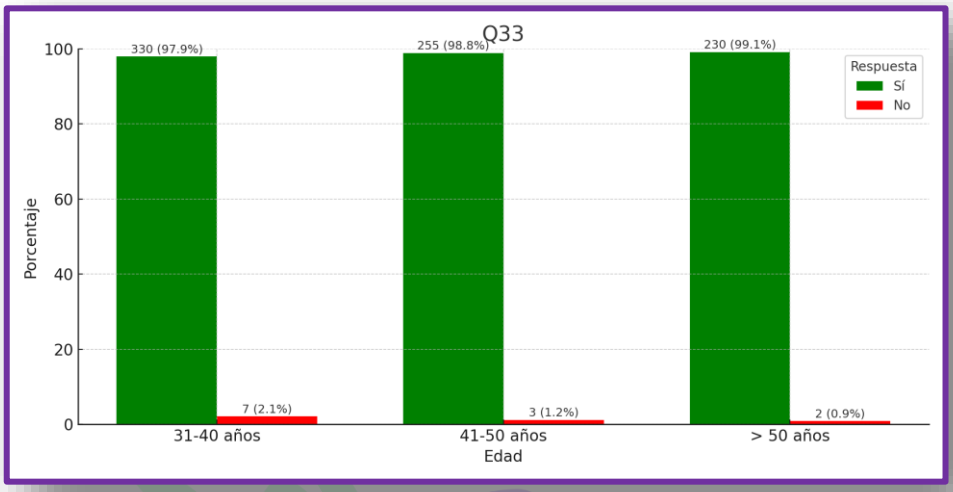
Q33.- Does pain affect the child's social interaction (peers, teachers and family)?



There is also widespread agreement on question Q33, which asks whether "Does pain affect a child's social interaction (with peers, teachers, and family)?" It can be seen that even in the over-50 age group, less than 1% of participants disagreed with this statement (reported by 0.9%). In the age group with the greatest disagreement with the question, 2.1% of participants in the 31-40 age group disagreed.

These data are directly linked to the previous and subsequent questions, as they reflect how pain, depending on its intensity and duration, can significantly influence the way children relate to their environment: from their peers and teachers at school to members of their family unit and network.

Therefore, it is essential that all those involved in a child's daily life be aware of and trained in how pain can alter their behavior, mood, and participation in activities, thus affecting their overall development.

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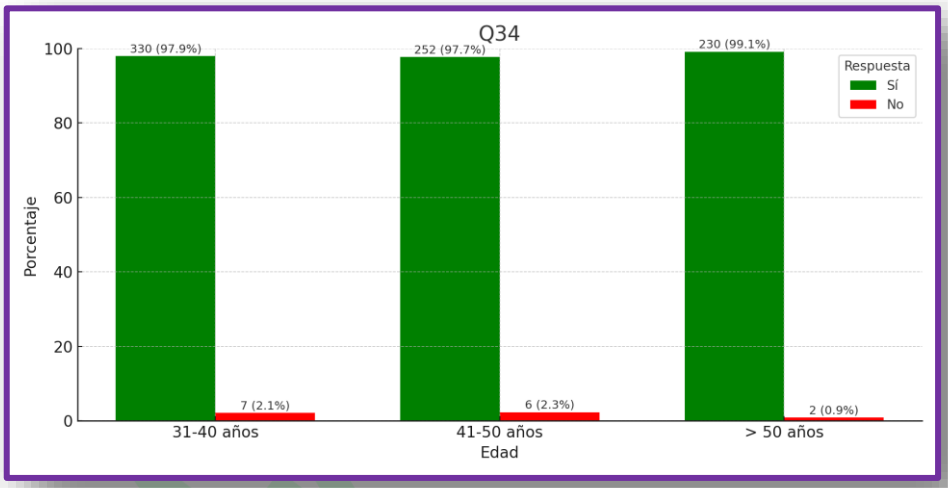
Q34.- Does pain influence a child's choice of social or recreational activities?



The results of question Q34, “Does pain influence a child’s choice of social or recreational activities?”, reflect widespread agreement across the three age groups.

The age group with the greatest agreement is those over 50 years old, with 0.9% of participants belonging to this age group disagreeing, while the age group with the greatest number of people in agreement with the question is those 41-50 years old, with 97.7% agreeing.

However, these minimal differences could reflect not only experience but also variations in training or exposure to specific clinical situations. Ultimately, although the assertion is broadly supported, the depth of agreement may be influenced by generational or professional factors that warrant further exploration.

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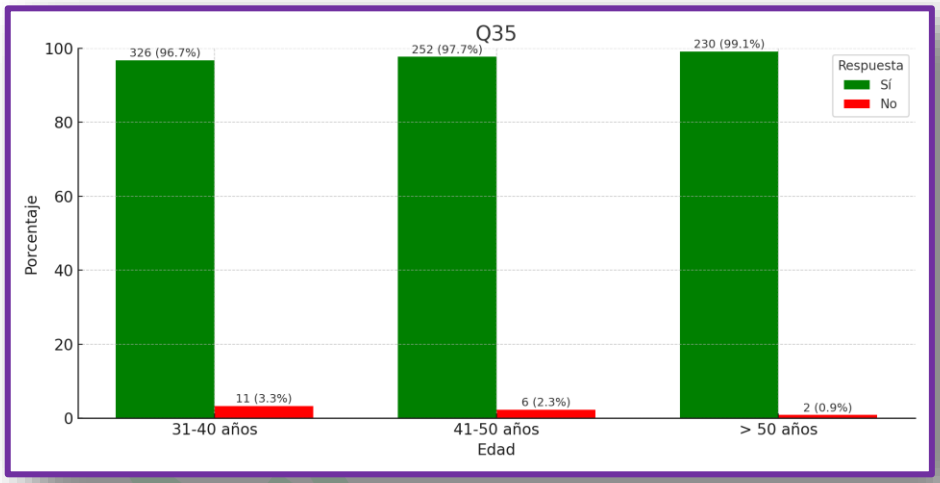
Q35.- Can pain affect children's cognitive and emotional development?



The age-segmented results for question Q35 on “Can pain affect children’s cognitive and emotional development?” reflect majority agreement across all three age groups.

Approximately 96% of people in the 31-40 age group agreed, 97.7% in the 41-50 age group, and 99.1% in the over-50 age group.

These results reinforce the growing awareness of the profound implications of pain on child development, beyond the physical level. The high level of agreement across all three age groups, especially among those over 50 (99.1%), suggests a widespread understanding that pain not only affects a child's immediate well-being but can also have long-term consequences for their cognitive and emotional development.

This perception underscores the importance of timely and appropriate intervention in the painful experience, not only to alleviate suffering but also to protect the child's overall development.

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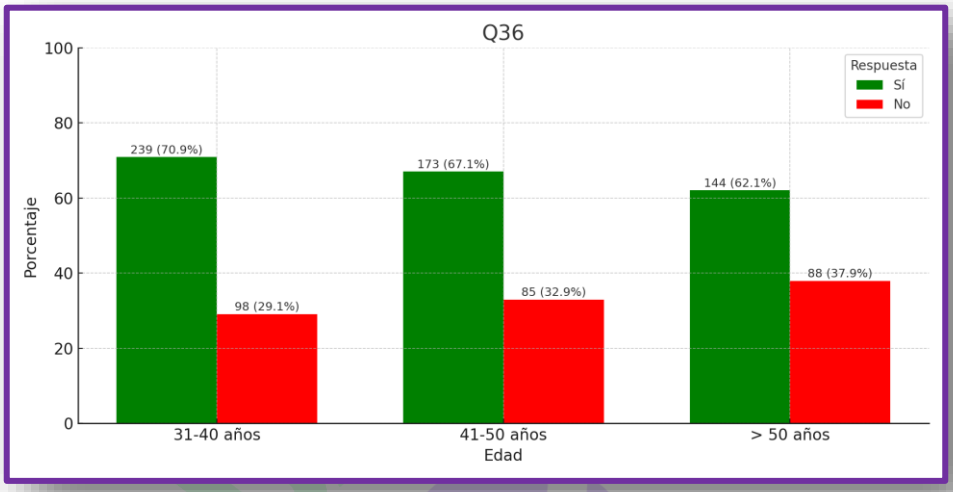
Q36.- Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?



The results of question Q36, which asks whether “are appropriate analgesic measures proactively taken before performing potentially traumatic complementary procedures or diagnostic tests in children?”, show a clear tendency toward the affirmative, although with significant differences between age groups.

The 31-40 age group has the highest percentage of affirmative responses (70.9%), followed by the 41-50 age group with 67.1%, and finally, the over 50 age group with 62.1%.

Although the "yes" response predominated in all cases, the progressive decrease in the percentage with increasing age could indicate generational differences in the perception or implementation of proactive analgesic practices. This pattern suggests that younger professionals may be more aware of or up-to-date on pain management protocols in pediatric settings.

On the other hand, the fact that a significant percentage of all groups, especially 37.9% in the over-50s section, responded "no" demonstrates that barriers or inconsistencies still exist in the application of pain prevention measures. This raises the need for ongoing training and unification of clinical criteria regarding pain management in children.

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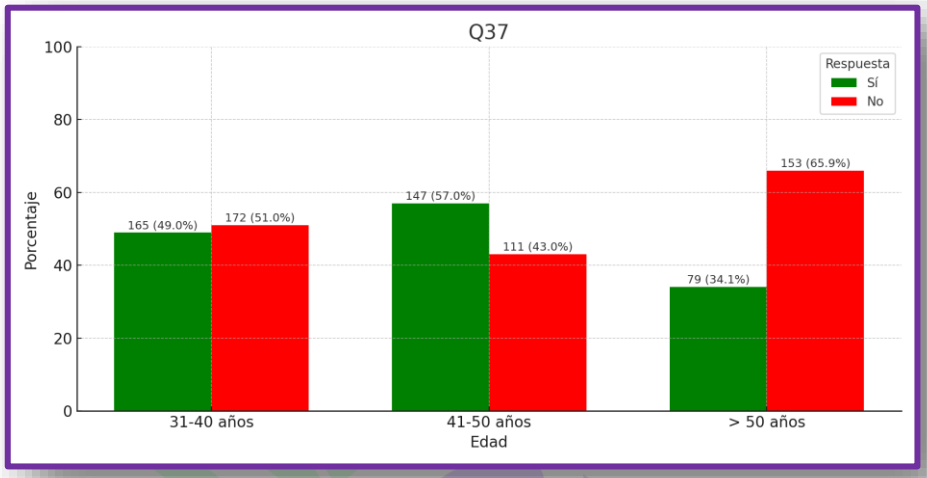
Q37.- Is the training received on acute pain management in children adequate to identify, evaluate and treat this pain effectively?



Question Q37 addresses "Is the training received on the management of acute pain in children adequate to identify, assess, and treat this pain effectively?" This is essential for understanding the perceptions of these individuals, segmented by age, regarding their opinion on whether training is adequate in the area of addressing pain in children.

It can be observed that in the 31-40 age group, 49% "agreed" with the statement, while 51% rejected it. Within the next age group, 57% "agreed," while 43% "disagreed" with the statement. In the over-50 age group, 65.9% of participants in that age group disagreed with the statement.

These results reflect a diverse and, to some extent, worrying perception regarding the training received on the management of acute pain in childhood. While the younger age groups (31-50 years) show a relatively balanced split between agreement and disagreement, it is noteworthy that in the over-50 age group, disagreement clearly predominates (65.9%).

This pattern can be interpreted as an indication that, although there has been progress in including pediatric pain content in the most recent training, training gaps persist, especially among professionals with more experience. This underscores the need for continuous training programs that guarantee consistent and effective training for all professionals, regardless of age or years of experience, thus ensuring optimal and pain-sensitive care for children.

c. Continent

Q7.- Do you have minor children?

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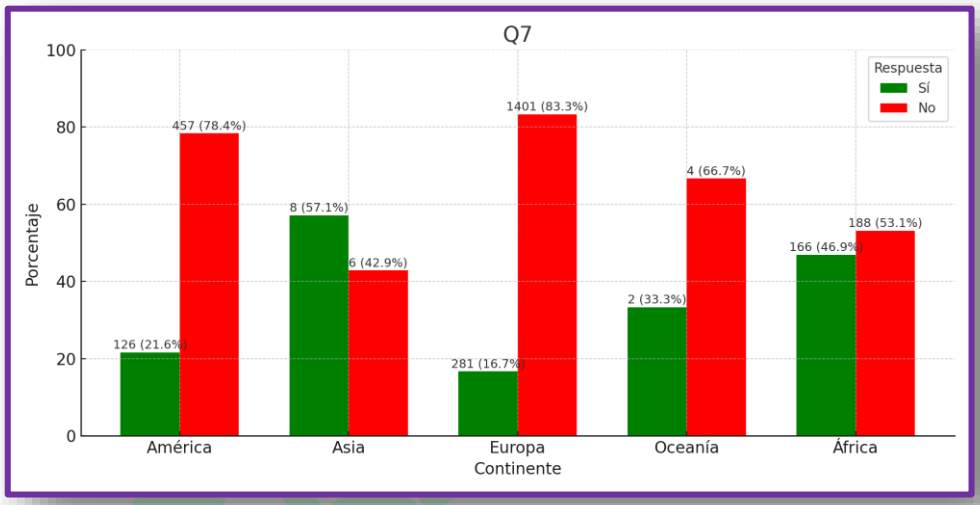

The results in the table show that the number of health personnel without minor children is higher than that of those who do. Looking at the ratio by continent, in Europe, the number of health personnel without minor children is almost five times higher than that of those who do in the same continent. In contrast, in the Americas, the number of childless personnel is 3.6 times higher than that of those with minor children. In Oceania, Africa, and Asia, the ratio is 1 to 2.

The results of the cross-tabulation between continent and the number of children under the age of majority among healthcare personnel show an interesting pattern that merits analysis from a sociocultural, demographic, and professional perspective. Of the total of 2,639 respondents, 77.9% (n = 2,056) did not have children under the age of majority, while only 22.1% (n = 583) did. This trend varied across continents, being most pronounced in Europe and the Americas.

In Europe, for example, the proportion of health workers without minor children is particularly high: for every person who does have minor children (n = 281), there are almost five who do not (n = 1,401). This is consistent with the continent's demographic statistics, where birth rates have steadily declined in recent decades, and motherhood/fatherhood tends to be postponed due to factors such as the search for professional stability, job insecurity, and limited family policies in some countries (Eurostat, 2023).

This postponement of motherhood or fatherhood may also be associated with the level of demands and commitment that healthcare practice entails. As Çakma & Abidin (2021) point out, many healthcare workers face long workdays, frequent shift changes, and constant exposure to high-stress situations, factors that may influence the decision to delay or avoid active parenting during their professional development. Furthermore, in the

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European context, there is a stronger culture of individualism and personal life planning, which may influence these patterns.

In the Americas, although the group without minor children (n = 457) also predominates over those who do (n = 126), the ratio is approximately 3.6 to 1, indicating a smaller comparative gap compared to Europe. This finding is relevant, since in many Latin American countries, motherhood and fatherhood continue to occur at younger ages, and family networks tend to be larger and more co-responsible (Rojas -Guzmán & Lill, 2021). However, healthcare personnel with children in this region face greater challenges due to the lack of work-life balance policies, the scarcity of institutional support, and the impact of chronic stress on mental health.

This dual role—as health professional and active parental caregiver—has been widely studied. Teicher et al. (2023) show that health professionals with children, especially those with complex medical conditions, face high levels of emotional exhaustion, decreased sleep quality, and disruptions in family relationships. This is exacerbated when health systems lack structured support mechanisms, as is the case in much of Latin America.

In the continents with lower numerical representation in the sample—Africa, Asia, and Oceania—a more balanced distribution is observed between those with and without minor children. In Africa, for example, the difference is slight (166 with children vs. 188 without), which may be linked to a higher birth rate in this region, as well as a sociocultural context where parental roles are assumed earlier. In these contexts, however, childcare may be mediated by community or extended networks, which partially redistributes the burden.
From a gender and occupational health perspective, various studies have shown that having minor children particularly affects female healthcare professionals, who more often assume the burden of childcare (Lee et al., 2023). This situation impacts their emotional well-being, job performance, and even their permanence within the healthcare system, particularly during health crises such as the COVID-19 pandemic (Us, Boran, Yalçın et al., 2024).

Thus, the data obtained in the table allow us to infer that direct experience of child care is less common among the health personnel surveyed, particularly in Europe and America, which may have implications for their sensitivity to family- and child-centered care practices.

This situation raises the need for healthcare and education institutions to include tools in continuing education and clinical practice that strengthen the family-centered and humane perspective, regardless of direct parental experience. Likewise, labor policies should consider implementing work-life balance and support measures for staff who have minor children, in order to preserve their physical and emotional health and improve the organizational climate.

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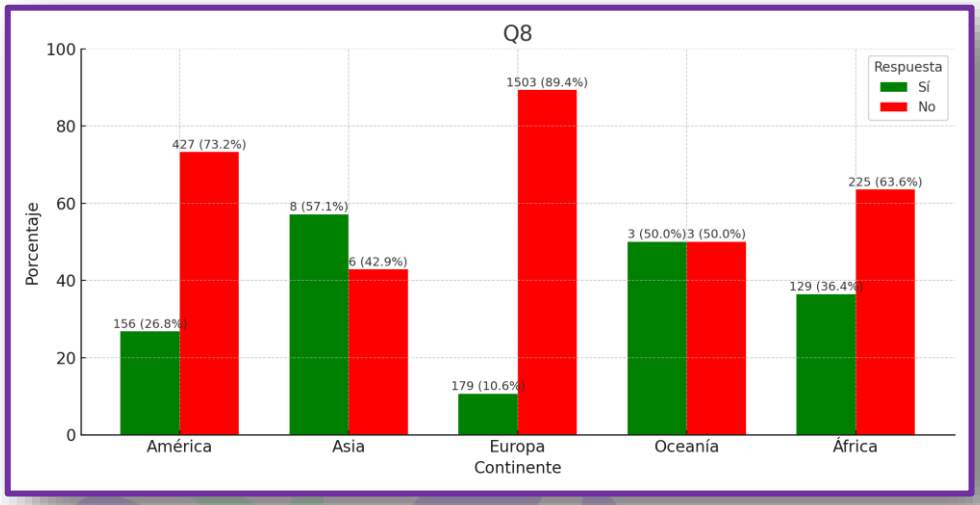
Q8.- Do you have elderly people in your care?



The graph shows that Europe concentrates the largest absolute number of participants (n=1,682), of which 179 (10.6 %) indicated having elderly people in their care, while 1,503 (89.4 %) no. Despite the broad survey base, the proportion of caregivers is relatively low. In the Americas, 583 professionals participated. Of these, 156 (26.8 %) reported caring for older adults, a considerably higher proportion than in Europe. This figure could reflect structural differences in the institutional and family support network between regions. Africa, on the other hand, shows an even higher proportion: 129 of 354 participants (36.4 %) fulfill this role, being the continent with the greatest relative burden of care among respondents. In Asia, although the total number of participants was small (n=14), 8 people (57.1 %) reported being caregivers, representing the highest relative proportion of family caregiving among all regions, although the sample size limits generalizability. Finally, in Oceania, of the 6 participants, 3 (50.0 %) reported having elderly people in their care.

The data are consistent with the findings of Looman, van den Heuvel, and Huijsman (2018), who noted that in European regions with a greater supply of formal care services (such as residential, long-term care, and professional home care), family caregivers—including healthcare professionals—report lower emotional burden and greater well-being. This partly explains the low proportion of caregivers in Europe.

In contrast, in regions such as Latin America and Africa, where formal care systems are limited or inaccessible, responsibility falls almost exclusively on the family environment, even when the family caregiver is a health professional. According to Montañez et al. (2022), cohabitation with older

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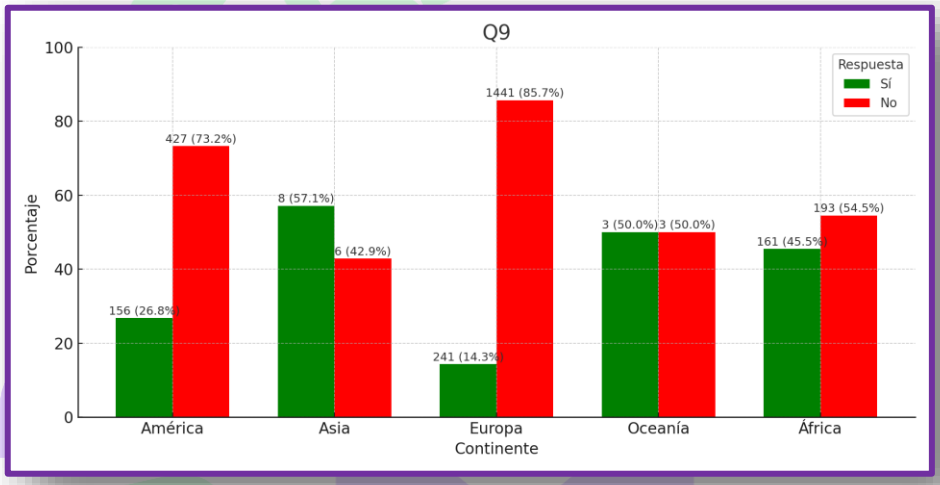
adults in these contexts is associated with a significant subjective burden, exacerbated by the lack of institutional support.

Gómez-Soler et al. (2024) report that family caregivers perform complex medical tasks, often without formal guidance, which increases the risk of errors, burnout, and deterioration in the caregiver's quality of life. This scenario poses an occupational health risk for healthcare personnel, especially in regions with a high family care burden such as Africa and the Americas. Continuous exposure to stress—both professional and domestic—increases the risk of burnout, anxiety, and psychosomatic problems (Halperin et al., 2022).

Q9.- Do you have dependents in your care?



According to the graph, Asia and Oceania, although with small sample sizes, have the highest proportions of professionals with dependents in their care (57.1 % and 50.0 %, respectively). Africa also has a considerable figure: more than a third (36.4 %) of professionals report having dependents under their care. In the Americas, nearly 1 in 4 professionals performs informal caregiving duties (26.8%). And in Europe, although it has the largest number of participants, only 10.6 % % perform caregiving functions, which could be related to greater availability of formal services and public care policies (Wagner & Brandt, 2018). Although with small sample sizes, Asia and Oceania show the highest rates of health personnel performing informal caregiving functions. These findings reflect possible contexts in which family care continues to be a central pillar, given the limited coverage of institutional support services.

In Africa and the Americas, a significant number of professionals also assume family care responsibilities. This trend is associated with fragmented health systems, a lack of formal support networks, and

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structural inequalities that place the burden of domestic care on families, particularly women in the health sector (Sanjuán-Quiles, A. et al., 2023). This is confirmed by Pérez and Urrejola (2024), who mention that informal caregivers in contexts of high demand and low institutional support foster high levels of burnout and anxiety, as well as a perception of abandonment by labor structures.

While Europe has the lowest proportion of professionals with dependents in their care, which can be explained by the existence of stronger public policies on dependency care and home support services. This finding is supported by the study by Wagner & Brand (2018), which shows that, in European regions with better formal care coverage, caregivers have a lower emotional burden and better overall well-being. This suggests that access to social and community resources not only alleviates the burden on caregivers but also optimizes their professional performance.

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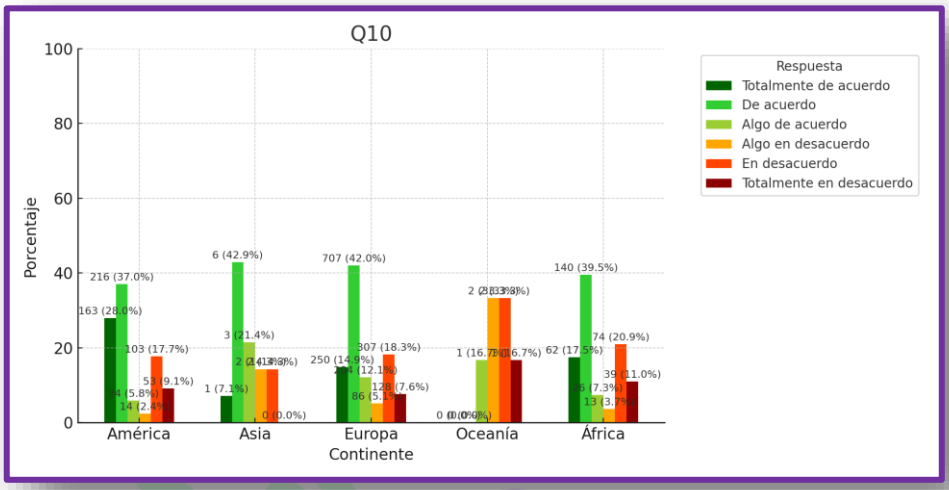
Q10.- To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.



The results for question Q10 on whether "The verification of a claim that a child is in severe pain should be based on observation of changes in vital signs" reflect an uneven distribution across continents.

Although the "agree" option was the most voted for by people in America (37%), Asia (42.9%), Europe (74%) and Africa (39.5%), in Oceania the majority position is around disagreement with 16.7% "totally disagree" with the statement.

This reflects that in most continents, especially in America (28%) and Africa (17.5%), the approach to identifying intense pain in children is based on the biomedical model, focusing solely on the variation in vital signs.

The high reliance on vital signs as an indicator of pain in the Americas and Africa indicates a technical training focused on biomarkers, which can lead to underestimation of pain if these signs are not present.
Europe appears to have adopted a more comprehensive approach, understanding that vital signs are only one of several indicators, which can lead to a more accurate assessment of childhood pain.

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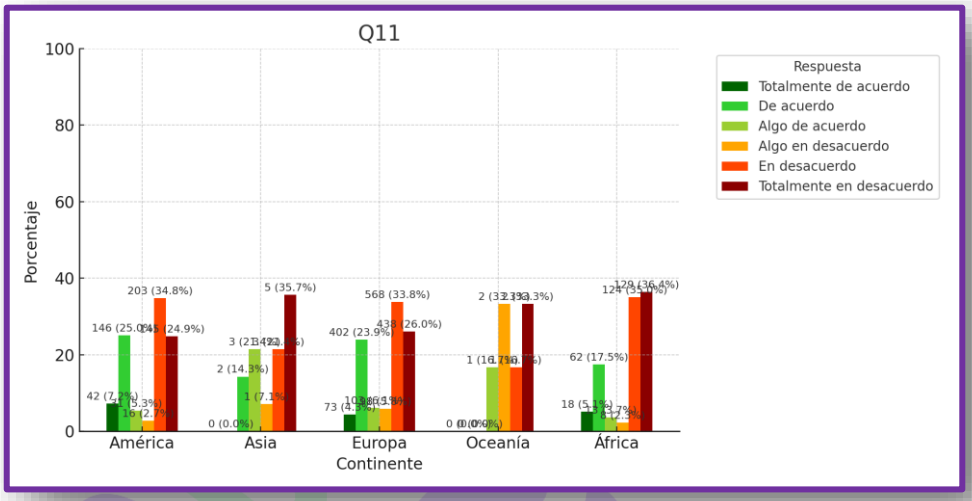
Q11.- Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.



The results of question Q11 of the questionnaire, which states that "because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences," reflect responses that were predominantly "in disagreement" among all participants on all continents.

Segmented by region, in America the "strongly disagree" option was voted by 24.9%, in Asia by 35.7%, in Europe by 26% (with the addition of 33.8% of participants who simply "disagree"), more than 30% in Oceania "strongly disagree" and 36.4% "strongly disagree" by participants from Africa.

The continent with the highest level of agreement on this statement is the Americas, with 25% of participants from this region. This misconception is more prevalent in the Americas, indicating a need for professional updating. Current neurobiology has shown that even newborns perceive pain significantly. In Europe, less than 50% agreed with this, likely reflecting more extensive training on neurological development and early childhood pain management.

Therefore, this graph shows that pain recognition in children under 2 years of age depends not only on scientific knowledge about neurological development, but also on sociocultural, economic, and political factors that vary by continent:

- *Europe and North America* : They more rigorously implement the recommendations of international organizations on pain management in early childhood. There is access to specific assessment scales such as NIPS or FLACC, as well as

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pharmacological and non-pharmacological interventions. This reflects a greater recognition that, although infants lack declarative memory, they do experience pain, and their immature nervous systems make them more vulnerable to harmful experiences. According to Anand & Fitzgerald (2022), in countries such as Sweden, Canada, and the United Kingdom, pain in newborns is addressed from a bioethical and neuropsychological perspective, integrating families into the care process.

- *Latin America* : Although there has been progress, hospital practices that underestimate pain in children under 2 years of age still persist. Many hospitals lack specific protocols, and practices are based on individual staff perceptions. A study by Meléndez et al. (2022) in public hospitals in Peru and Colombia revealed that only 58% of nursing professionals recognized pain as a relevant phenomenon in newborns, and less than 40% applied standardized tools.

- *Asia and Africa* : They face structural, cultural, and educational challenges. Although countries such as Japan and South Korea have advanced practices, in other regions of Southeast Asia and sub-Saharan Africa, childhood pain is undertreated due to limited training in pediatric neurodevelopment. Walker et al. (2021) note that lack of access to pediatric opioids and the absence of standardized protocols seriously affect pain care in Central Africa, where most hospitals do not systematically consider analgesia in children under 2 years of age.

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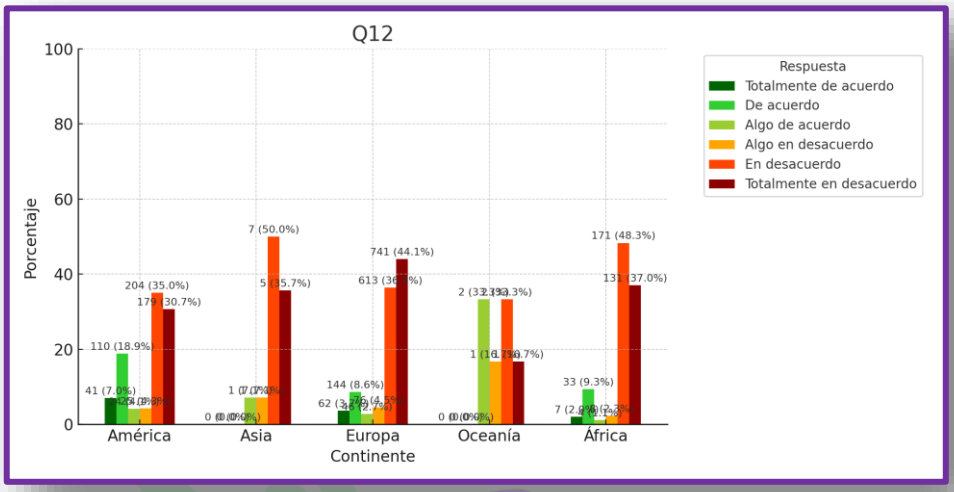
Q12.- Similar stimuli in different children produce the same intensity of pain.



Question Q12, on whether “similar stimuli in different children produce the same intensity of pain,” is a more widely accepted misconception in the Americas (18.9% of people “agreed” with the statement) and Oceania (33% of people “somewhat agreed” with the statement), which can limit empathy and personalization of treatment.

In Europe, there is greater awareness of the subjectivity of childhood pain, probably as a result of more patient-centered approaches and better theoretical and practical training.

This is reflected in the very high percentage of Europeans who voted “strongly disagree” with the statement (44.1%), followed by Africa with 48.3% “strongly disagree” and Asia with 50% “strongly disagree”.

It is necessary to educate people that each child experiences pain in a unique way, influenced by diverse factors, from psychological and social to biological and neurocognitive.

The graph highlights a fundamental truth in pediatrics: pain is a subjective experience, even in early childhood. The idea that "the same stimulus produces the same pain" in all children is erroneous. The intensity of pain depends on factors such as:

- Maturation of the nervous system.
- Presence or absence of analgesic strategies.
- Family support.
- Nutritional status and general health.
- Emotional support and environmental conditions.

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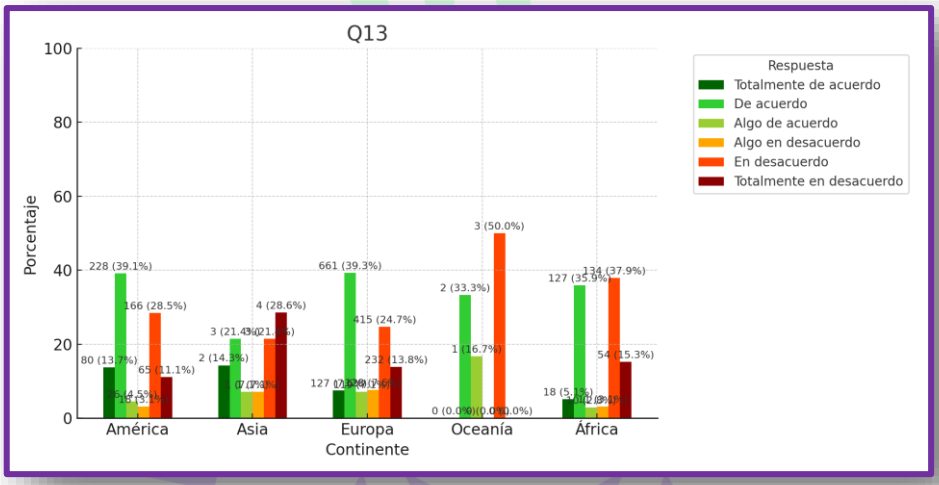
Although the nervous system is still developing in children under 2 years of age, pain perception may be more intense, as inhibitory (modulatory) mechanisms are less developed. However, how this pain manifests varies depending on the child's psychosocial and cultural environment.

Q13.- Children under 6 months of age cannot tolerate opioids for pain relief.



Responses to question Q13, asking whether "Children under 6 months of age cannot tolerate opioids for pain relief," varied across regions. The distribution was similar among those from the Americas and Europe, where the highest proportion of respondents agreed (39.1% and 39.3%, respectively). In Asia, the highest proportion of respondents voted "strongly disagree" (28.6%), and in Oceania and Africa, the highest proportion of respondents voted "disagree" (37.9%).

This indicates that in countries where the majority position is "totally agree" or "agree," the effects of opioids on this type of population and vulnerable patients may not be fully known, while in positions where "totally disagree" is the most frequently referred to, the risks and benefits of using these pharmacological groups may not be given the full importance necessary and may opt for their use, although this does not necessarily have entirely negative connotations.

Misinformation about opioid tolerance in infants is most prevalent in the Americas and Oceania, an issue that can lead to insufficient pain treatment in newborns, affecting their immediate and future well-being.

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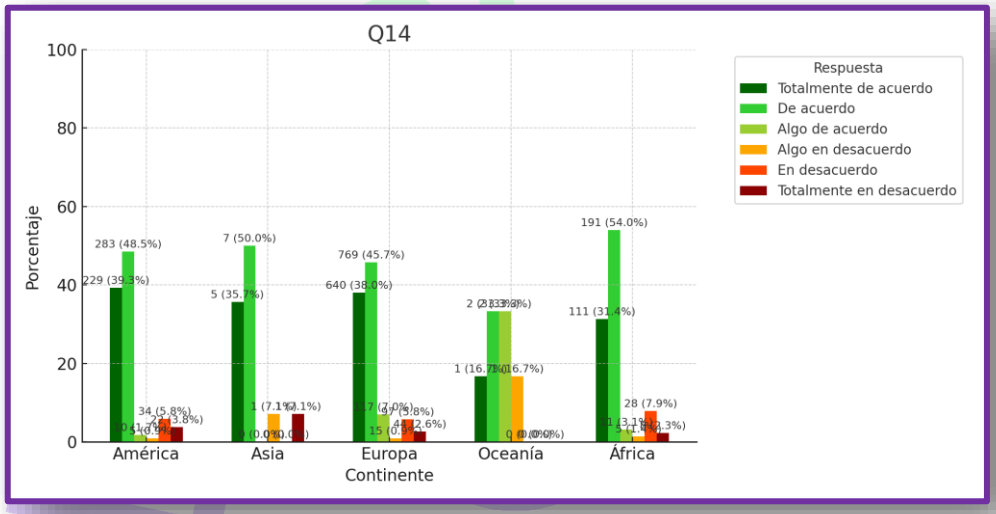
Therefore, it is necessary to increase knowledge about pharmacokinetics and pharmacodynamics in pediatrics, promoting safer and more effective use of opioids under clinical supervision.

Q14.- After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.



Of the total number of participants, it is observed that the majority belong to Europe, with a total of 1682 people, of which 1526 (90.7%) indicated that they agree with the individualization of treatment after the initial dose, while only 156 (9.3%) disagree.

In the case of America, 583 participants responded, of which 522 (89.5%) indicated that they agreed with the individualization of treatment after the initial dose, while only 61 (10.5%) disagreed.

For Africa, 354 respondents were identified, of which 313 (88.4%) indicated that they agreed with individualization of treatment after the initial dose, while only 41 (11.6%) disagreed.

Regarding Asia, 14 people participated, of which 12 (85.7%) indicated that they agreed with the individualization of treatment after the initial dose, while only 2 (14.3%) disagreed.

This finding is supported by Välimäki et al. (2021), who reported that 71% of pediatric intensive care units (PICUs) in 27 European countries use standardized protocols for pain management and sedation, with 81% performing daily pain assessments. Furthermore, 92% of these PICUs indicated that nurses are primarily responsible for pain monitoring in

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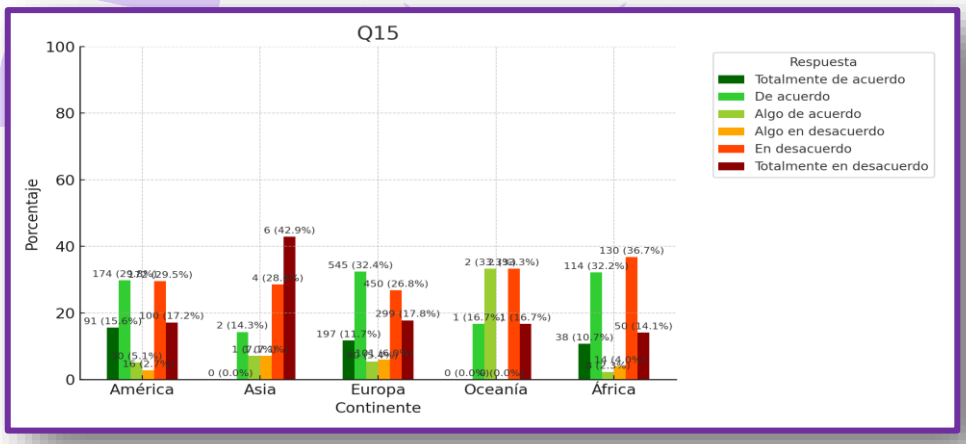
children, demonstrating strong commitment and widespread agreement to tailor subsequent doses according to individual patient response. However, significant variability in the implementation of these protocols was found across countries and centers, attributed to differences in resources, training, and institutional policies.

In the American context, there is a growing trend toward individualizing analgesic doses in pediatric pain management, with regional variations. In North America, Fowler et al. (2020) reported that pediatric emergency physicians in Canada prioritize adequate pain control over the risk of opioid dependence, focusing on the specific needs of each patient. Meanwhile, in Central America, McNeil et al. (2021) showed that the integration of pediatric palliative care in 17 Latin American countries varies, with a marked need to improve training and the implementation of individualized practices for pediatric pain management. This reflects that, although there is consensus on the personalization of treatment, practical application and the level of preparation remain heterogeneous in the American region, even more so than in Europe.

Q15.- It is advisable to use non-pharmacological pain interventions independently, rather than simultaneously with pain medications.



Of the total number of participants, it is observed that the majority belong to Europe, with a total of 1682 people, of which 832 (49.5%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously with pain medications, while 850 (50.5%) disagree.

In the case of America, 583 participants responded, of which 295 (50.6%) indicated that they agree with the use of non-pharmacological interventions

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against pain independently, instead of simultaneously with pain medications, while only 288 (49.4%) disagreed.

For Africa, 354 respondents were identified, of whom 160 (45.2%) indicated that they agree with the use of non-pharmacological pain interventions independently, rather than in conjunction with pain medications, while 194 (54.8%) disagreed.

Regarding Asia, 14 people participated, of whom 3 (21.4%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously with pain medications, while 11 (78.6%) disagreed.

In this regard, the following research was found that allows contrasting the results found. Cozzi et al., (2021) In the manuscript resulting from the work of a research group of pediatric emergency physicians and Italian anesthesiologists, experts in pain management. The group reviewed the literature on psychosomatic pain and somatic symptom disorder and developed a specific clinical practice for the field of pediatric emergencies. They found the following results: The manuscript provides information on the main clinical characteristics shared by patients with psychosomatic pain, as well as on current diagnostic criteria and appropriate management in emergencies. In addition, it highlights the potential risks that emergency physicians may face when dealing with these patients. They concluded that this clinical practice should be considered as a starting point towards a better understanding of patients with psychosomatic pain and a standardization of care in the field of pediatric emergencies.

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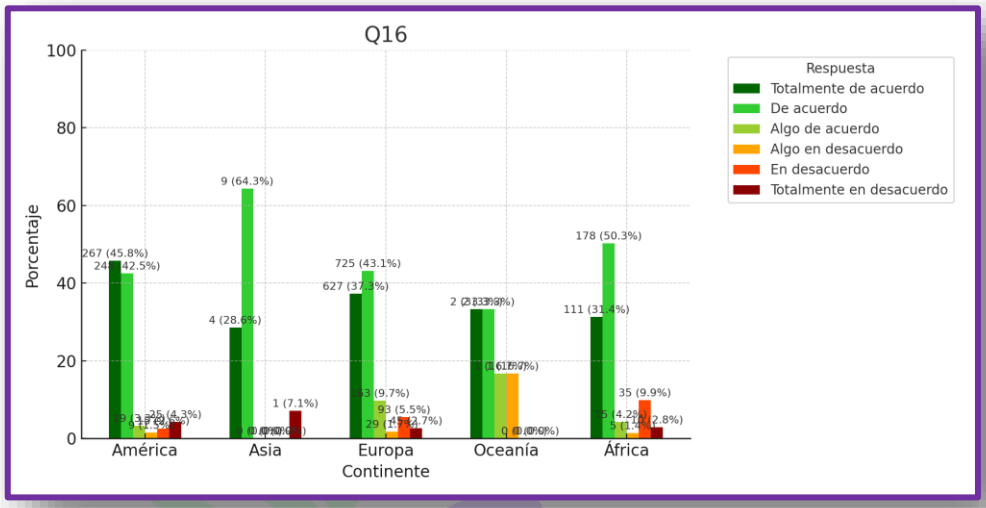
Q16.- Childhood pain is a personal experience influenced by biological, psychological and social factors.



Of the total number of participants, it is observed that the majority belong to Europe, with a total of 1682 people, of which 1515 (90.1%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 167 (9.9%) disagree.

In the case of America, 583 participants responded, of which 534 (91.6%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 49 (8.4%) disagreed.
For Africa, 354 respondents were identified, of which 304 (85.9%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 50 (14.1%) disagreed.

Regarding Asia, 14 people participated, of which 13 (92.9%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 1 (7.1%) disagreed.

Childhood pain is recognized as a complex and subjective experience, influenced by dynamically interacting biological, psychological, and social factors. In Europe, this holistic perspective is reflected in the implementation of multidisciplinary strategies for the assessment and management of pediatric pain. A study conducted in Italy showed that most tertiary pediatric hospitals employ standardized protocols for pain assessment and management, incorporating both pharmacological and non-pharmacological interventions and considering emotional and social aspects in treatment (Marchetti et al., 2023).

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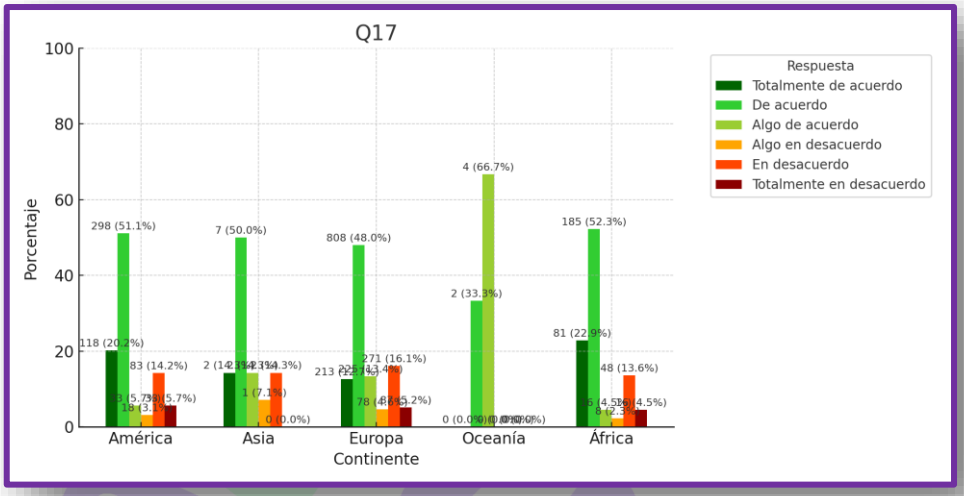
Q17.- Non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for the control of mild to moderate pain, but are rarely useful for more severe pain.



The responses to question Q17 “non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain” show that, despite a majority in the “agree” option in America (51.1%), Asia (50%), Europe (48%) and Africa (52.2%), mainly, they do not show a position in the “totally agree” option, which generates debate about whether people do not find or know the safety and potential of non-pharmacological techniques for addressing different pain intensities.

In Oceania, the majority appears to be in the “somewhat agree” position, with 66.7% of the population belonging to this continent.

The fact that very few people select "strongly agree" opens a relevant debate about the perception of their effectiveness in the most intense pain. This debate can be explained by the lack of known or perceived evidence or by the recognition of the limitations of these techniques. Despite this, the fact that high percentages of those who agree strongly are not reached could be a call to strengthen confidence in these tools and expand research on their effectiveness in contexts of more severe pain.

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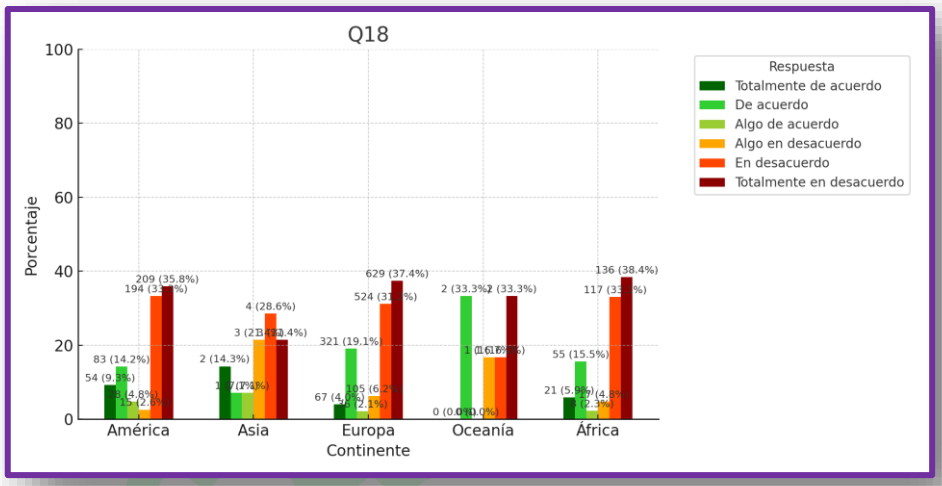
Q18.- During painful procedures, parents should not be present.



The results for question Q18, segmented by continent, on whether “parents should not be present during painful procedures,” reflect a global disagreement across regions.

In the Americas, 35.8% of people "strongly disagreed," 23.4% in Asia, 37.4% in Europe, 33.3% in Oceania, and 38.4% in Africa. This means that the trend toward allowing fathers to be present is on the rise, thus involving parents in providing reassurance to pediatric patients and thus reducing their levels of anxiety or uncertainty.

Despite this trend, some people also took the "strongly agree" position, especially in the Americas (9.3%), Asia (14.3%), and Africa (5.9%). Despite the trend toward inclusion, the fact that some people still "strongly agree" that fathers should not be present raises questions about the cultural, structural, and even educational barriers that still persist.

The majority of disagreement responses seem to indicate a growing awareness of the psychological and emotional value that parental presence represents for children. Several studies have shown that parents can help reduce perceived pain, anxiety, and distress in pediatric patients during medical procedures. This is in line with a more family-centered approach to care.

A study in Singapore shows that 91% of doctors and 65% of nursing staff prefer that parents not be present, citing professional stress and delays. Palomares et al. (2023) in Spain reported that 72% of professionals believe parents should be present for less invasive procedures, but only 4% for invasive interventions. Furthermore, the age of the professional negatively influences approval.

Ponthier et al. (2020) in France observed great variability, where the

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presence was mostly allowed in blood samples, but not in critical procedures pubmed.ncbi.nlm.nih.gov .

In the United States, the family-centered approach has driven policies promoting parental presence in emergencies and procedures, endorsed by societies such as the AAP and ACEP. However, in Israeli and US studies, many parents choose to accompany, but professionals remain reluctant.

The results obtained in this study, when analyzing the responses by continent of origin, reveal a consistent tendency toward parental presence during painful procedures in children. In continents such as Europe, America, and Africa, approximately 70% of professionals express their disagreement with this practice. Although these figures are consistent with other studies conducted in different international contexts, it is necessary to pause and critically reflect on this reality.

From a research and ethical perspective, it is concerning that, despite solid scientific evidence supporting the benefits of parental support—such as reduction in perceived pain and anxiety, and improvement in children's physiological indicators—most healthcare providers continue to restrict this option. This contradiction suggests that clinical decisions are not always based on the best available evidence, but rather on deeply held beliefs, personal fears, institutional barriers, and a lack of training in family-centered care approaches.

This professional resistance could be related to the perception that the presence of parents generates greater stress, limits the professional's autonomy, or even interferes with the dynamics of the procedure. However, these concerns, while understandable, should not override fundamental bioethical principles such as beneficence, nonmaleficence, and respect for the rights of hospitalized children, as outlined in the Convention on the Rights of the Child (UNICEF, 1989).

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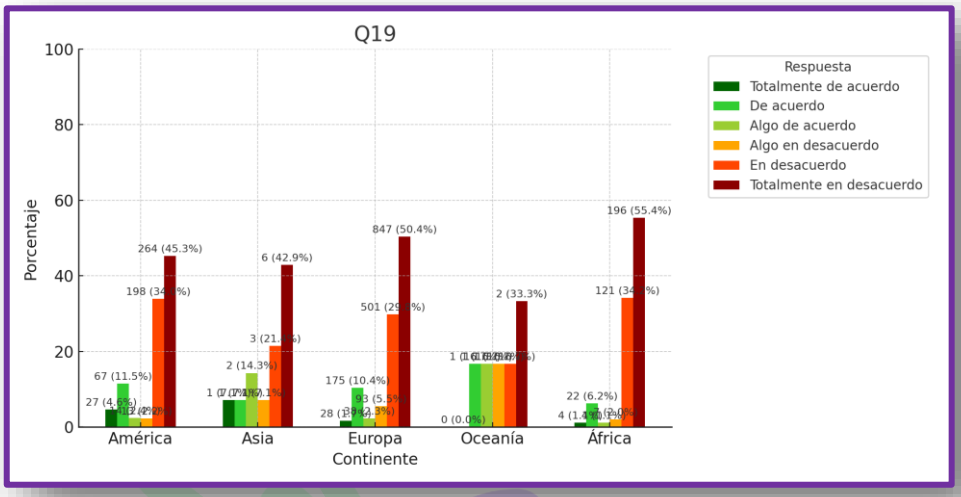
Q19.- Children with pain should be encouraged to endure the pain as much as possible before resorting to pain relief measures.



The table shows the positions of health professionals from different continents on the statement that children should be encouraged to endure pain before receiving any relief. From 2,639 participants, the findings are as follows: Africa (n=354): 324 (91.5%) disagree to varying degrees (196 strongly, 7 somewhat, 121 disagree). Only 30 (8.5%) show some level of agreement, America (n=583): 475 (≈81.5%) disagree (264 strongly, 13 somewhat, 198 disagree), 108 (18.5%) show some degree of agreement, Asia (n=14): 10 (≈71.4%) disagree; 4 (28.6%) in favor, Europe (n=1,682): 1,441 (≈85.7%) disagree; only 121 in favor (7.2%) and Oceania (n=6): 4 (66.7%) disagree; 2 (33.3%) in favor. Globally, 2,254 of the 2,639 participants (≈85.5%) reject the idea that children should tolerate pain before receiving treatment, reflecting a strong international consensus against delaying pain relief in childhood.

Scientific evidence strongly supports the prevailing view: According to the American Academy of Pediatrics (AAP) and the American Pain Society (APS), childhood pain should be treated immediately and effectively, without waiting for the child to "tough it out" (AAP & APS, 2016). Friedrichsdorf et al. (2020) found that hospitals that implement immediate relief protocols report fewer emotional complications in children and better family-health relationships. Anand & Craig (2021) emphasize that children have the right to pain relief, regardless of their age, behavior, or context, and that delay can have physical, emotional, and neurobiological consequences. In contrast, attitudes that promote "toughing it out" before relief reflect traditional practices, unsupported by ethics or current evidence, and that have been overtaken by approaches focused on the child's holistic well-being.

The data obtained show a clear global trend: professionals on all continents—with slight variations—strongly disapprove of the idea that

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children should endure pain before receiving relief. This response is consistent with the current principles of modern pediatrics and with the rights of hospitalized children established by the Convention on the Rights of the Child (United Nations, 1989).

These results are positive, as they demonstrate a growing professional awareness of the need to provide humane, empathetic care free from unnecessary suffering. However, it is concerning that there is still a percentage—albeit a minority—of professionals who justify or tolerate the postponement of pain relief. This position reflects an outdated view of care, which must be addressed through training, regulatory, and institutional strategies. Promoting pain tolerance as a value or mechanism of strength is not only clinically inappropriate but also ethically questionable. As healthcare professionals, we are called to protect children from any form of avoidable suffering, and this includes not only physical pain but also emotional and psychological pain. Therefore, it is essential to continue strengthening the competencies of healthcare personnel in pediatric pain management, implementing effective protocols, and fostering a culture of care that prioritizes the timely and empathetic relief of children's suffering, without waiting for the child to "tolerate" or "overcome" it.

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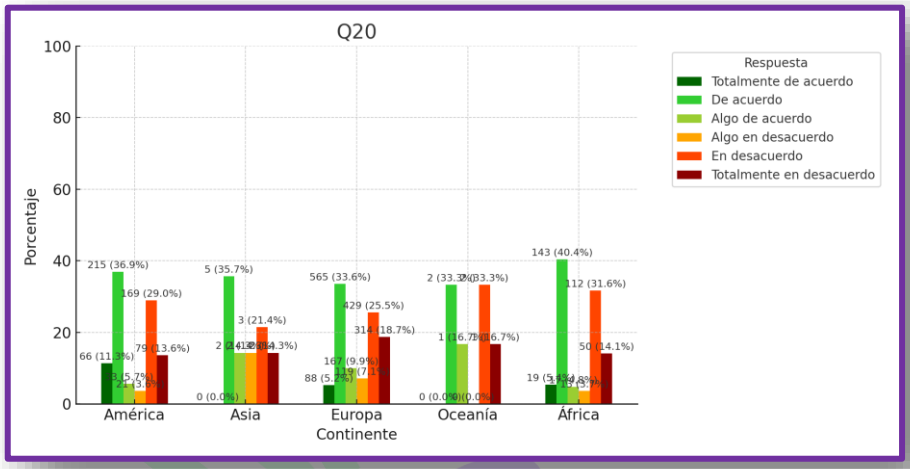
Q20.- Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.



Responses to question Q20 are unevenly distributed, with opinions on the question “Giving children placebos (sterile water or saline solution, among others) often a useful test to determine whether pain is real” similarly distributed around the “agree” responses, with 36.9%, 35.7%, 33.6%, 33.3%, and 40.4% in the Americas, Asia, Europe, Oceania, and Africa, respectively; while the “disagree” responses are 29%, 21.4%, 25.5%, 33.3%, and 31.6% in the same continents, respectively.

The distribution of responses to question Q20 reflects a clear lack of global consensus on the use of placebos in the diagnosis of childhood pain. The similarity between the percentages of those who "agree" and "disagree" suggests a significant divide in opinion, possibly influenced by ethical, educational, and cultural factors.

The fact that a significant proportion of respondents support the use of placebos could indicate a persistence of questionable clinical practices, where the veracity of the child's reported pain is questioned. However, the existence of a similar percentage of disagreement demonstrates that a portion of healthcare professionals also recognize the ethical dilemmas and lack of scientific justification for resorting to deceptive strategies to assess pain.

This scenario highlights the need to strengthen ethical and clinical training on pain management in children, promoting more respectful and evidence-based assessment methods that do not compromise the trust between the child, family, and healthcare team.

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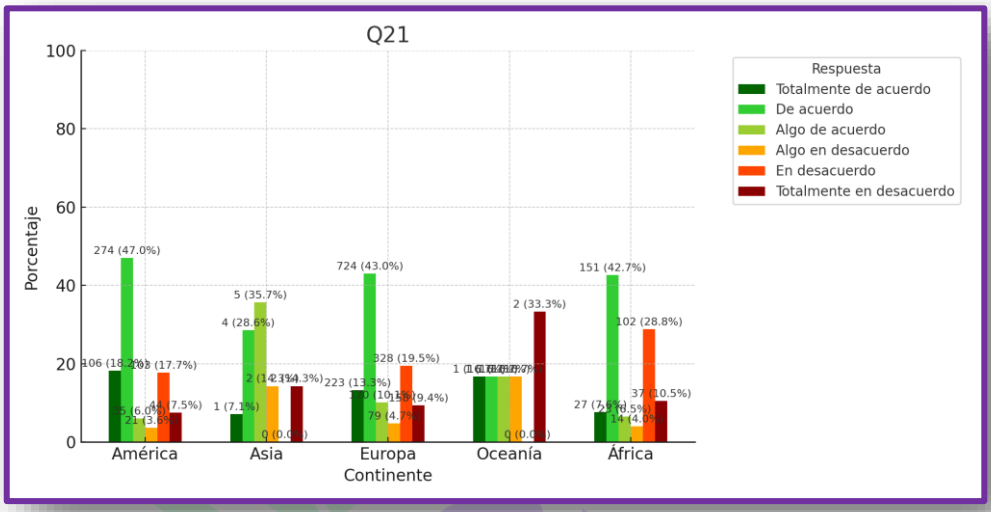
Q21.- Opioids for the treatment of acute pain can cause addiction in pediatric patients.



The distribution by continent shows notable cultural and professional differences in the perception of the risk of pediatric opioid addiction: Europe is the continent with the largest number of participants, standing out strongly for its high level of agreement: 724 people responded "Agree" and 223 "Strongly Agree." The Americas also present a high perception of risk, with 274 "Agree" and 106 "Strongly Agree," although with greater dispersion than Europe. Africa maintains a balanced distribution, but with a lower volume of responses and a medium level of agreement (151 "Agree"). Asia and Oceania present very limited data (n<10 in most categories), which prevents representative conclusions, although their responses tend toward moderate agreement.

Regional differences in perceived risk of opioid addiction also reflect disparities in health policies, access to medicines, and professional education, as noted in multiple international reviews:

- Europe and North America have had direct experience with the opioid crisis, especially in the US and Canada, which has generated a paradigm shift toward responsible prescribing and raised awareness among healthcare professionals (Volkow et al., 2019; Häuser et al., 2021). Europe, in particular, has promoted stricter guidelines for pediatric analgesia and safety protocols for decades, which explains the high risk perception shown in the graph (WHO, 2012).
- In Latin America, although access to opioids is more limited, there is growing concern among health professionals about the adverse effects of their use in pediatrics, although with less standardization of guidelines (Garcia-Rodríguez et al., 2018).

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- In Africa and Asia, access to opioids for pediatric pain has historically been very limited, not only due to lack of availability but also due to regulatory and cultural barriers (Berterame et al., 2016). This may contribute to a lower perception of risk, given the reduced direct clinical contact with these therapies.

The figure by continent reveals how the geographic, social, and healthcare context profoundly influences professional perceptions of opioid use in pediatrics. Europe is a clear leader in acknowledging the risk of addiction, which can be explained by its high investment in clinical training, the presence of strict ethical guidelines, and its more structured experience with the monitoring of these medications. Awareness of the risk on this continent translates into a more preventive approach and the active promotion of non-opioid alternatives for the treatment of acute pain.

The Americas, particularly influenced by the opioid crisis in the United States, also show a high level of agreement, although with greater dispersion. This reflects an environment still in transition, where high exposure to opioid use is combined with a growing need to reformulate their clinical indications.

Africa, for its part, shows an intermediate position. Although the perception of risk exists, the restricted use of opioids in pediatric settings—due to regulatory, economic, or access factors—likely contributes to a lower awareness of their long-term effects. Similarly, Asia and Oceania show results that are too limited for a firm conclusion, although they suggest a general trend of caution.
These data highlight the need to adopt regionalized approaches to pediatric opioid use policies. Not all continents face the same context, so educational, regulatory, and clinical strategies must be adapted to the reality of each region. Even so, the global message must be clear: opioids have a legitimate place in pediatric analgesia, but their use must be strictly regulated, justified, and monitored, especially to prevent the development of future dependence.

Professional perceptions of the risk of pediatric opioid addiction vary considerably across continents, reflecting differences in historical experiences, regulatory frameworks, levels of access, and clinical training. These variations should not be interpreted as contradictions, but rather as indicators of the degree of exposure and regulation each region has faced. It is essential to promote international harmonization of clinical guidelines, while taking into account the cultural and health specificities of each region.

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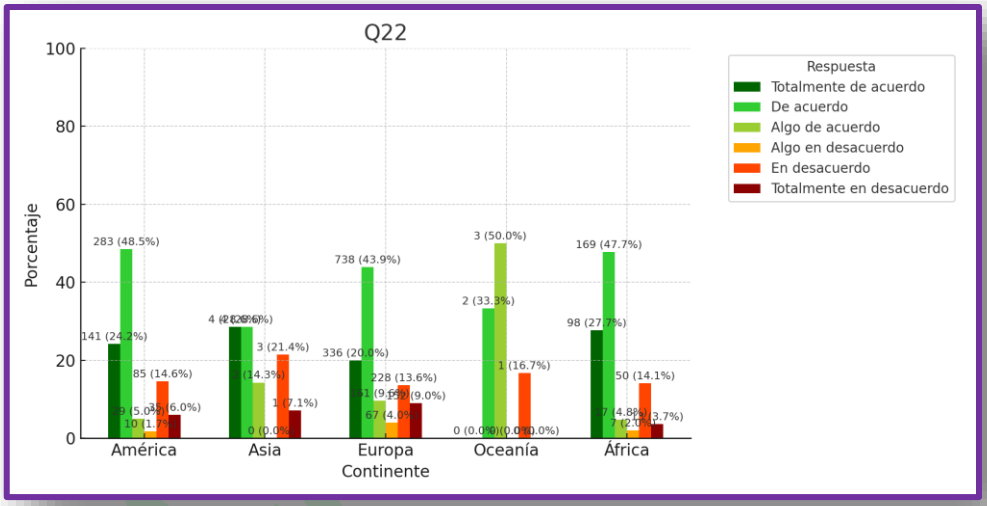
Q22.- I know and apply pain assessment scales in children.



In the analysis by continent, it can be seen that the majority of participants from Europe agreed, and that the majority also agreed somewhat and strongly agreed. This was followed by the American continent, where 453 participants responded that they agreed, somewhat agreed, or strongly agreed. The Asian continent had the fewest responses, and these were almost evenly distributed across the different response options.
On the subject, the American Pediatric Association (2018) postulates that pain prevention in newborns is necessary, not only for ethical reasons but because exposure to painful sensations at such early ages, and especially in prematurity, has consequences at different levels of the person with short and long-term sequelae such as difficulties in adapting to the postnatal environment, generating problems in the bond with parents and in feeding. The newborn has neuroplasticity, but if exposed to painful situations, these will generate a low pain threshold for the rest of life.

The attitude of the patients themselves also influences the results of understanding the scales used, as this can hinder proper diagnosis and pain control. Sometimes, patients are satisfied with moderate pain relief, not requesting further analgesia or even refusing it for fear of its potential adverse effects.

Overall, the data reflect a growing global commitment, albeit with regional differences that must be addressed through ongoing training and equitable access to assessment tools.

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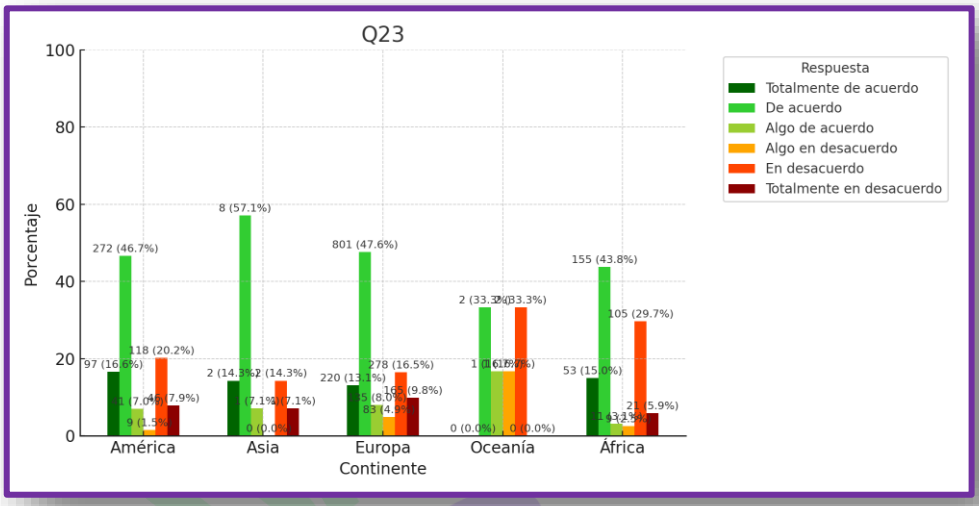
Q23.- I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)



In the analysis by continent, it is evident that the participants from the European continent (1156) responded mostly to agree, somewhat agree or totally agree, followed by the American continent, which responded to agree or somewhat and totally agree with 410 responses while Oceania was the continent with the fewest responses, distributed almost evenly in all options.

Durand and Mosqueda (2022) conducted their study on the effectiveness of using virtual reality in reducing pain in children and adolescents undergoing venipuncture, incorporating the use of virtual reality in children and adolescents between 4 and 19 years old, undergoing venipuncture. This technique has been used in prospective and cohort studies, 38.4% of which were conducted in Turkey and 15.3% in the United States. In 76.9% of the studies, the use of virtual reality was effective in reducing pain perception. Leading to the conclusion that the use of virtual reality in venipuncture is an effective distraction intervention that significantly reduces self-reported pain perception in children and adolescents between 4 and 19 years old, obtaining lower scores on pain scales, compared to groups to which virtual reality was not applied.

Celeste-Gómez, M. (2018), in a study conducted in Spain at two public hospitals, states that every child born before 37 weeks of gestational age is considered premature. These infants require support to survive; thus, according to the Ibero-American Society of Neonatology, children born prematurely undergo various procedures that are usually painful. Premature babies under 32 weeks of gestational age undergo between 5 and 14 painful procedures per day, and 80% of them do not receive painkillers. It is also important to consider that experiencing pain could have short- or long-term consequences for their development.

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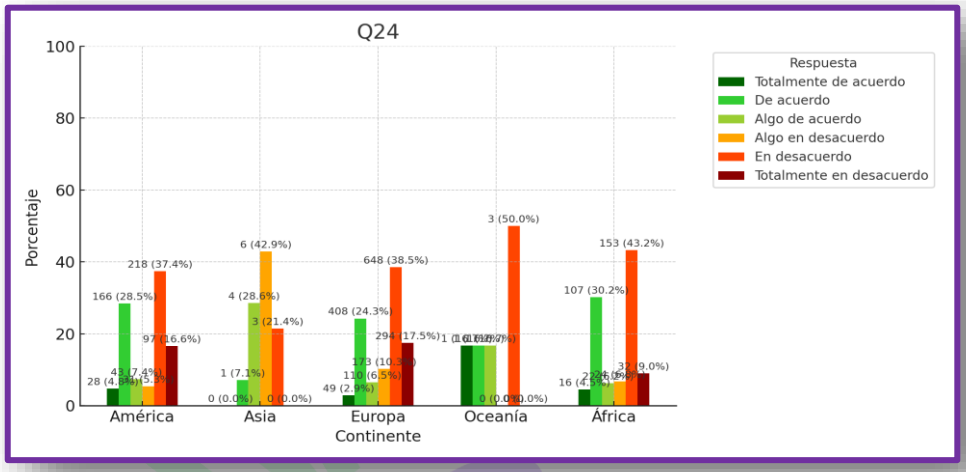
Q24.- Training on acute pain in children and its management is sufficient.



The graph for question Q24 on whether "training on acute pain in children and its management is sufficient" shows a dispersion of responses, evidencing a lack of consensus among participants globally. In the Americas, 37.4% of respondents responded "disagree," while 28.5% "agree," and only 4.8% "strongly agree." This reflects a divided opinion, with a significant portion partially acknowledging the statement, but a majority expressing some disagreement or doubt. In Europe, the trend is similar: 38.5% responded "disagree," and 24.3% "agree," also indicating potential skepticism regarding the content of the statement being evaluated.

In Africa, the pattern is repeated, with 43.2% choosing "disagree" and 30.2% choosing "agree," confirming that the statement does not enjoy majority acceptance. In Asia, although the percentages are lower due to lower participation, 42.9% also chose "somewhat disagree," reinforcing this global trend. Oceania presents the most extreme case: 50% of respondents chose "somewhat disagree," and none chose "strongly disagree."

Taken together, these data show that the statement assessed in Q24 generates uncertainty or is viewed with skepticism on most continents. The notable presence of "somewhat disagree" responses suggests that this is not an outright rejection, but rather an intermediate position that could be influenced by ignorance, lack of evidence, or cultural and professional differences.

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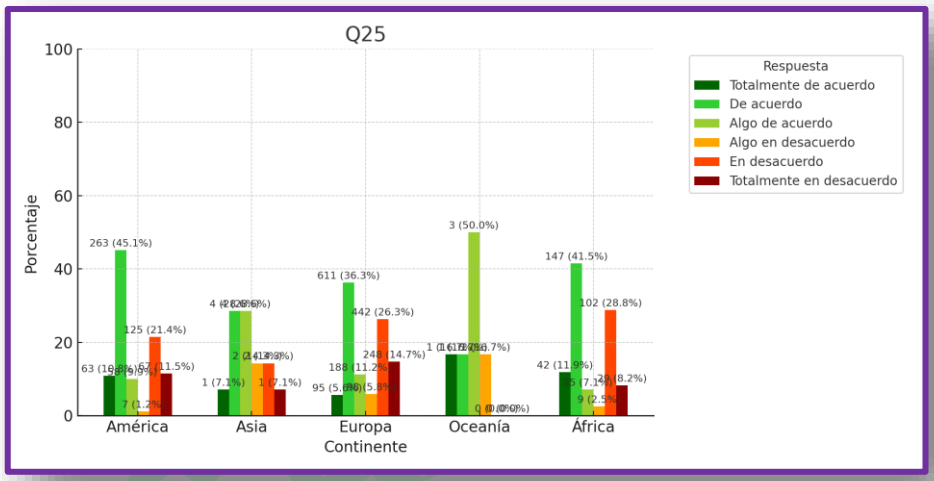
Q25.- I can identify early signs of pain in newborns.



In the analysis by continent, the continent of Europe responded mostly in agreement (611), somewhat in agreement (188) and totally in agreement (95). Regarding the recognition of early signs of pain in newborns, 57.1% of respondents stated that they agreed to some degree (7.7% totally agreed, 10.5% somewhat agreed and 38.9% agreed). However, 42.9% expressed disagreement (25.4% disagreed, 4.4% somewhat disagreed and 13.1% totally disagreed).
In this regard, in countries on various continents, to cite the Royal Children's Hospital, Melbourne, Australia (2023), it states that there is sufficient data to affirm that the newborn is capable of perceiving pain. Recognizing the existence of pain in the newborn and its treatment has become one of the main points of good clinical practice in neonatal services. The anatomical and functional components involved in the perception of pain stimuli (hippocampus, limbic system, diencephalon, neurotransmitters and glutaminergic and opioid receptors) are present before the child is born. During the gestation process, they mature until 25-26 weeks of gestational age, when they are already sufficiently developed. Non-myelination or insufficient myelination does not imply an absence of transmission of the painful stimulus, but rather a slower transmission of it.

With special emphasis, the Royal Children's Malbour (2023) states that pain management in acutely ill neonates and/or in the postoperative period is not only humane, but also essential to minimize endocrine, metabolic, and neurological responses to pain. It has been shown to significantly improve recovery time and healing, and may prevent the development of chronic pain. However, opioid exposure in the absence of pain can adversely affect brain and neurodevelopment. Judicious use of opioids in neonates is imperative, and following a pain management algorithm has been shown to be effective in providing appropriate pain management and minimizing opioid exposure.

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Non-pharmacological management is also important, as all newborns should receive appropriate physical and psychological strategies during any painful procedure. Non-pharmacological strategies should be used, in addition to pharmacological ones, whenever possible, such as skin-to-skin contact, breastfeeding (depending on maternal intention and the newborn's ability to breastfeed), non-nutritive sucking (with parental consent for the use of a pacifier), among others.

Pain has been defined as any unpleasant sensory and emotional experience associated with tissue damage, or described as if it were present. This damage is caused by the activation of various hormonal mechanisms, as well as by an increase in the level of oxidative stress. For years, there has been a false belief that newborns, due to their biological immaturity, perceive pain less and tolerate it better. This falsehood has now been demonstrated in various studies in fields such as newborn psychology, anatomy, and neurophysiology.

It is important to involve parents in neurodevelopmental care strategies during "minor," non-urgent painful procedures, such as heel lancets and venipunctures, as this enhances the benefits of these techniques for the newborn by having parents and family members present to provide this care. This misconception of pain in newborns has led to insufficient treatment, with consequences for the newborn's physical and psychological health. Lack of myelination or insufficient myelination does not imply a lack of transmission of the painful stimulus, but rather a slower transmission of pain.

The peripheral nervous system is considered functional at 20 weeks postconceptional. Pain transmission and response are part of a complex system in which numerous neuroendocrine mechanisms interact, with components of both overstimulation and inhibition. In full-term and preterm newborns, many inhibitory mechanisms are still immature, so the newborn may even present exaggerated physiological and hormonal responses to the same painful stimulus compared to those shown by older children or adults, with a lower pain threshold the lower the gestational age of the patient. A suitable environment should be provided, with limited noise and ambient light. Interventions that can help relax the patient include music, soft speaking, or rocking. Handling the newborn should be slow and gentle, promoting self-regulation behaviors and postures, such as holding, grasping, and sucking.

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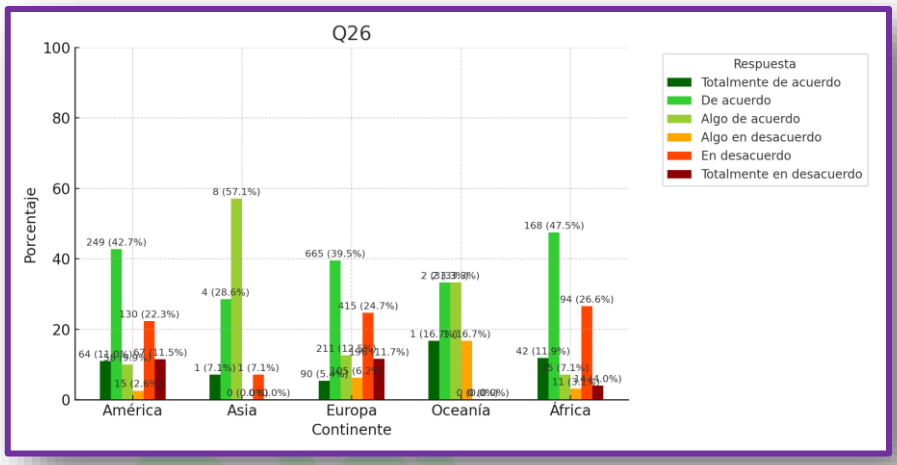
Q26.- I know how to act in the case of acute pain in children.



Regarding respondents across continents, the results were similar across the three continents where the largest number of respondents were surveyed. In Europe, the Americas, and Africa, the highest percentages agreed on how to respond to pain in children: 57.4%, 63.6%, and 66.3%, respectively.

Likewise, it was found that 42.6%, 36.4% and 33.7% of the continents of Europe, America and Africa respectively show some degree of disagreement.

In a study conducted by Cordero et al. (2012) in several European and Latin American countries on the attitude of nursing staff toward continuing education, it was found that 52% of nurses had not received any training on pain-related topics and were the most likely to display unfavorable attitudes. Favorable attitudes were evident among those who had received training (18.1% and 10.7%, respectively); the greater the number of courses received, the better their attitude toward knowing what to do in pain management in children.
Internationally, a European-wide review of pain education for undergraduate healthcare professionals assessing the curricula of 242 medical schools found that 69% of medical schools in Europe do not have dedicated pain teaching, with notable inconsistencies in content and a lack of practical teaching methods in pain management; only 26% of courses used pain-based teaching (Briggs EV, 2015).

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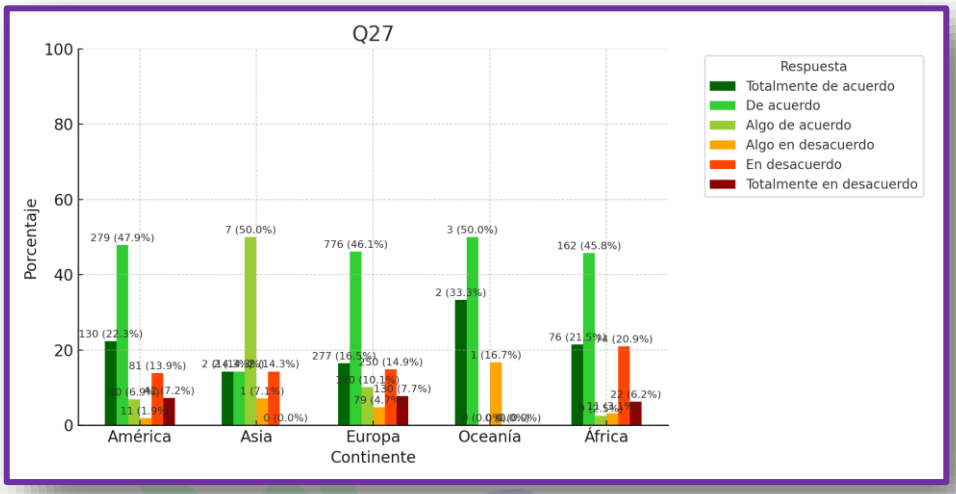
Q27.- Analgesia should be used before performing additional traumatic tests.



Regarding the responses to question Q27, "analgesia should be used before performing additional trauma tests," the majority opinion was "strongly agree," as reported by 22.3% in the Americas, 13% in Asia, 16.5% in Europe, 33.5% in Oceania, and 21.5% in Africa.

Regarding the “disagree” position, 13.9% of the population in the Americas, 14.3% in Asia, 14.9% in Europe, and 20.9% in Africa.

The responses to question Q27 of the questionnaire show a positive trend toward recognition or understanding of the topic, as the majority of participants expressed a high level of agreement. However, the presence of a significant number of disagreements indicates that there are still doubts or gaps in certain contexts.

This divide suggests that, while there has been progress in awareness and training, inequalities persist in access to and application of this knowledge, which requires attention to achieve more uniform and evidence-based practice.

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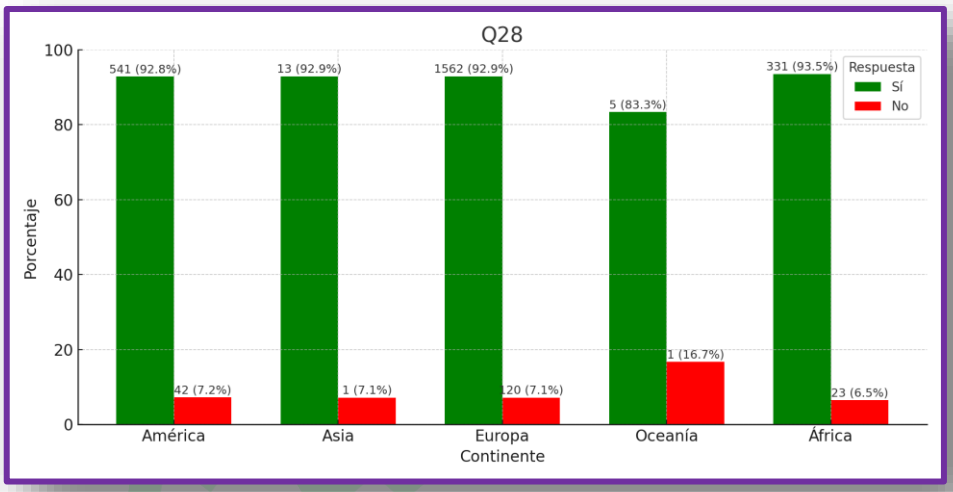
Q28.- Do children have memory of painful episodes?



Regarding question Q28, "Do children have memories of painful episodes?" the distribution is similar across all continents, with more than 90% of participants from each continent agreeing with the statement.

The broad consensus among participants across all continents that children have memory of painful episodes reflects a significant shift in the understanding of childhood pain. This consensus suggests a growing sensitivity to early pain experiences and their potential long-term effects, both emotional and physical. The widespread acceptance of this idea represents an important advance in healthcare, especially in the pediatric context, where for years children's ability to remember pain was underestimated.

The fact that more than 90% of participants agreed indicates that most professionals already incorporate this perspective into their clinical practice, which can translate into greater concern for preventing or relieving pain in a timely manner. In turn, it promotes a more humane, respectful, and empathetic approach, focused not only on immediate relief but also on preventing long-term consequences, such as the development of medical phobias or negative responses to future healthcare interventions.

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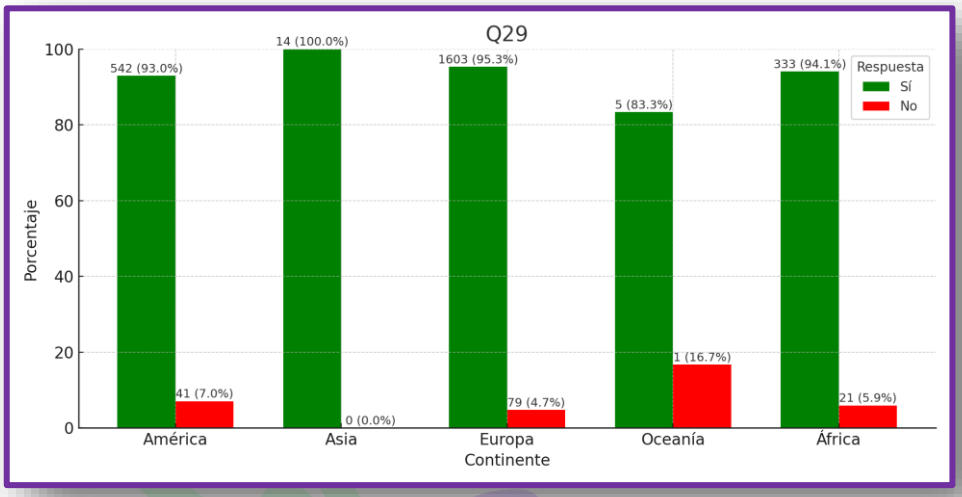
Q29.- Do you think that inadequate pain control can influence the adult personality of children?



The responses to question Q29, which asks whether "Do you think inadequate pain control can influence children's adult personality?" are distributed around "I agree" with the statement in the question across all continents.

The distribution of responses to question Q29 demonstrates a general consensus that inadequate pain control in childhood can influence adult personality. This consensus among professionals from different continents suggests a growing awareness of the psychological implications of untreated pain and how these experiences can leave lasting marks on an individual's emotional and behavioral development.

The broad agreement also reflects a paradigm shift from older views that minimized the impact of childhood pain, treating it as something temporary or without long-term consequences. Recognizing this connection between early pain and adult personality implies taking a more preventive and proactive approach to pediatric care, where emotional well-being is considered as important as physical well-being.

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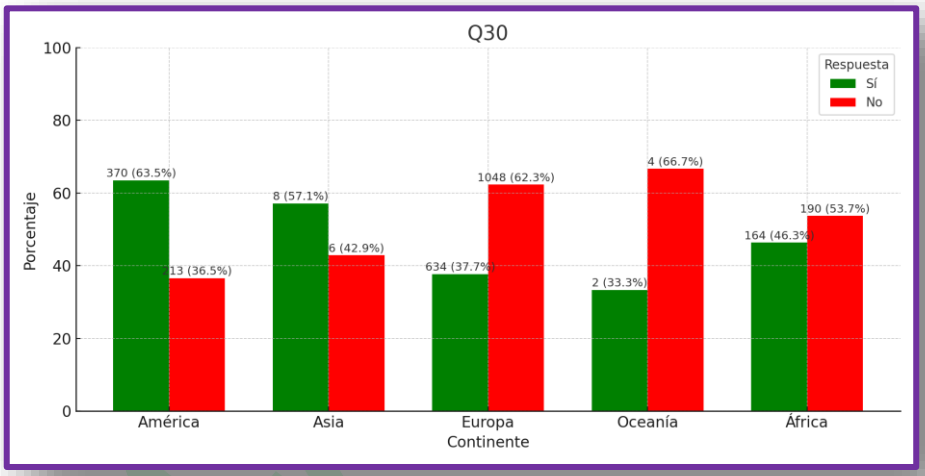
Q30.- Is pain proportional to the magnitude of the injury that causes it?



The graph shows responses from healthcare professionals from five continents, with clear regional variability in their conceptualization of pain. Europe is the continent with the highest participation (1,682 professionals). Of these, 634 (37.7%) believe that pain is proportional to the damage, while 1,048 (62.3%) believe that it is not. This indicates that a European majority rejects the linear view of pain, in line with more contemporary models. Meanwhile, in the Americas, with 583 respondents, 370 (63.5%) believe that pain is proportional, and 213 (36.5%) do not. This is where the highest proportion of professionals who still maintain a traditional or biomedical view of pain is observed. Meanwhile, in Africa, 354 professionals participated, with 164 (46.3%) in favor of proportionality and 190 (53.7%) against. This group shows an intermediate profile, with divided opinions. Thus, in Asia, although the sample is small (14 participants), 8 (57.1%) considered pain to be proportional, while 6 (42.9%) did not. Despite the small size, a certain prevalence of the classic view is perceived. Finally, Oceania had 6 participants, of whom 2 (33.3%) said yes, and 4 (66.7%) said no. Although the sample is very limited, the pattern seems similar to that in Europe.

In summary, the data reveal significant geographic variability in the conceptualization of pain. Europe leads the way in adopting a modern perspective, which recognizes the subjectivity of pain beyond physical damage. In contrast, the proportional view of pain persists more strongly in the Americas and Asia, possibly reflecting differences in professional training, access to up-to-date scientific evidence, and educational approaches to pain management.

The results of the graph show important continental differences in the perception of pain, thus Europe is the only continent where the majority of

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health personnel (62.3%) consider that pain is not proportional to the injury, showing a clear adherence to the biopsychosocial model.

In contrast, in the Americas and Asia, the majority believes pain is proportional, reflecting the persistence of the classic biomedical perspective. Africa shows a more balanced distribution, while in Oceania, although the sample size is small, it is more in line with the European perspective.

This pattern can be explained by differences in educational systems, access to pain training, and the level of implementation of the biopsychosocial model in each region.

According to Raja et al. (2020), the IASP's redefinition of pain—as a sensory and emotional experience that may or may not be related to actual tissue damage—has been most widely accepted in European and Oceanian countries, where health policies and clinical training better integrate this approach. This is consistent with the higher proportion of negative responses to pain proportionality in these continents.
On the other hand, Liossi et al. (2021) observed that in regions where pain training is limited or focused only on anatomical and physiological aspects, such as in several parts of Latin America and Asia, professionals tend to associate pain exclusively with the magnitude of the observable damage. This is reflected in the 63.5% of staff in the Americas who consider pain to be proportional.

Furthermore, the study by Slater et al. (2020) highlights that the adoption of the biopsychosocial model in the approach to pain depends not only on academic training, but also on national health policies and access to continuing education, which would explain the differences observed between Europe (more integrative policies) and other regions.

Finally, Shipton et al. (2018) demonstrated that, in Oceania and European countries such as Australia, the United Kingdom, and the Nordic countries, undergraduate health programs include content on the modern neuroscience of pain, resulting in professionals better equipped to recognize the subjectivity of pain, even in the absence of physical injury. Although the sample size in Oceania is small in this study, its pattern is consistent with this evidence.

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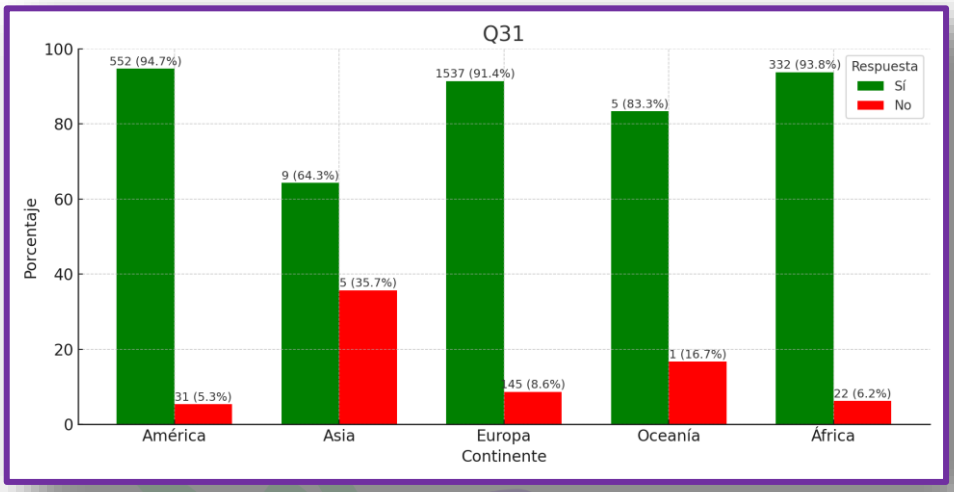
Q31.- Is it useful to explain to a 4-year-old child what you are going to do to calm him/her down?



The graph shows the percentage distribution of healthcare personnel who believe that a patient's perceived pain is directly related to the severity of the injury, broken down by continent. The results reveal significant geographic variability in this belief.
First, it is observed that Africa and Asia account for the highest percentages of professionals who adhere to this linear conception of pain, with a combined response rate exceeding 60%. This trend could reflect the persistent influence of the traditional biomedical model and limitations in training on modern pain physiology.

In contrast, the Americas and Europe show more balanced proportions, with a higher proportion of staff recognizing that pain is not always directly related to the extent of the injury. This difference suggests a greater penetration of the biopsychosocial model of pain into their educational systems and clinical care.

Finally, Oceania has the lowest percentage of adherence to the idea of proportionality between pain and injury, indicating a higher level of literacy in pain neuroscience and an understanding of the subjective and multidimensional nature of this experience.

These results reflect not only disparities in professional training but also different approaches to human suffering in clinical practice, raising the need to standardize pain science education globally, with an emphasis on the biopsychosocial approach.

The results show a persistent influence of the classical biomedical model in regions such as Africa and Asia, where a majority of healthcare personnel continue to believe that pain is directly proportional to the magnitude of the injury. This belief is consistent with that reported by Alotaibi et al. (2020),

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who noted that in healthcare systems with less access to continuing education in pain neuroscience, erroneous beliefs about the pain-injury relationship are more common and negatively impact the quality of care.

In contrast, in the Americas and Europe, there is a greater awareness of the subjective nature of pain, which aligns with the work of Caneiro et al. (2021), who found that educational programs based on the biopsychosocial model significantly improve professionals' understanding of the nociceptive and non-nociceptive mechanisms of pain. This training trend has been driven by curricular reforms and pain literacy campaigns promoted by scientific societies and universities.

In Oceania, the low proportion of professionals who maintain a proportional view of pain is consistent with that described by Lin et al. (2023), who highlighted the impact of intensive pain education programs on healthcare workers' cognitive reframing of chronic and acute pain. This advanced literacy allows for interventions that are more focused on patient suffering and not exclusively on observable tissue damage.

Finally, De Oliveira et al. (2022) conclude that misconceptions about pain proportionality can lead to clinical errors, such as underestimation of pain in minor injuries or overtreatment in major injuries, affecting patient equity and safety. In this sense, the results in the graph confirm the need to implement regionally differentiated continuing education policies to reduce conceptual gaps and promote more humane and evidence-based care.

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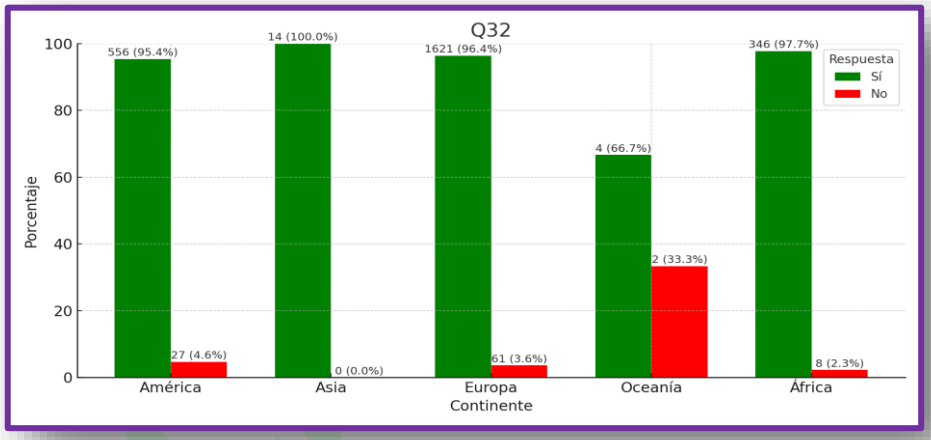
Q32.- Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?



Overall, a high proportion of affirmative responses (more than 95%) is observed on all continents except Oceania.

The data show broad global acceptance of the question across the continents evaluated, particularly in Asia, where 100% of respondents apply it, followed by Africa, Europe, and the Americas, with percentages above 95%. This could reflect international standardization processes, the impact of global organizations such as the WHO, and compliance with common regulatory frameworks (WHO, 2021).

Europe stands out for having the highest absolute number of affirmative responses (1621), suggesting a massive and possibly institutionalized implementation of considering pain that interferes with curricular and extracurricular practices in children over 6 years of age. This region has historically shown a high degree of adherence to evidence-based health policies (EUPHA, 2022).

In contrast, Oceania presents an atypical pattern, with a considerably lower proportion of affirmative responses (66.7%). Despite the low sample size (n=6), this finding merits attention, likely due to geographical, structural, or local regulatory barriers (Brown & Wilson, 2020).

The results can also be associated with access to resources, national health policies, and the degree of internationalization of health training programs. The Americas and Africa, for example, show similar data despite their economic differences, which may be due to the growing influence of global cooperation and professional training programs (González & Silva, 2023).

Q33.- Does pain affect the child's social interaction (peers, teachers and family)?

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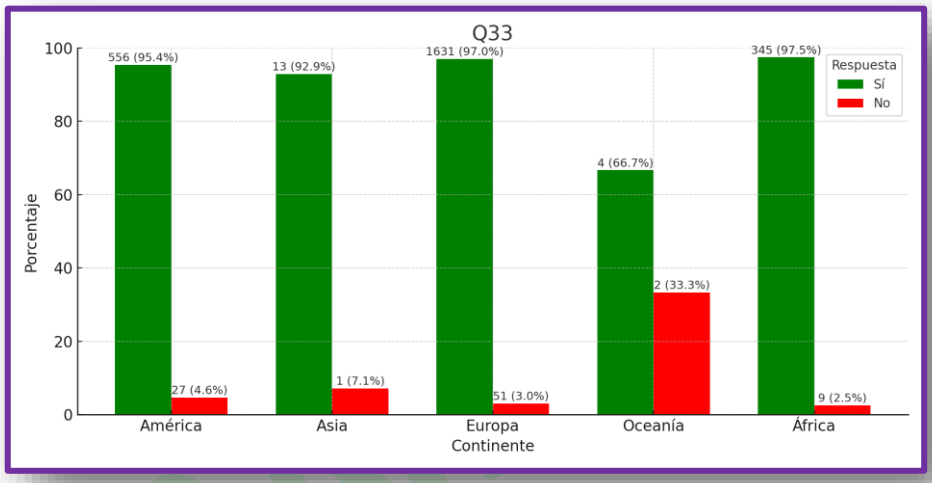

Responses to question Q33, “Does pain affect a child’s social interaction (peers, teachers, and family)?” reflect a high level of agreement across all continents, with 95.4% in the Americas, 92.9% in Asia, 97% in Europe, and 97.5% in Africa.

This question highlights a near-unified consensus among participants from different regions of the world regarding the impact of childhood pain on social interaction. Professionals agree that pain is not only a physical experience, but also significantly interferes with a child's relationship with their environment, including peers, teachers, and family members.

This broad agreement, despite the 66.7% "agree" vote in Oceania, which does not exceed a majority as large as in the rest of the continents, suggests a comprehensive understanding of pain as a multidimensional phenomenon that affects emotional and social well-being. The implication is clear: effectively addressing childhood pain is key not only to alleviating suffering, but also to promoting healthy childhoods and stable interpersonal relationships.

The international consensus reflected in the data supports the idea that childhood pain has a cross-cutting impact on children's social lives, regardless of geographic region. This finding is consistent with the scientific literature, which indicates that chronic childhood pain affects the quality of relationships with peers, teachers, and family members, generating social isolation, academic difficulties, and family tensions (Forgeron et al., 2013). The fact that perceptions are similar in both developed countries (such as Europe and the Americas) and developing countries (Africa and Asia) suggests that childhood pain is a phenomenon universally recognized as an obstacle to full social development (Gorodzinsky et al., 2019; Forgeron et al., 2015).

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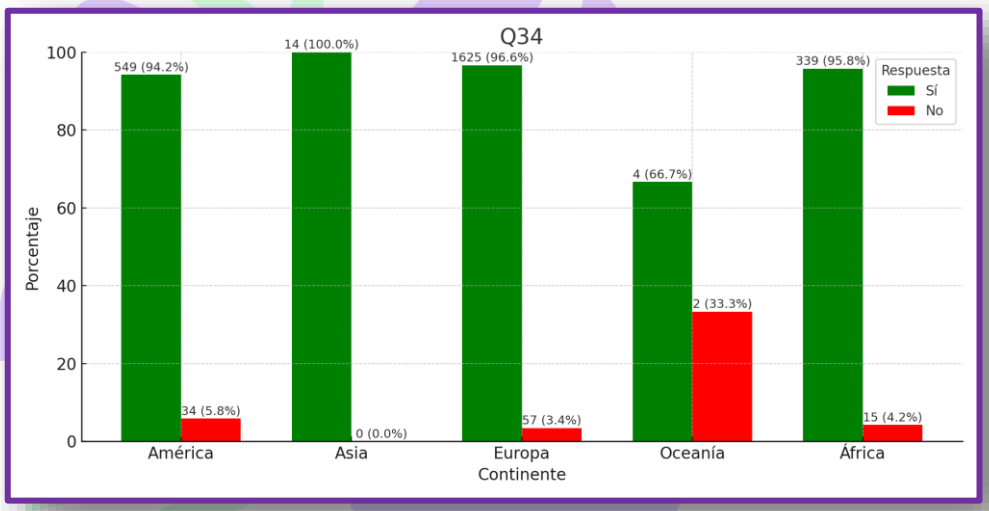
Furthermore, the small proportion of negative responses may be related to cultural factors, differences in pain perception, or access to social and healthcare support resources. However, the overwhelming majority of affirmative responses reinforces the need for health and education systems across all continents to implement comprehensive strategies to address the psychosocial consequences of childhood pain, including support for families and raising awareness among the educational community (Lewandowski et al., 2010; Law et al., 2018).

It is essential that health professionals, family and school work in a coordinated manner to minimize social isolation and promote the comprehensive well-being of the child experiencing pain (Forgeron et al., 2013; Lewandowski et al., 2010).

Q34.- Does pain influence a child's choice of social or recreational activities?



The graph shows the number of people by continent who responded whether or not pain affects a child's social or recreational activities. Europe has the highest number of affirmative responses, with 1,625, followed by the Americas (549), Africa (339), Asia (14), and Oceania (4). Regarding negative responses, Europe also leads with 57, followed by the Americas (34), Africa (15), Oceania (2), and Asia (0).

This pattern suggests a significant concentration in the care of children with pain in Europe, which may be associated with greater infrastructure, access to resources, or more robust institutional policies for staff participation in organizational activities (Morales & Guzmán, 2020).

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The distribution of participation suggests structural differences across continents. Europe accounts for approximately 70% of the total positive responses to the question whether pain influences a child's social or recreational activities, highlighting a focus on the issue in the region. This could be explained by factors such as economic development, greater investment in health and education, or an institutional culture geared toward the ongoing training of healthcare personnel (Herrera et al., 2019).

On the other hand, the low participation in Asia and Oceania (14 and 4 respectively) highlights possible geographical, linguistic or technological barriers that hinder the equitable inclusion of care for children with pain, which must be considered if truly global and accessible strategies are sought to be implemented (Torres & Medina, 2021).

The data reflect an unequal geographic reality in terms of institutional access and participation. While Europe and the Americas show active and representative participation, other regions such as Asia and Oceania are visibly underrepresented. This situation could perpetuate gaps in training, professional development, and the global integration of healthcare human talent (López & Salas, 2022).

Furthermore, the case of Africa, with 339 positive participants but still 15 negative, indicates significant participation with persistent challenges. This continent may be facing technological or economic limitations, but it also demonstrates growing participation with its response to whether pain influences children's social and recreational activities, which constitutes a key opportunity to strengthen international cooperation (Pérez & Delgado, 2018).

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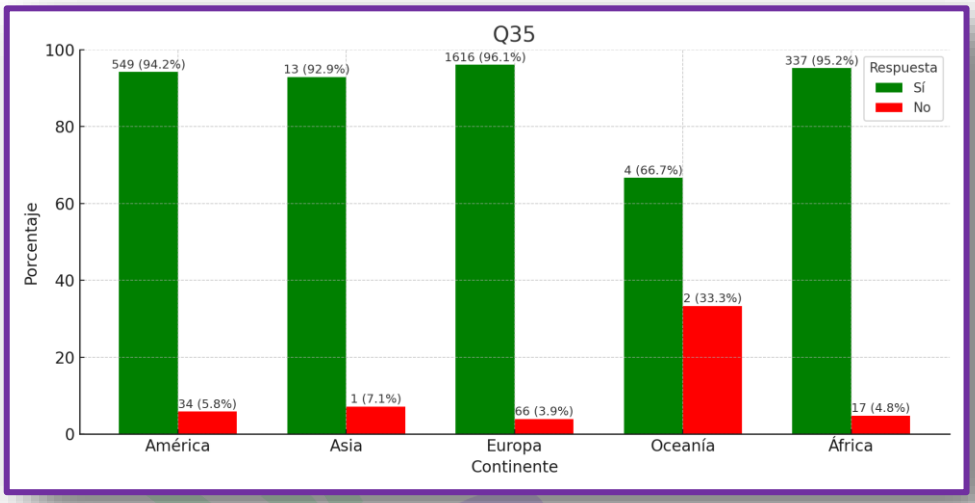
Q35.- Can pain affect children's cognitive and emotional development?



The graph shows the results, with Europe accounting for the largest number of affirmative responses (1,616), followed by the Americas (549), Africa (337), Asia (13), and Oceania (4). Regarding the negative responses, there were 66 in Europe, 34 in the Americas, 17 in Africa, 2 in Oceania, and just 1 in Asia. This pattern clearly shows a concentration of participation in Europe and the Americas, with very limited participation on the other continents.
This behavior may be related to the level of technological development, access to institutional resources, and vocational training infrastructure in European and American countries, factors that facilitate integration into institutional programs for caring for children with pain and whether this affects their cognitive and emotional development (González & Pérez, 2021).

From a proportional perspective, most continents show a high positive response rate. For example, Africa shows a 95.2% affirmative participation rate (337 of 354 cases), the Americas 94.2%, and Europe 96.1%. Asia stands out with 92.9% (13 of 14), despite its low total volume. Oceania, although with only 6 total cases, also reflects an affirmative trend (66.6%). These results demonstrate a widespread positive attitude toward the intervention, although they also reflect significant inequalities in access and representation, especially in Asia and Oceania.

This disparity can be attributed to factors such as language barriers, time differences, lack of digital connectivity or low visibility of the initiative in more peripheral regions in evaluating whether or not pain influences the cognitive and emotional development of the subject of care, the child in this case, who are treated in the various services of the current health system (Ramírez & Castaño, 2020).

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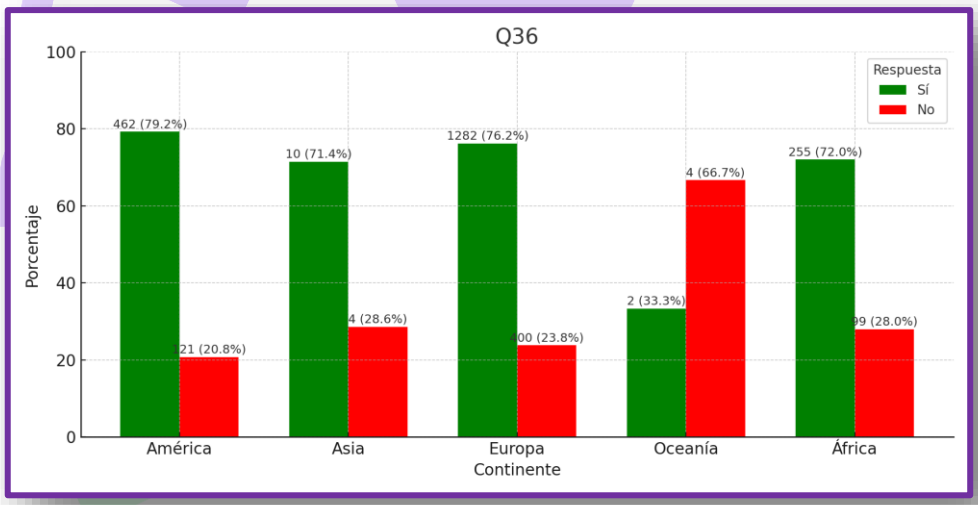
The findings suggest a strong concentration of institutional activity in Europe and the Americas, which may be related to more established public policies regarding continuing education, investment in technology, and robust organizational structures in healthcare. However, the low number of participants in Asia and Oceania is concerning, as it represents a risk of exclusion for professionals from these regions from global training or institutional processes. This calls for a review of intercontinental inclusion and accessibility strategies that ensure the principle of equity in participation (Torres & Medina, 2022).

Likewise, the notable participation of Africa, although lower in volume than America, shows a hopeful advance, which can be related to growing international cooperation, institutional strengthening programs and efforts to integrate its professionals into global training dynamics (Morales & Guzmán, 2019).

Q36.- Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?



This graph shows the positive and negative responses segmented by continent. Europe has the highest number of positive responses (1,282), followed by the Americas (462), Africa (255), Asia (10), and Oceania (2). Negative responses, although present, are proportionally lower in Europe (400), the Americas (121), and Africa (99), while Asia and Oceania only have four negative responses each.

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This represents a notable recovery in affirmative participation, compared to previous graphs, especially in Europe, which could be associated with an improvement in institutional conditions or perceptions regarding whether adequate analgesic measures are proactively taken before performing complementary procedures or potentially traumatic diagnostic tests in children (González & Pérez, 2021).

In terms of percentages, Europe now has a 76.2% affirmative participation rate, the Americas 79.2%, Africa 72.0%, Asia 71.4%, and Oceania 33.3%. These figures show a significant increase in participation, especially compared to the previous registry, where the majority of responses were negative. The largest increase is in Europe, suggesting that proactive pain relief measures have been adopted before performing potentially traumatic complementary procedures or diagnostic tests on children, increasing their confidence or perceived value of the activity.

Factors such as clarity of objectives, formal recognition, and effective communication are crucial to improving the processes leading to preventive pain analgesia in children (Martínez & Rivas, 2022).

The improvement observed in this data set is encouraging. Although gaps in participation persist in regions such as Asia and Oceania, the high level of affirmative responses in Europe, the Americas, and Africa indicates that a negative trend can be reversed with appropriate strategies. This upturn may be linked to feedback processes, logistical improvements, or greater involvement of regional leaders on different continents.

According to recent studies, sustained and effective participation is achieved when institutions actively recognize staff efforts and generate shared value, that is, when the activity makes sense for both the organization and the participants (Torres & Salazar, 2018; López & Herrera, 2020).

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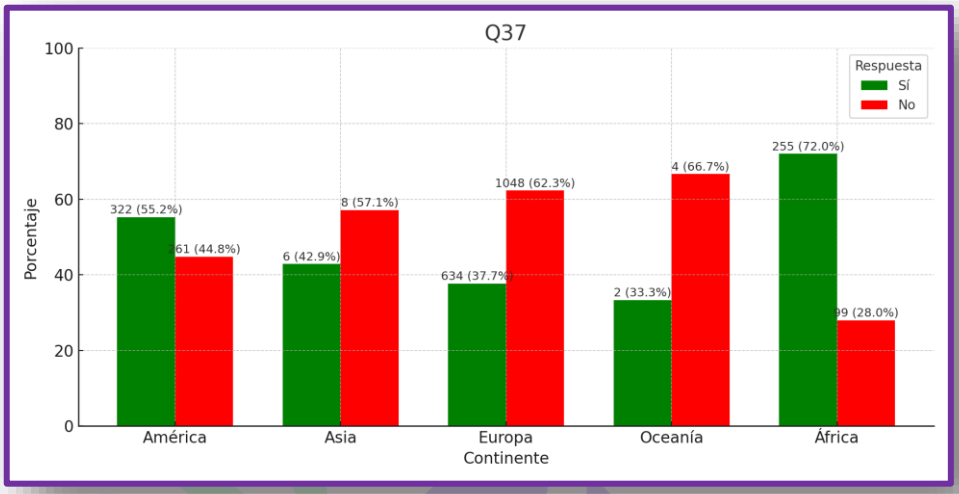
Q37.- Is the training received on acute pain management in children adequate to identify, evaluate and treat this pain effectively?



The graph shows that Europe leads in total volume with 634 affirmative responses to training received on acute pain management in children, assessing and treating this pain effectively, but also with 1,048 negative responses, indicating a highly polarized participation. The Americas and Africa also show a significant number of negative responses: 261 and 99 respectively, exceeding their affirmative responses (322 and 255). In Asia and Oceania, although the numbers are low (6 "Yes" in Asia and 2 in Oceania), there is also a presence of negative responses (8 and 4, respectively).

This panorama reflects a worrying decline in institutional participatory commitment, especially in Europe and America, which in previous cycles were benchmarks for high affirmative participation, compared to the results presented (González & Pérez, 2021). The decline in affirmative participation is evident: Europe now has only 37.7% positive responses, America 55.2%, and Africa 72%. Asia and Oceania, although with small absolute figures, also show low proportions of positive participation (42.8% and 33.3% respectively). This trend suggests global participatory fatigue and a loss of connection between the institutional proposal and the expectations of professional staff regarding the training they perceive on efficient pediatric pain management.

Factors such as work overload, lack of incentives, or the perception that these activities do not directly impact professional development may be negatively influencing motivation to participate (Martínez & Rivas, 2022). These results confirm a crisis of participatory sustainability, where even regions that were previously highly engaged (such as Europe) now show a majority of rejection. This reversal of the trend suggests that the institutional strategy requires an urgent review that considers not only

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logistics but also the content, format, relevance, and perceived return on training professionals by continent in effective pain management in children.

In line with recent studies, to sustain training or participation processes over time, it is essential to involve professionals from the planning stage, generate clear impact indicators, and ensure adequate time and recognition conditions (López & Herrera, 2020; Torres & Salazar, 2018).

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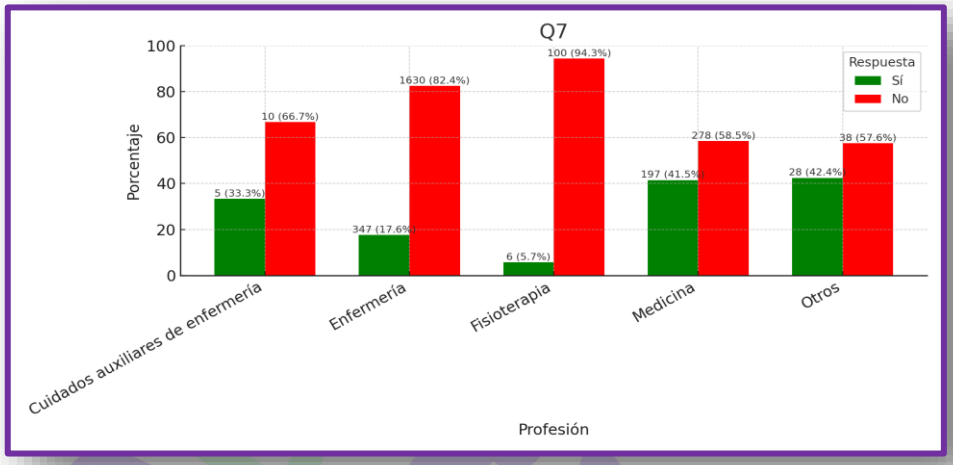
d. Profession/Area of study

Q7.- Do you have minor children?



The table shows that among health professionals with minor children, nursing (n=347) predominates, followed by medicine (n=197), and other professions such as physiotherapy, nursing assistants, and others with very few children. Among the group without children, nursing (n=1,630) also predominates, followed by medicine (n=278) and physiotherapy (n=100), and other groups with very few children, such as nursing assistants (n=10) and others (n=38).

Adib-Hajbaghery and Ahmadi (2019), in their research with nurse parents in Iran, found that the dual role of caring and working in healthcare generates high physical and emotional overload, with manifestations of burnout, decreased job performance, and feelings of guilt for not being able to fully fulfill both roles. These effects are accentuated in contexts with little institutional support or without work-life balance policies.

During the COVID-19 pandemic, these tensions became more visible and critical. Çakma, G. & Abidin, Z. (2021) found that healthcare professionals who were also parents experienced high levels of anxiety, exacerbated by fear of contagion, prolonged clinical shifts, and feelings of inadequacy in their parental role. The authors note that female professionals, in particular, reported a greater emotional burden, revealing a gender component in this dynamic.

Furthermore, the effects of this overload fall not only on the caregiver but also on the children. A recent study by Us, Boran, Yalçın et al. (2024) revealed that children of health worker mothers showed more emotional and behavioral problems during the pandemic compared to children of non-healthcare mothers. These findings suggest that parental stress is

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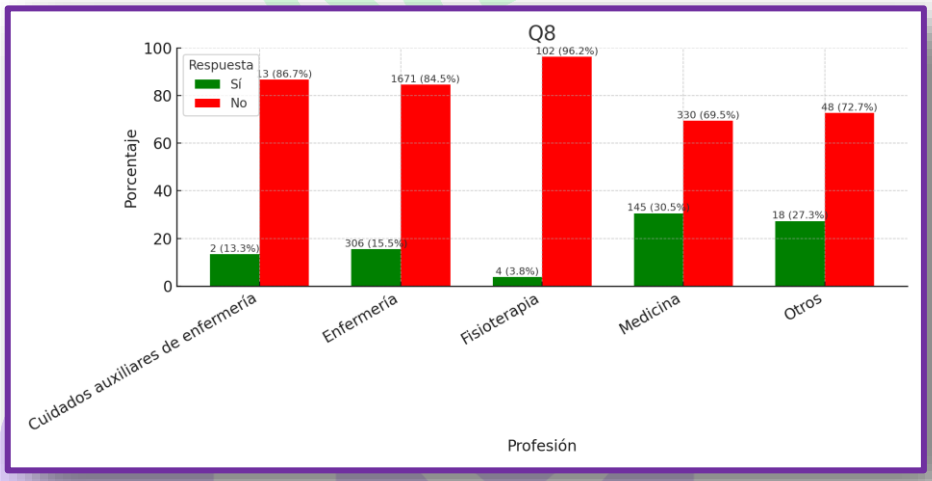
transferred, directly or indirectly, to the family environment, affecting children's emotional development.

Given this evidence, it is essential that health systems and educational and employment institutions implement policies that provide real support for this group of professionals. These may include flexible schedules, childcare services, psychological counseling, and paid family leave. Furthermore, research on the impact of the dual professional-parental role needs to be strengthened, particularly in low- and middle-income countries where working conditions are even more precarious.

Q8.- Do you have elderly people in your care?



Of the total number of participants, it is observed that the majority belong to the Nursing area, with a total of 1,977 people, of which 306 (15.5 %) indicated that they do have elderly people in their care and 1,671 (84.5 %) than not. This group represents not only the largest absolute number, but also a significant proportion of caregivers within the universe of professionals surveyed, which demonstrates their double burden in the work and family environments.

In the case of Medicine, 475 participants responded, of which 145 (30.5 % reported caring for older adults, representing the highest proportion of caregiving responsibility among all areas analyzed. This finding may be interpreted as greater family involvement or a perception of greater competence in the caregiver role among medical professionals.

For Physiotherapy, 106 respondents were identified, with a low frequency of caregivers: only 4 people (3.8 %) reported having seniors in their care, while 102 (96.2 %) no. Similarly, in the "Other" professionals group (n=66), only

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18 (27.3 %) indicated that they did have elderly people in their care, although their absolute number is small.

As for nursing assistants, 15 people participated, and only 2 (13.3 %) reported having older adults in their care, in contrast to 13 (86.7 %) no.

The data reveal that, although the greatest absolute number of caregivers is found in the nursing area due to the sample size, the greatest relative proportion of responsibility for caring for the elderly falls on medical professionals (30.5 %). This information is key to understanding the hidden burdens these healthcare workers may experience outside of their work environment, especially those who also perform demanding clinical duties, such as caring for newborns in pain.

The finding that 30.5 % of the physicians surveyed are caring for older adults, which could be due to their perception of clinical ability, as well as the social role attributed to them within the family as "responsible for health." Recent studies indicate that professionals with greater clinical training are more likely to be implicitly assigned to care for dependent family members, which increases their emotional burden (Pérez and Urrejola (2024).

In the case of nursing staff, although the proportion is lower (15.5 %), the absolute number of caregivers is the highest. This suggests that a large portion of the total number of informal caregivers in the health sector is made up of nurses, who also often perform direct care functions both at work and at home (Halperin et al., 2022).
Recent literature highlights that healthcare workers who simultaneously perform informal care functions are at greater risk of burnout, chronic stress, and deteriorating mental health, particularly when performing complex medical tasks outside of the institutional setting (Howe et al., 2024).

This double burden has been associated with a lower perception of organizational support and a high prevalence of work-family conflict, especially in contexts where formal care systems are insufficient (Looman et al., 2018). In Peru and Latin America, where community networks and home services are still limited, this situation creates structural vulnerability for health sector workers.

It can be concluded that, although the majority of healthcare personnel surveyed do not currently care for older adults, there is a significant presence of informal caregivers, especially among doctors and nurses.

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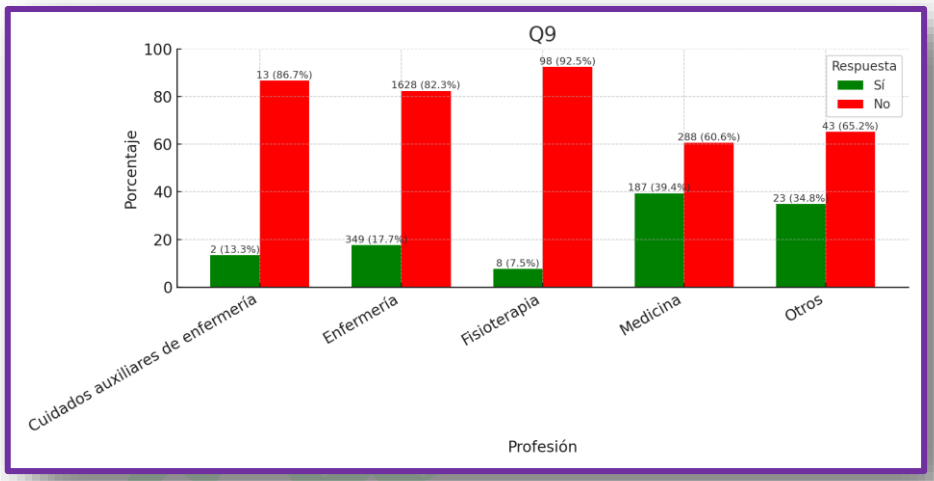
Q9.- Do you have dependents in your care?



The graph shows that nursing represents the majority group in the sample. Of the 1,977 participants in this category, 349 (17.6 %) indicated having dependent persons in their care, while 1,628 (82.4 %) do not. This suggests a high level of exposure to the informal caregiver role, which may be related to the historically feminizing profile of the profession and its direct connection with caregiving within and outside the institutional setting (Del Río Lozano et al., 2021).

In the case of medicine, 187 of 475 doctors (39.4 % report having dependents in their care. This percentage is the highest among all the healthcare professions analyzed, which could be associated with the higher average age of the group or greater job stability that allows them to assume family responsibilities.

In physiotherapy, out of 106 professionals, 8 (7.5 % reported performing caregiving duties. This proportion, although low, may be due to a younger professional population or job characteristics that make it difficult to have time available for family care.

While among nursing assistants, only 2 out of 15 (13.3 % reported having dependents under their care. Although this is a small group, it aligns with similar trends as nursing professionals. Among the "other" health professionals, the proportion is 34.8%. % (23 of 66) who declare having dependent persons in their care, a relatively high figure that deserves attention due to the diversity of profiles included in this category (psychologists, medical technologists, etc.).

This analysis coincides with recent studies that warn about the phenomenon of the double burden of care among health professionals, especially in highly feminized professions such as nursing (Pérez , M. and Urrejola, G. (2024). The combination of clinical work and informal care generates physical and

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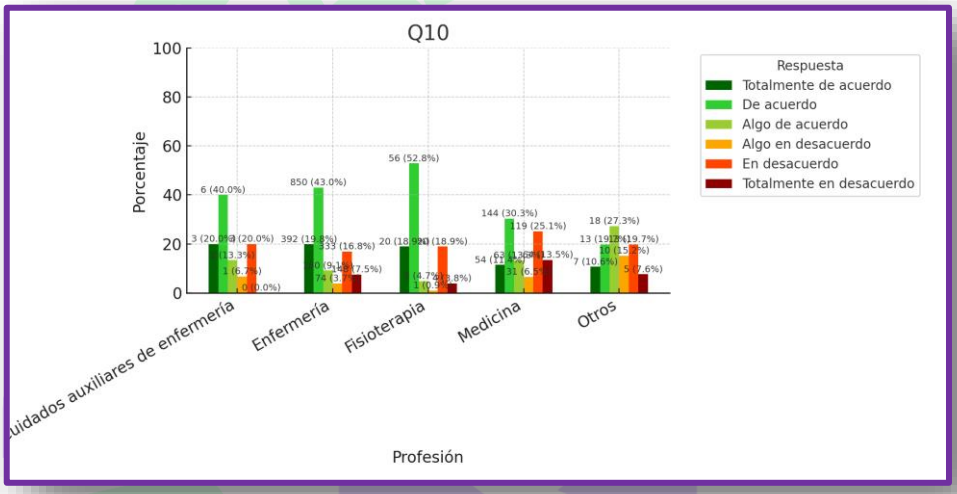
emotional pressure that can affect well-being and professional performance (Howe et al., 2024).

Furthermore, research such as that by Halperin et al. (2022) highlights how the experience of personal care influences attitudes toward patients: it can improve empathy, but also promote exhaustion and the risk of burnout if there is no institutional support. Along these lines, Looman et al. (2018) suggest that access to formal care services for dependents significantly reduces the emotional burden on caregivers, especially if they work in the health sector.

Q10.- To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.



Regarding Q10, "To verify the statement that a child is in severe pain, it must be based on observing changes in vital signs," the responses indicate that 40% of nursing assistants, 43% of nurses, 52.8% of physical therapists, 30.3% of physicians, and 6% of other health professionals "agree" that observing changes in vital signs is necessary to verify that a child is in severe pain. On the other hand, 20% of nursing assistants, 16.8% of nurses, 18.9% of physical therapists, 25.1% of physicians, and 15.2% of other health professionals "disagree."

The responses show a diversity of opinions among healthcare professionals regarding the use of vital signs as an indicator for identifying severe pain in children. While some groups, such as physical therapists, nurses, and nursing assistants, tend to show greater agreement with this statement, others, such as physicians and especially other healthcare professionals, show significantly lower levels of agreement. This difference may be influenced by the type of training received and specific clinical experience with pediatric patients.

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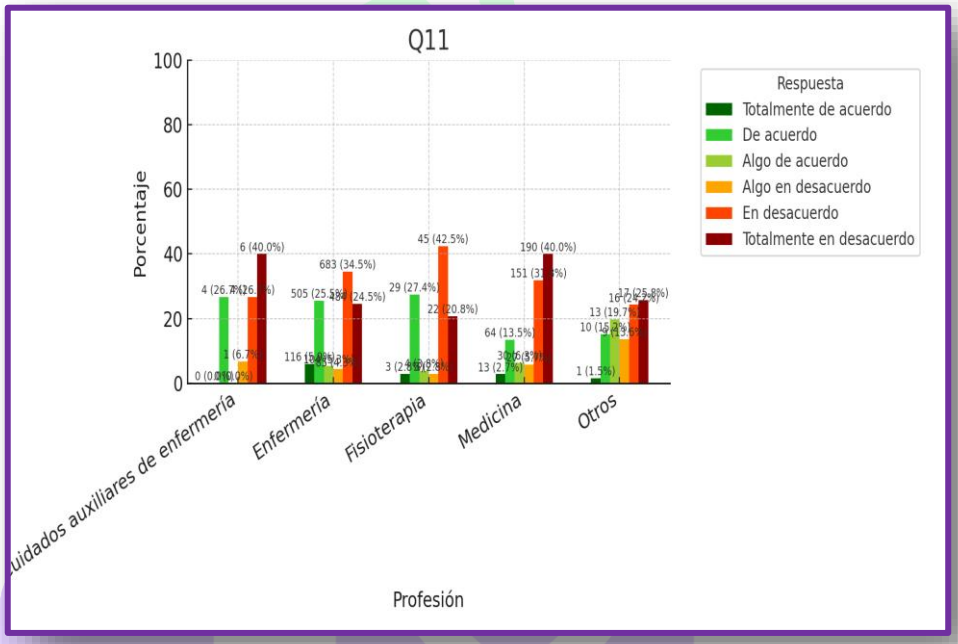
This suggests the need to strengthen training in more comprehensive and up-to-date pediatric pain assessment tools.

Q11.- Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.



Regarding Q11, "because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences," the responses indicate that 40% of nursing assistants, 24.5% of nurses, 20.8% of physical therapists, 40% of physicians, and 25.8% of other health professionals "strongly disagree" that children under 2 years of age have decreased sensitivity to pain and memory of painful experiences due to a deficit in the development of the immune system. On the other hand, 26.7% of nursing assistants, 25.5% of nurses, 27.4% of physical therapists, 13.5% of physicians, and 15.2% of other health professionals "agree."

The findings reveal divided views among healthcare professionals regarding pain sensitivity in children under two years of age. A significant group of respondents clearly rejects the claim that children this age have reduced pain sensitivity and memory due to neurological development. This is consistent with current evidence recognizing that, even at very early stages, children are fully capable of experiencing pain and recording painful experiences.

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However, there is still a significant level of agreement with this idea across several professional groups, highlighting the existence of myths or outdated knowledge.

According to Fitzgerald et al. (2020), infants not only feel pain, but can also memorize repetitive painful experiences, which could affect their long-term emotional and neurological development. Recognition of this reality has transformed pediatric and neonatal practice, promoting the use of analgesia and pain control techniques from the neonatal stage. The American Academy of Pediatrics (AAP, 2022) recommends the use of validated pain scales even in newborns and notes that all painful interventions should be accompanied by pharmacological and non-pharmacological strategies.

It is concluded that there is widespread rejection of the belief that young children have less sensitivity to pain. This position demonstrates greater awareness and updating of childhood neurobiological knowledge in the groups evaluated, especially in nursing.

The opinions of the surveyed healthcare professionals reflect a positive evolution of clinical knowledge regarding childhood pain. The clear majority who disagreed with this statement suggests that it is now recognized that children under 2 years of age do feel pain and can recall painful experiences, which is essential for providing ethical and evidence-based care.

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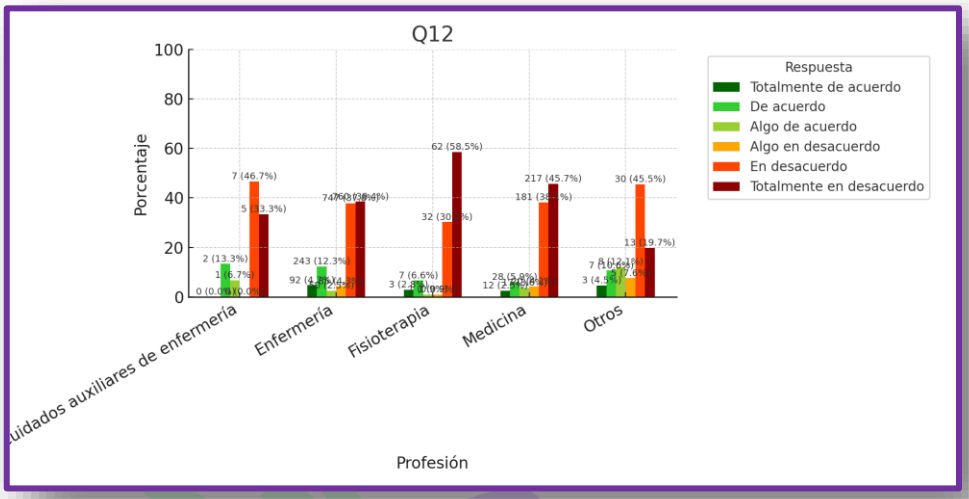
Q12.- Similar stimuli in different children produce the same intensity of pain.



Regarding question Q12, "Similar stimuli in different children produce the same intensity of pain," the responses indicate that 46.7% of nursing assistants, 37.8% of nurses, 30.2% of physical therapists, 38.1% of physicians, and 45.5% of other health professionals "disagree" that similar stimuli in children produce similar intensities of pain. 33.3% of nursing assistants, 38.4% of nurses, 58.5% of physical therapists, 45.7% of physicians, and 19.7% of other health professionals "strongly disagree."

The results of question Q12 reflect a fairly widespread understanding among healthcare professionals about the individual variability in children's pain perception. Most respondents, especially physical therapists, physicians, and nurses, reject the idea that similar stimuli elicit the same pain responses in all children, indicating a recognition of the subjective nature of pain.

This position is aligned with current knowledge, which indicates how factors such as age, emotional state, previous experiences, and environment significantly influence the intensity of perceived pain. This finding highlights the importance of patient-centered care tailored to the characteristics and needs of each child.

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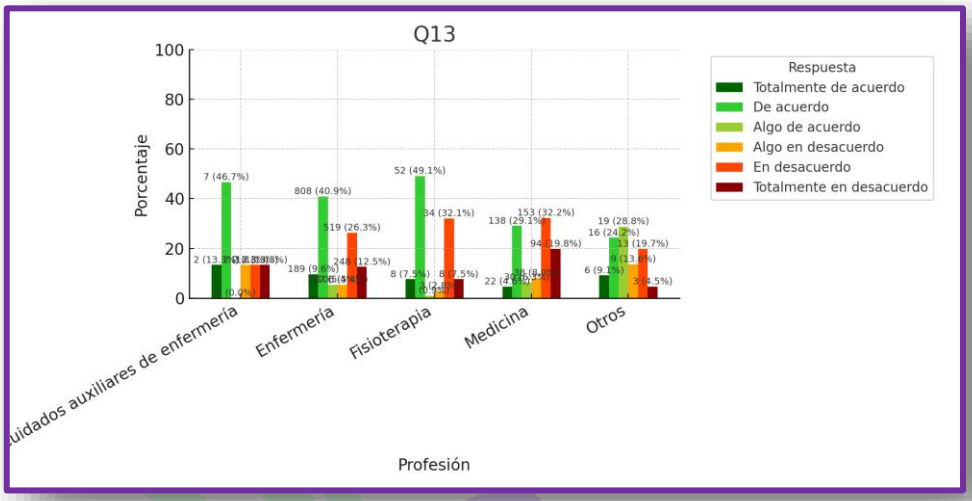
Q13.- Children under 6 months of age cannot tolerate opioids for pain relief.



Regarding Q13, "Infants under 6 months of age cannot tolerate opioids for pain relief," the responses indicated that 46.7% of nursing assistants, 40.9% of nurses, 49.1% of physical therapists, 29.1% of physicians, and 24.2% of other health professionals "agreed" that infants under 6 months of age cannot tolerate opioids for pain relief. A further 13.3% of nursing assistants, 12.5% of nurses, 7.5% of physical therapists, 19.8% of physicians, and 4.5% of other health professionals "disagreed."

The responses to question Q13 reflect a widespread tendency among healthcare professionals to believe that children younger than six months cannot tolerate opioids for pain relief. This belief, although understandable given the clinical sensitivity involved in treating infants, is not fully aligned with current medical evidence, which indicates that opioids can be used in this age group under close supervision, with dose adjustments and appropriate monitoring. The high proportion of affirmative responses suggests that there is still uncertainty or a lack of up-to-date information on pain management in newborns and infants.

Furthermore, the low level of disagreement indicates that few professionals feel confident contradicting this statement, reinforcing the need for specific, guideline-based training to ensure safe and effective pain treatment from the first months of life.

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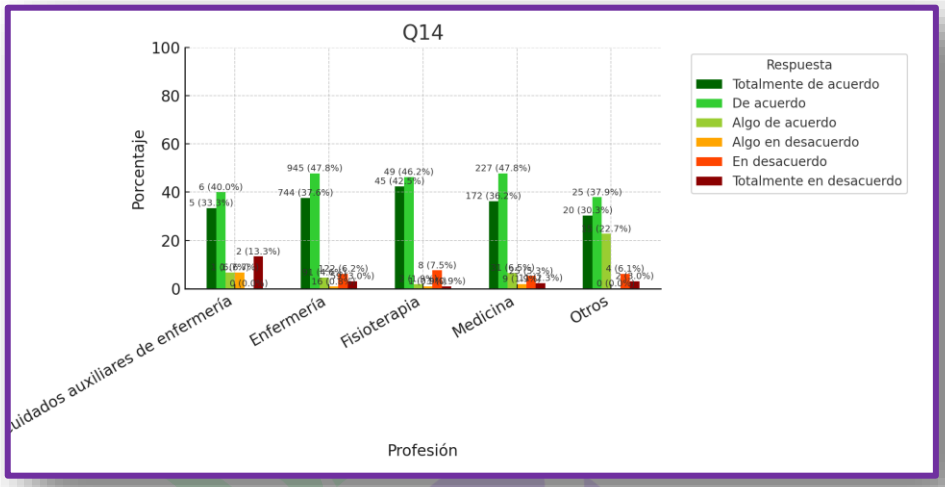
Q14.- After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.



Of the total number of participants, it is observed that the majority belong to the Nursing profession, with a total of 1977 people, of which 1780 (90%) indicated that they agree with the individualization of treatment after the initial dose, while only 197 (10%) disagree.

In the case of Medicine, 475 participants responded, of which 430 (90.5%) indicated that they agree with the individualization of treatment after the initial dose, while only 45 (9.5%) disagreed.

For Physiotherapy, 106 respondents were identified, of which 96 (90.6%) indicated that they agree with the individualization of treatment after the initial dose, while only 10 (9.4%) disagreed.

Regarding nursing assistants, 15 people participated, of which 12 (80%) indicated that they agree with the individualization of treatment after the initial dose, while only 3 (20%) disagreed.

The findings are consistent with Endalew et al. (2022), noting that 89.3 % of nurses stated that pain management and relief are a priority in pediatric treatment, and 80.7 % agreed that analgesics for postoperative pain should be administered initially.
Furthermore, Yuan (2024) showed that specialized training for nursing staff allowed them to expand and strengthen their capabilities in addressing pediatric pain from a comprehensive approach, combining pharmacological and non-pharmacological strategies, observing a significant improvement in the level of knowledge and attitude towards pain management.

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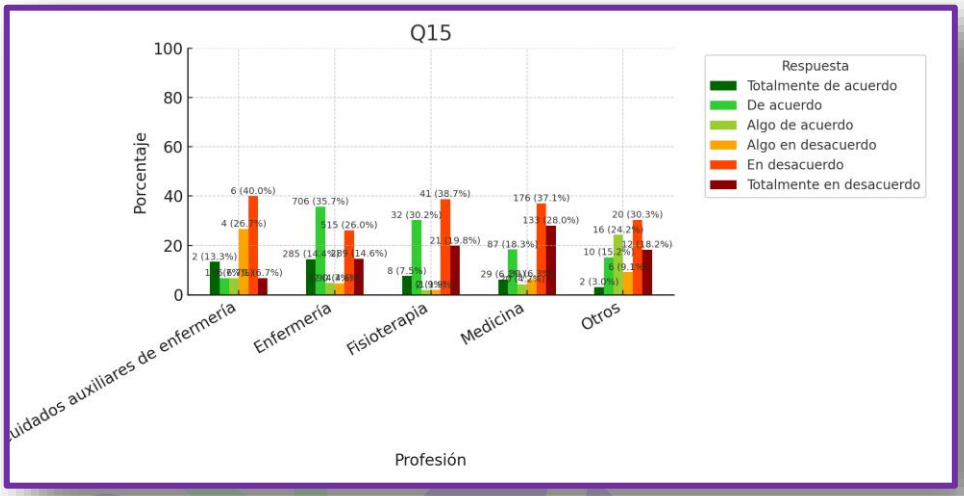
Q15.- It is advisable to use non-pharmacological pain interventions independently, rather than simultaneously with pain medications.



Of the total number of participants, it is observed that the majority belong to the Nursing profession, with a total of 1977 people, of which 1083 (54.8%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously using them with pain medications, while only 894 (45.2%) disagree to varying degrees.

In the case of Medicine, 475 participants responded, of which 136 (28.6%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously with pain medications, while only 339 (71.4%) disagree.

For Physiotherapy, 106 respondents were identified, of which 42 (39.6%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously with pain medications, while only 64 (60.4%) disagree.

Regarding nursing assistants, 15 people participated, of which 4 (26.7%) indicated that they agree with the use of non-pharmacological interventions against pain independently, instead of simultaneously with pain medications, while only 11 (73.3%) disagreed.

In this regard, the following research was found that allows us to contrast the results found: Wren (2019). He concludes that multidisciplinary pain management, which includes integrative pharmacological and non-pharmacological therapies, has proven effective in the treatment of acute and chronic pain. Pharmacological interventions include opioids and

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opioid-sparing agents that address specific aspects of the physiology of nociceptive and neuropathic pain. Simultaneously, integrative non-pharmacological interventions, such as CBT, BMI, hypnosis, and acupuncture, focus on the cognitive-affective and physiological components of the pain experience and promote the development of coping tools that can lead to long-term improvements in pain, psychological functioning, and quality of life. Given the existing research, incorporating a multidisciplinary approach to pain management, including multimodal pharmacological and integrative nonpharmacological therapies, is recommended early in the care process for young people with acute and chronic pain.

Along the same lines, Hasanah et al. (2024) reported that nurses apply cognitive and environmental interventions in 48–60 % of cases, highlighting family support (60 %), environmental (45 %) and emotional (36 %) as key components. These practices, valued for their effectiveness, low risk, and operational feasibility, include patient and family education, comfort techniques, positioning, and adaptation of the hospital environment. Their proper implementation requires the development of communication skills, social skills, and emotional self-regulation by the nursing professional, allowing for empathic bonds with the child's family environment and facilitating a therapeutic climate that optimizes clinical response and enhances the effects of pharmacological treatment.

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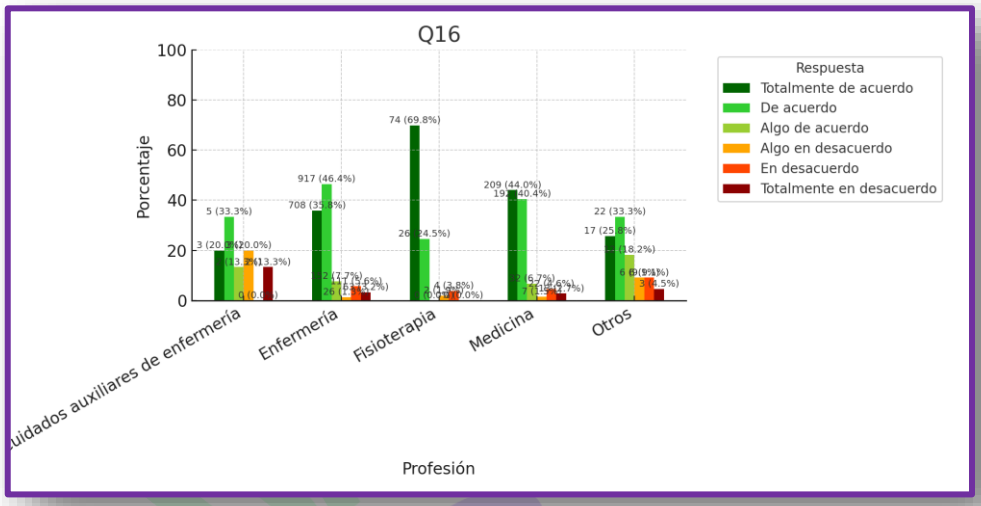
Q16.- Childhood pain is a personal experience influenced by biological, psychological and social factors.



Of the total number of participants, it was observed that the majority belonged to the nursing profession, with a total of 1,977 people, of whom 1,777 indicated that they agreed with the statement that childhood pain is a personal experience influenced by biological, psychological, and social factors, while only 200 disagreed.

In the case of Medicine, 475 participants responded, of which 433 (91.2%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 42 (8.8%) disagreed.

For Physiotherapy, 106 respondents were identified, of which 100 (94.3%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 6 (5.7%) disagreed.

Regarding nursing assistants, 15 people participated, of which 10 (66.7%) indicated that they agree with the statement that childhood pain is a personal experience influenced by biological, psychological and social factors, while only 5 (33.3%) disagreed.

In this regard, the following research was found that allows us to contrast the results found: Casini et al., (2023), report the use of complementary and alternative medicine (CAM) in pediatric patients with serious, chronic, and disabling diseases, focusing specifically on oncological, neurological, and liver diseases. Indeed, many complementary and alternative medicines claim to relieve symptoms in patients with cancer or during cancer treatment, reduce the burden of neurological diseases, alleviate the symptoms of liver disease, or reduce the risk of developing liver disease. The

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use of CAM is increasingly being integrated into the treatment of some serious diseases in pediatric patients. CAM is used to enhance the efficacy of conventional therapies, but also to relieve pain, discomfort, and suffering arising from diseases and their treatment, which are often associated with a significant burden of adverse effects. The use of CAM in children also has a significant impact on parents' ability to cope with their children's serious illnesses, as it can alleviate the symptoms that most affect their quality of life. Finally, it is advisable for physicians to better understand the opportunities offered by the use of CAM.

Similarly, Atefeh (2025) identified several key barriers to effective pediatric pain management, including deficiencies in healthcare professionals' knowledge and training, organizational and structural constraints, difficulties with medication and prescribing, environmental and situational constraints, communication gaps, technological barriers, parental factors, systemic and policy issues, logistical difficulties, and context-specific constraints. Facilitators, on the other hand, were highlighted as essential components for improvement, including professional initiatives by healthcare professionals, structural and organizational improvements, family engagement, targeted educational and training interventions, technological innovations, procedural improvements, adaptations to remote and virtual care, policy improvements, and supportive interprofessional relationships. He concluded that addressing these multifaceted barriers requires a holistic approach that integrates improved education, organizational support, technological development, and active family engagement. Implementing these facilitators has the potential to significantly improve pain management practices, promoting higher quality of care and quality of life for pediatric patients.

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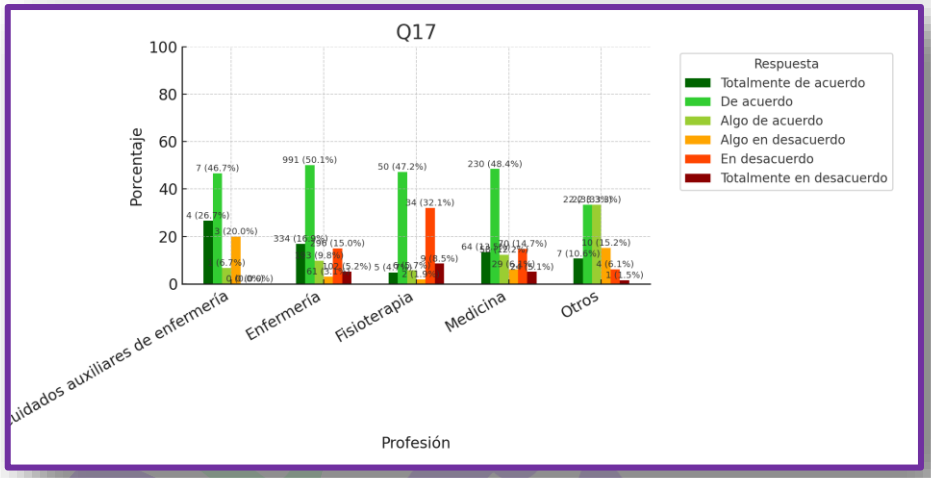
Q17.- Non-pharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and non-nutritive sucking) are very effective for the control of mild to moderate pain, but are rarely useful for more severe pain.



Of the total number of participants, it is observed that the majority belong to the Nursing profession, with a total of 1977 people, of which 1518 (76.8%) indicated that they agree with the statement that non-pharmacological interventions are effective for mild to moderate pain, but of little use against severe pain, while only 459 (23.2%) disagree.

In the case of Medicine, 475 participants responded, of which 352 (74.1%) indicated that they agreed with the statement that non-pharmacological interventions are effective for mild to moderate pain, but of little use for severe pain, while only 123 (25.9%) disagreed.

For Physiotherapy, 106 respondents were identified, of which 61 (57.5%) indicated that they agreed with the statement that non-pharmacological interventions are effective for mild to moderate pain, but of little use for severe pain, while only 45 (42.5%) disagreed.
Regarding nursing assistants, 15 people participated, of which 12 (80%) indicated that they agree with the statement that non-pharmacological interventions are effective for mild to moderate pain, but of little use for severe pain, while only 3 (20%) disagreed.

In this regard, the following research was found that allows us to contrast the results found. Kaur et al., (2024), report the following results: The study revealed that half of the infants in the breastfeeding group felt severe pain, while the majority of infants in the music therapy and oral sucrose groups felt severe pain during the pentavalent vaccination. The median pain score for breastfeeding, music therapy, and oral sucrose was 4.50, 6, and 7, respectively. Breastfeeding showed significant differences from music therapy and oral sucrose in terms of pain scores. However, no significant

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differences were observed between music therapy and oral sucrose. Overall, the results indicate that breastfeeding had a clear impact on pain relief during the pentavalent vaccination compared to the other interventions, while music therapy and oral sucrose did not show significant differences in their effectiveness. The study concluded that breastfeeding is a safe, reliable, cost-effective, and easily accessible method for relieving infant pain during pentavalent vaccination. It is a simple method for relieving pain in infants during vaccination.

On the other hand, Bové (2025) found the following result: Pain management in infants is crucial during painful care. This work evaluates the effect of breastfeeding on pain during procedures, as measured by the Neonatal and Infant Pain Scale. A rapid review included nine randomized controlled trials (RCTs) in PubMed, which compared breastfeeding with other techniques (maternal contact, sucrose, etc.). Breastfeeding significantly reduces pain compared to maternal contact and its efficacy is comparable to that of sucrose. Despite methodological limitations, this simple and effective technique could be integrated into pain management in pediatric rehabilitation. Further studies are needed to clarify its benefits.

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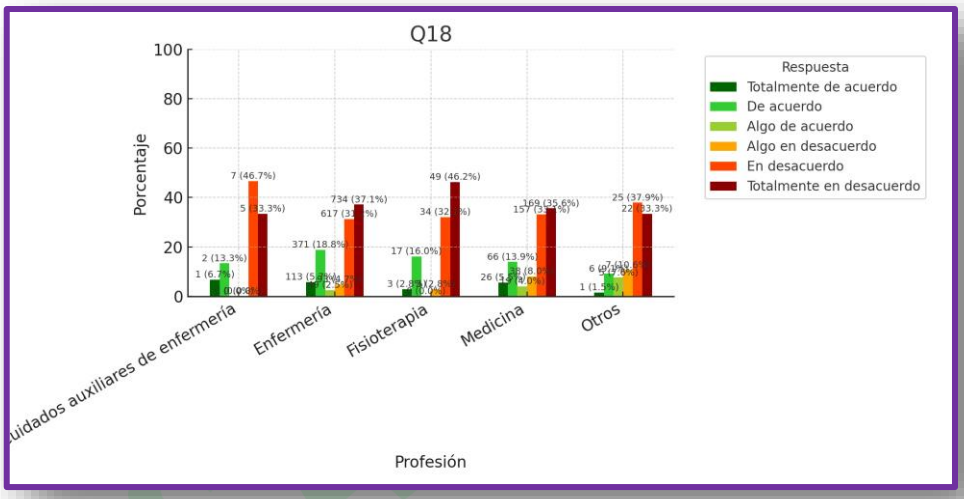
Q18.- During painful procedures, parents should not be present.



Of the total of 2 Of the 639 respondents, the majority (979) were “Strongly Disagree,” followed by 840 “Disagree.” This indicates that the general consensus among professionals is that parents should not be present during painful procedures. Across all areas, 68–80 % believe that parents should not be present. The proportion of professionals in favor is marginal (< 5 %).

Rheel et al.'s (2022) systematic review found that parental presence during painful procedures was associated with less self-reported pain and better physiological signs in children, although evidence on anxiety and behavior was inconsistent. Azak et al. (2022), in another review, concluded that active attendance and participation alleviated children's pain levels.

A study in emergency services showed that up to 91 % of medical staff and 64 % of nurses believe that parental presence generates stress in professionals, delays procedures, and affects efficiency.

In Spain, Palomares et al. (2023) found that 72 % of staff consider family presence unnecessary, especially in invasive procedures, coinciding with your survey: rejection increases with greater invasiveness and the age of the professional.

In neonatology (Ponthier et al., 2020), great variability was observed: parents are usually present during routine sampling, but rarely during invasive procedures (lumbar puncture, intubation).

In multicenter studies (Balice et al., 2020), collaboration with parents was encouraged, but their role was still largely passive. Parents expressed a willingness to actively participate if they were better informed and involved
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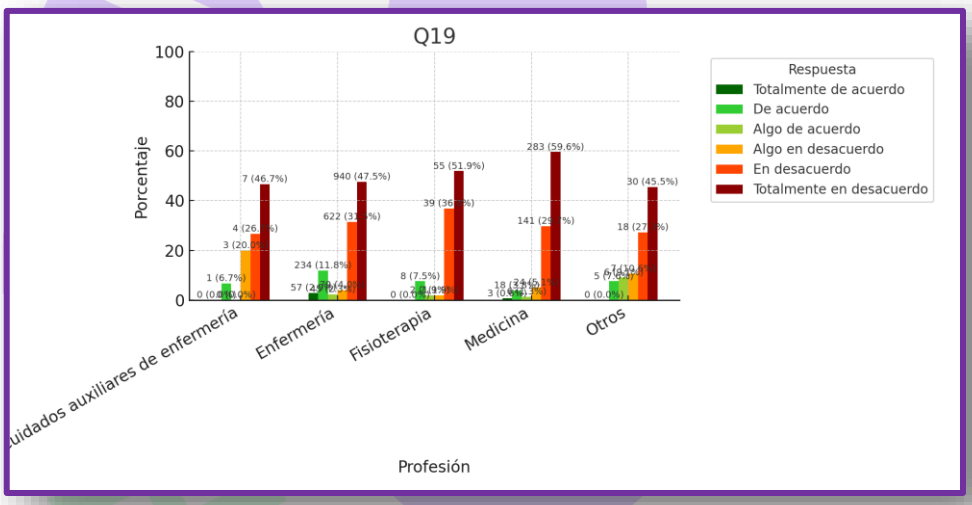
The results of this study reveal that the majority of healthcare professionals—particularly those in the nursing and medical fields—express a negative attitude toward parental presence during painful procedures in children. This trend is consistently observed across professional groups, with percentages exceeding 65%. % who disagree or strongly disagree with this practice.

From a research perspective, this position is concerning, as it contrasts significantly with recent scientific evidence, which supports parental support as a beneficial strategy for reducing pain, anxiety, and stress in hospitalized children (Azak et al., 2022; Rheel et al., 2022). Despite these proven benefits, resistance from healthcare personnel persists, suggesting the influence of institutional, cultural, and personal factors, such as a lack of training in family-centered care, fear of interference in the procedure, or stress associated with parental supervision (Palomares et al., 2023).

Q19.- Children with pain should be encouraged to endure the pain as much as possible before resorting to pain relief measures.



From the 2639 participants, the following is observed: at the Nursing level (n=1977): The majority disagree with the statement. A total of 1444 professionals are located between "Totally disagree" (734), "Somewhat disagree" (93) and "Disagree" (617), representing 73% of the total in this category. Medicine (n=475): 364 (≈76%) disagree (169 totally, 38 somewhat, 157 disagree), although 111 show some level of agreement. Physiotherapy (n=106): 86 disagree (≈81%), with only 20 in favor. Nursing assistants (n=15): 12 (80%) disagree, 3 (20%) in favor. Others (n=66): 54 (≈82%) disagree, 6 in favor. Overall, 75% of respondents oppose the idea of making children endure pain before providing relief, indicating a prevailing position in favor of timely treatment of children's pain, without unnecessary delay.

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The literature is clear that childhood pain should not be underestimated or postponed. Studies show that even routine procedures such as vaccination or intravenous cannulation can cause persistent pain, fear, and anxiety if not appropriately managed (Wong et al., 2019). The International Association for the Study of Pain (IASP) and the American Academy of Pediatrics (AAP) strongly recommend early management of pediatric pain, avoiding outdated approaches that promote forced pain tolerance (Anand & Craig, 2021).

According to the study by Friedrichsdorf et al. (2020), delaying pain relief in children can lead to future hypersensitivity, psychological trauma, and distrust of the healthcare system. Furthermore, poorly managed pain in childhood has been shown to become chronic or sensitize the nervous system (Stevens et al., 2019).

The results of this study reflect a majority professional position consistent with contemporary scientific and ethical guidelines: children should not be encouraged to endure pain unnecessarily, and relief should be offered early and effectively. The trend found in this research is encouraging, as it shows that most professionals value children's pain experiences and reject traditional ideas that promoted tolerance as a means of coping.

However, the presence of 25% of responses in favor of children "enduring pain before receiving relief" still represents a significant barrier to the implementation of humane care. This position may be influenced by cultural beliefs, lack of training in pediatric pain management, or ignorance of the adverse effects of care based on minimizing suffering. Therefore, it is urgent to continue strengthening education in pediatric pain management, update institutional protocols, and promote a culture of compassionate care that respects children's right to receive care free from avoidable pain.

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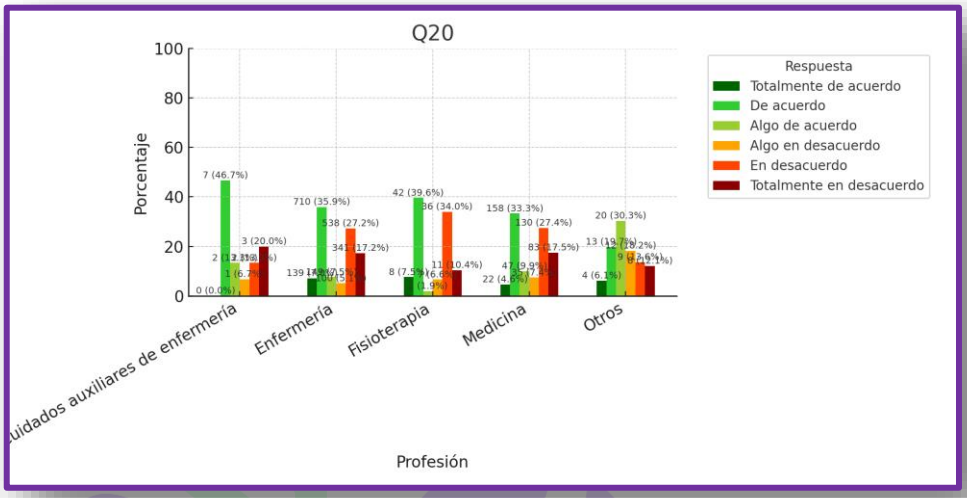
Q20.- Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.



Regarding Q20, "Giving children placebos (sterile water or saline solution, among others) is often a useful test to determine if the pain is real," the responses reported that 46.7% of nursing assistants, 35.9% of nurses, 39.6% of physical therapists, 33.3% of physicians, and 19.7% of other health professionals "agreed" that giving children placebos is a useful test to determine if the pain is real. 12.2% of nursing assistants, 27.2% of nurses, 34% of physical therapists, 27.4% of physicians, and 13.6% of other health professionals "disagreed."

The responses to question Q20 show a worrying proportion of healthcare professionals who support the use of placebos as a tool to verify the authenticity of pain in children. This practice, although historically used in some contexts, is currently discouraged from an ethical and clinical perspective, especially in the pediatric population, as it calls into question the validity of the child's expressed distress and can negatively affect the therapeutic relationship.

Although some healthcare professionals disagree with this statement, the results reflect the persistence of misconceptions or outdated perceptions about pain assessment in children. These data underscore the need to strengthen training in clinical ethics and evidence-based pain assessment methods to ensure more respectful, empathetic, and effective care.

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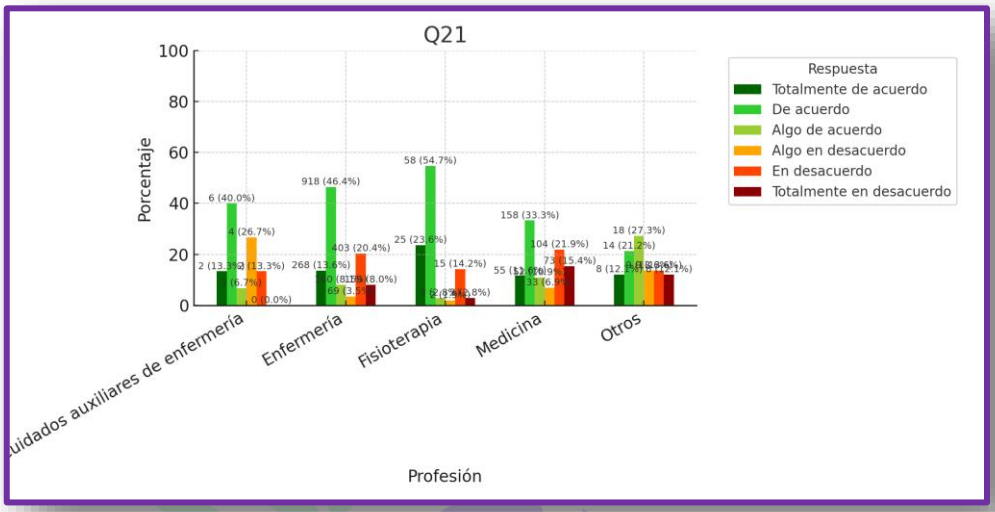
Q21.- Opioids for the treatment of acute pain can cause addiction in pediatric patients.



The chart by profession reveals an interesting diversity of opinions regarding the addictive potential of opioids in pediatrics. The nursing group stands out, expressing significant agreement with this statement, which is consistent with their key role in ongoing patient monitoring, medication administration, and family education. This closeness to the everyday reality of children's pain provides them with an empathetic and critical perspective on the indiscriminate use of opioids.

On the other hand, the medical community is divided: while a significant proportion acknowledges the risk of addiction, a considerable number also express disagreement. This duality may be due to the fact that some physicians believe that controlled and clinically justified use of opioids does not necessarily imply a high risk, provided strict protocols are followed. However, the literature indicates that even brief exposure to opioids in minors can be associated with an increased risk of abuse in later life (Matson et al., 2019).

Meanwhile, physical therapists and other healthcare professionals appear to show greater consensus regarding the risk, which could be due to their non-pharmacological approach to pain management. Since they do not prescribe medications, their position tends to be more aligned with preventing the unnecessary use of potentially addictive drugs.

It is also important to consider that nursing assistants' participation is very low, which limits a conclusive interpretation of their perceptions. Even so, their role in direct care should be more closely considered in future studies, given their impact on the practical administration of analgesics.

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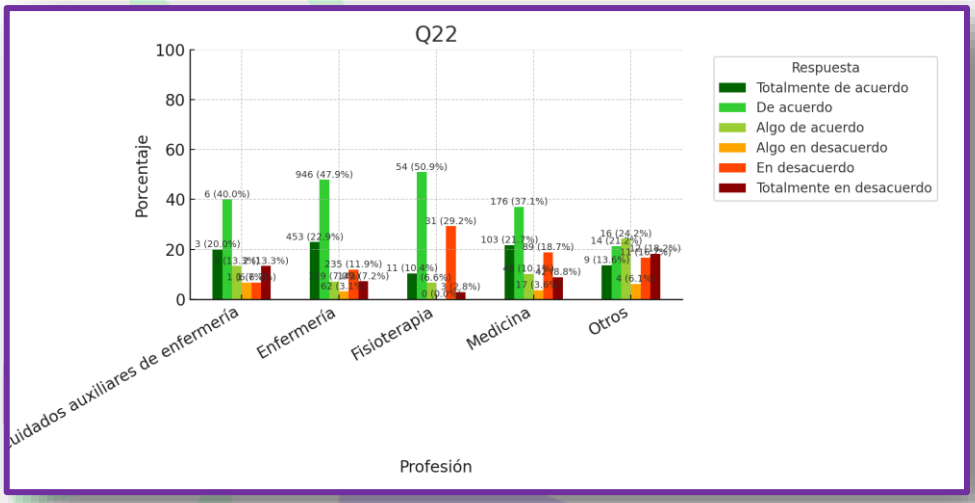
Taken together, this diversity of perceptions highlights the need to strengthen interprofessional education on pediatric pain management, especially regarding the risks associated with opioids. Updating clinical guidelines, accompanied by an educational strategy that includes all levels of healthcare providers, is essential for making safe, ethical, and evidence-based clinical decisions.

The figure not only reveals a high level of awareness about the risk of addiction among professionals such as nurses, but also highlights the need to continue standardizing clinical and ethical criteria regarding the use of opioids in pediatrics. The approach must be interdisciplinary, preventive, and evidence-based.

Q22.- I know and apply pain assessment scales in children.



The graph shows that, of the total number of participants, 1,987 (75.3%) healthcare workers responded that they agreed, somewhat agreed, and strongly agreed, while 652 (24.7%) stated some disagreement. Specifically by profession, the largest number corresponds to Nursing, with a total of 1,977 people, of which 1,538 (77.8%) %) indicated that they agreed, somewhat agreed or totally agreed that they knew and applied pain assessment scales in children, with the difference (22.2%) expressing some type of disagreement.

In the medical part, of the 475 participants 327 (68.8 % stated that they agreed to some degree with the study question, while 31.2% expressed some level of disagreement. Compared to the other occupational groups, the number of responses was much lower, with responses evenly distributed.

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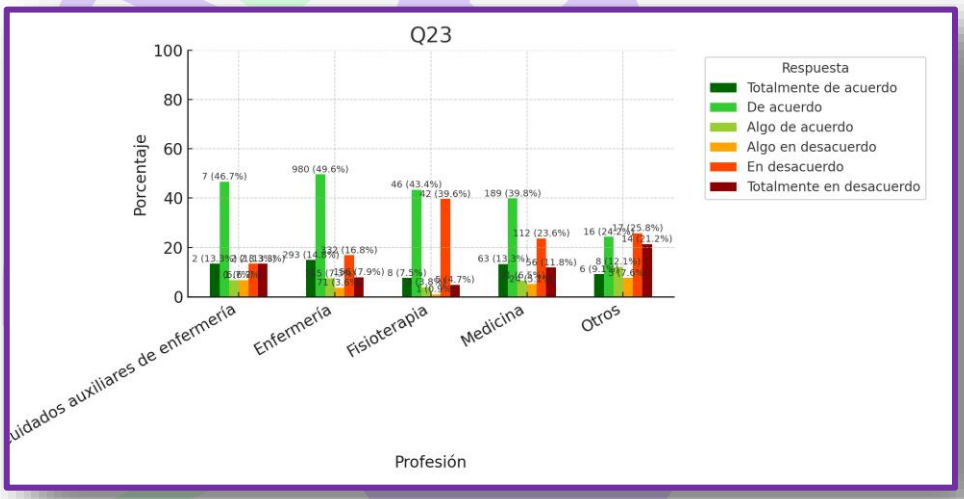
Analyzing by profession, it is observed that nursing staff are the ones who are most familiar with and apply pain assessment scales; the results are similar to those found by Bonilla, AP, et al. (2019), who reported that the overall level of knowledge of the nursing professionals surveyed was acceptable, although a lack of familiarity with appropriate scales for assessing pain in children was detected, especially in those who cannot express themselves verbally.

It is also important to highlight that, although the majority of participants stated that they agreed that they knew and applied the scales, there was a significant group (24.7 %) who have some type of disagreement, which implies the implementation of institutional and training actions to reverse the results in benefit of health actions for the prevention and treatment of pain.

Q23.- I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)



Analyzing the questionnaire by profession, it is found that nursing staff are the most likely to agree that they know and apply the WHO linear scale of pain treatment levels in children, followed to a lesser extent by medical professionals. The other occupational groups provide minimal input in all responses.

The WHO Analgesic Scale (2023) also guides medication titration based on patient needs and allows healthcare professionals to adjust doses to provide optimal pain relief while avoiding unwanted side effects. Based on the use of analgesics and co-analgesics, it is even effective in the treatment of cancer pain. This scale achieves good pain control in about 80% of cases.

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The assessment, recording, treatment, and monitoring of pain in hospitals is part of the quality of care provided to patients, and its importance is such that pain assessment has been considered the fifth vital sign. This connotation indicates the need for all health professionals, especially nurses, to efficiently assess and treat pain (Colina et al. 2022).

When assessing pain, the patient's location, type, duration, frequency, intensity, radiation, accompanying symptoms and signs, aggravating and mitigating factors, as well as medications that relieve or cause it should be taken into account. Health personnel must know the patient's medical history, perform a pain-oriented physical examination, and identify abnormal clinical data associated with the pain. Carrasco et al. (2023), in their study on pain management, recommend that, when providing pain treatment, health professionals should base it on its pathophysiology and use means that allow an assessment of its origin and evolution. The WHO pain management guidelines offer general recommendations, such as the administration of analgesics, which should be prescribed orally whenever possible, should be administered at fixed time intervals, and the next dose should be administered before the previous dose has finished its effect. Finally, individualized doses are recommended, and their increase or decrease should be consistent with the manifestations of each patient.

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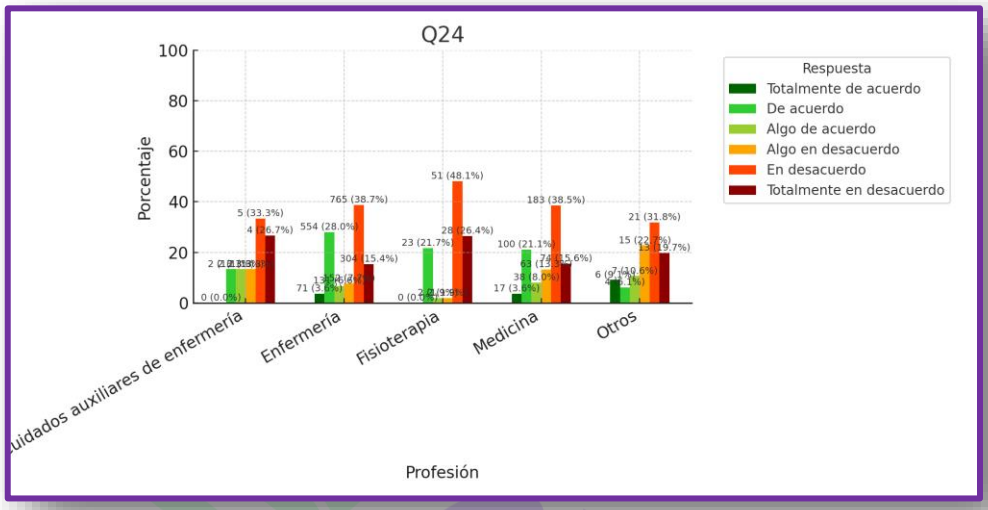
Q24.- Training on acute pain in children and its management is sufficient.



Analyzing the results by profession, it is evident that all groups—a majority of 2,236—responded as disagreeing, somewhat, or strongly disagreeing, while 957 agreed, somewhat, or strongly agreed. Specifically, the nursing occupational group accounted for the largest number of participants, followed by the medical group.

In pediatric care settings, procedural pain is estimated to affect between 22% and 77% of patients. Studies have shown that up to 78% of hospitalized children undergo at least one painful procedure, with an average of six procedures per child (Leyva M, et al. 2022).

Pain assessment in newborns is a difficult task for healthcare professionals, as they are unable to express it verbally, resulting in its quantification being based on a subjective assessment by healthcare personnel using different pain scales. Therefore, pain assessment and management in neonatology has become one of the most important objectives in the present century (Hall R et. al. 2019).

Studies conducted in low-birth-weight human neonates suggest that early exposure to nociceptive stimuli affects development and that pain reactivity is decreased compared to healthy newborns (NBs). Pain-related stress and decreased parasympathetic activity are associated with an increased risk of developing metabolic and cardiovascular diseases. Studies show that newborns may experience hypersensitivity to pain due to the immaturity of the nervous system, as myelination is still developing and synaptic transmission is slower. This results in nonspecific responses in newborns, increasing the difficulty of assessing pain with conventional clinical scales. Therefore, proper pain management is vital for optimal development.

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Mederos et al. (2024), in their study on the knowledge of the response to nociceptive stimuli in mammals is of high translational value, as well as in human newborns. It is estimated that it could have an impact at the national level and in the way in which healthcare teams approach the treatment of pain and discomfort. It is a novel and still unexplored tool, which can positively impact the quality of care. Having reliable and objective tools for assessing discomfort, easy to use and interpret by the entire healthcare team, contributes to improving the care of newborns during their hospital stay, remembering that exposure to repeated painful stimuli during hospitalization generates harmful consequences in the short and long term.

This model contributes to the healthcare team's learning curve in using the NIPE™ in a deep coma situation. Furthermore, it adds significant transnational value given its physiological homology with humans. Therefore, the results obtained in this study are useful for clinical practice in the care of newborns, both in assessing discomfort and in assessing the level of sedation and analgesia.

To train highly specialized professionals in providing care to patients with acute, terminal, or advanced chronic illnesses. Their competencies include the effective management of pain and other physical symptoms, as well as emotional support for both patients and their families. Additionally, by completing a specialty in Palliative Care, you will develop personalized care plans that promote patient quality of life and comfort.

Many healthcare professionals do not feel well prepared to adequately manage pain, and training and education are one of the main strategies for achieving adequate management. Almost all professionals considered specific training on pain management useful, with a significant percentage identifying a knowledge gap in these areas.

As Davidson et al. (2023) emphasize, current data provide a strong imperative to establish pain management as an educational, clinical, and research priority in nephrology. It is necessary to integrate strategies that allow for a continuous approach to pain, involving professionals in their routine practice and identifying areas for knowledge development to improve patients' quality of life.

The study's limitations are inherent to this type of methodology. While the sociodemographic characteristics of the study participants, according to data consulted with the INE in 2022, are representative of nursing professionals in Spain, they constitute useful information as a starting point for understanding the current state of this issue and contextualizing it.

Based on these results, it can be stated that nephrology nursing in Spain perceives that patient pain management during hemodialysis sessions is on the way to improvement, identifying variability in clinical practice regarding the administration of analgesics. Furthermore, these professionals demand specific training, as well as protocols for pain management in hemodialysis.

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Professionals with less than 5 years of experience reported the lowest level of knowledge; however, those with more than 5 years of experience considered specific training most useful.

It would be beneficial for various institutions and scientific societies to respond to this situation by developing specific training in this area, as well as consensus documents/protocols, that would allow for better pain control in people on hemodialysis, thereby contributing to improving their quality of life.

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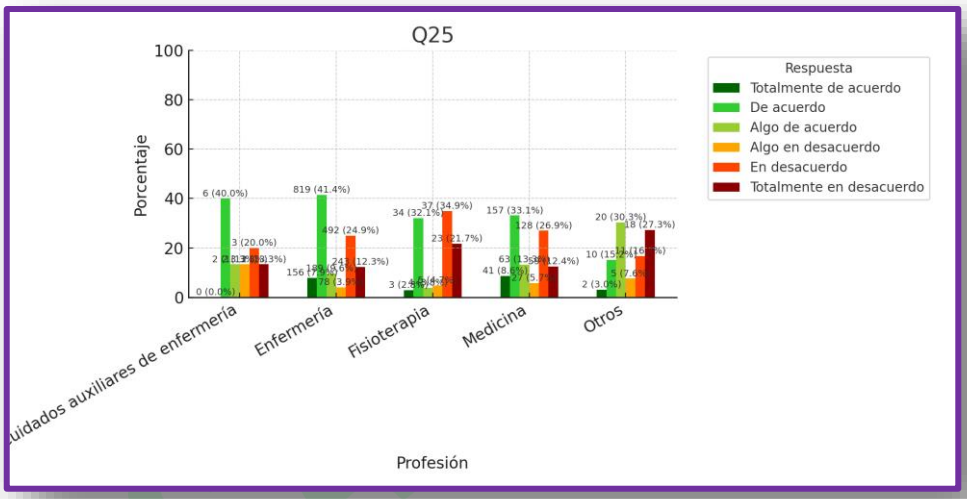
Q25.- I can identify early signs of pain in newborns.



The results show that, by occupational group, nursing professionals were the most likely of the 1,977 participants to agree, somewhat agree, or strongly agree, with 1,164 responses representing 58.9%, while 813 (41.1%) responded in disagreement, somewhat disagreement, or strongly disagreement. They were followed by medical professionals, who, out of 261, responded in agreement, somewhat agree, or strongly agree, while 214 expressed some level of disagreement.

In premature newborns, there is an increased risk of neurological damage due to pathologies associated with intraventricular hemorrhage or cerebral ischemia, due to increased intracranial pressure. Pain, as a source of stress, increases susceptibility to infections due to the resulting depression of the immune system. Research suggests that newborns exposed to pain in the early stages of life undergo morphological and functional changes in the brain that trigger exaggerated affective-functional responses to subsequent painful experiences. The short- and long-term consequences of newborn exposure to stress and pain make an adequate assessment of the patient's condition essential. However, this assessment can often be complex, as it is a subjective assessment, as the patient is unable to verbally express their pain.

A three-month study conducted in a Neonatal Intensive Care Unit estimated that a preterm newborn may be subjected to 300 painful procedures during their stay, approximately 14 per day. Among the strategies to be followed, pharmacological and non-pharmacological measures can be distinguished. Because this is such a vulnerable age group, both pain management in the newborn and ensuring that the interventions offer maximum effectiveness with the lowest risk must be considered.

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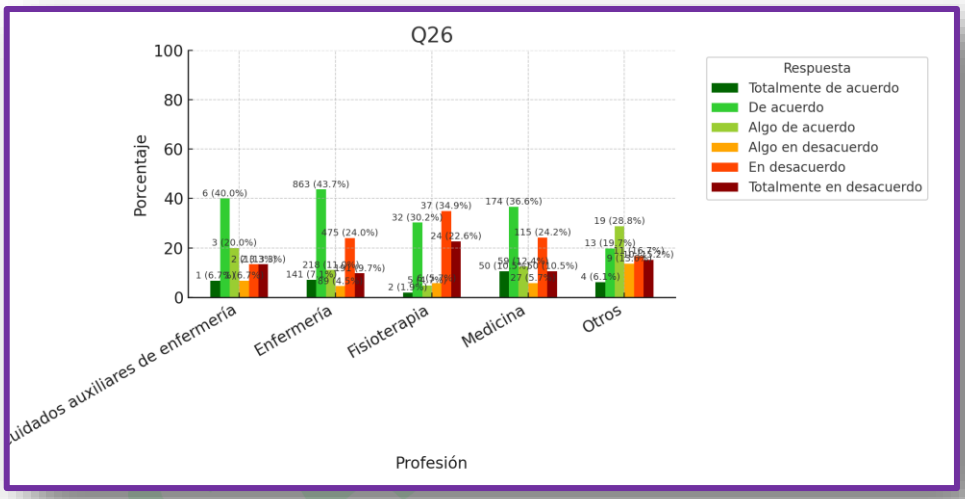
Q26.- I know how to act in the case of acute pain in children.



Of the total number of respondents, 61.8% of nursing staff were unsure how to respond to acute pain in children. A considerable percentage (38.2%) also reported some degree of disagreement, an aspect that should lead to reflection on the way they respond professionally. A review of the literature reveals that a child's positive development and hospital stay are shortened by the nurse's attitude toward their pain.

Twycross's work (A, 2008)highlights the factors that lead to nurses not always perceiving their patients' pain, which is invariably associated with the professional's assessment of pain.

On the other hand, (Jacob E, 2007)it concludes that there is no evidence in clinical records that nurses develop appropriate tools to assess pain and evaluate children's responses to management strategies, which also represents an unfavorable attitude. Likewise (Aguilar, 2012) in a study analyzed the nursing attitude toward childhood pain related to the training of professionals, reflected that most unfavorable attitudes toward pain corresponded to professionals who had not received training in pediatric pain management, while those who had attended courses had a better attitude.

In a study conducted by (Martinez, 2007), 45.7% of nurses and 40.7% of students believed that pain relief was more harmful than pain itself. Topical knowledge was similar in both groups. Forty percent of students believed that pain in children was less severe. Only 21.33% of nursing staff were familiar with pain quantification methods. Nursing staff need training to assess and treat pain appropriately.
Regarding medical personnel, we found that 59.6% of those surveyed know how to respond to pain in children, and 40.4% expressed some degree of disagreement. Since physicians are the first-line professionals, and especially pediatricians, who manage and support children's health, it is

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essential that they know what to do, when, and how to treat children with pain.
In 1998, (Riaño Galán, 1998)they published a study outlining the state of pediatricians' knowledge about childhood pain. The results of that study generally indicated that, in the opinion of the professionals themselves, pediatricians' training in pain assessment and management was limited or nonexistent. Furthermore, almost half of those surveyed stated they were unaware of any guidelines on pain management in children.

Similarly, (MAIXE, citado 2025)they published their work with pediatricians, finding that 54% of respondents stated they did not know what to do. Only between 26% and 28% of survey participants stated that pediatricians' training in acute pain management was sufficient. However, the majority of respondents stated they were familiar with pain assessment scales for children (88%) and the WHO Linear Pain Treatment Levels Scale for Children (65%). Furthermore, although more than half of participants stated they believed they adequately treated acute pain in children (65%), an almost identical number stated they felt uncomfortable around a child in acute pain (66%).

Regarding the physiotherapy survey, only 36.8% agreed on knowing how to respond to pain, and 63.2% expressed some degree of disagreement about how to respond. These results are worrying, considering that physiotherapy creates a safe and supportive environment for pediatric patients to explore and participate in recreational and sports activities without restrictions.

But in addition to being essential for physical recovery, this ability to return to everyday life plays a decisive role in their cognitive and physiological development . By participating in games and sports, children not only improve their motor skills but also develop social skills, learning to collaborate, communicate, and work as a team.

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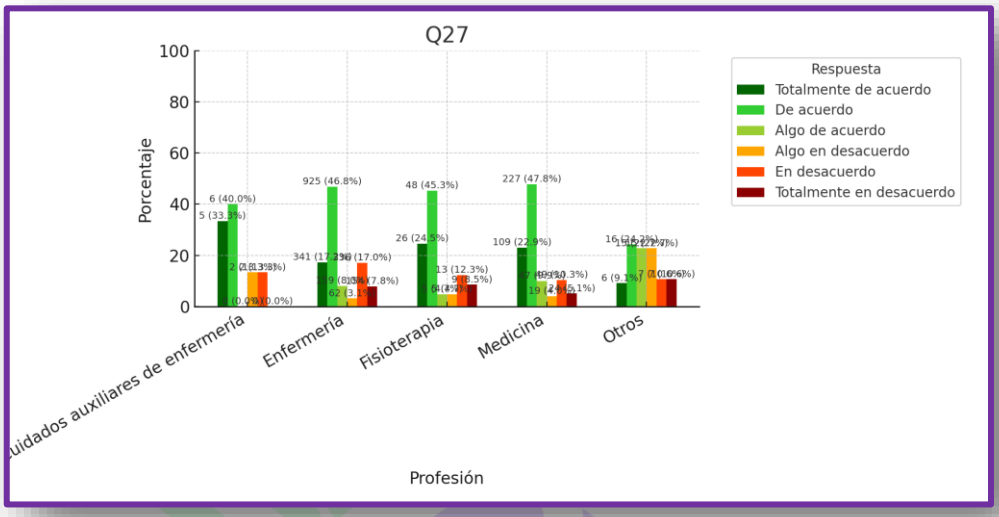
Q27.- Analgesia should be used before performing additional traumatic tests.



In the results obtained by profession, nursing is the profession with the most surveys conducted, 72% agree that analgesia should be used before traumatic tests and 28% show some degree of disagreement.

In the medical profession, the percentage (80.6%) who agree that analgesia should be used before traumatic tests is higher, and 19.4% show some degree of disagreement.

The barrier to using analgesics is the fear of the adverse effects of opioid analgesics, especially respiratory depression. It is also thought that children experience more adverse effects, metabolize them differently, or may be more prone to addiction.

There are studies that report that the inexperience of professionals may be one of the causes of the high prevalence of pain, since they leave the patient with pain even when the etiological diagnosis has already been made, or they do not provide the appropriate or sufficient treatment, since they take the manifestation of pain as an indicator to verify if the condition is improving (Morales M, 2016).

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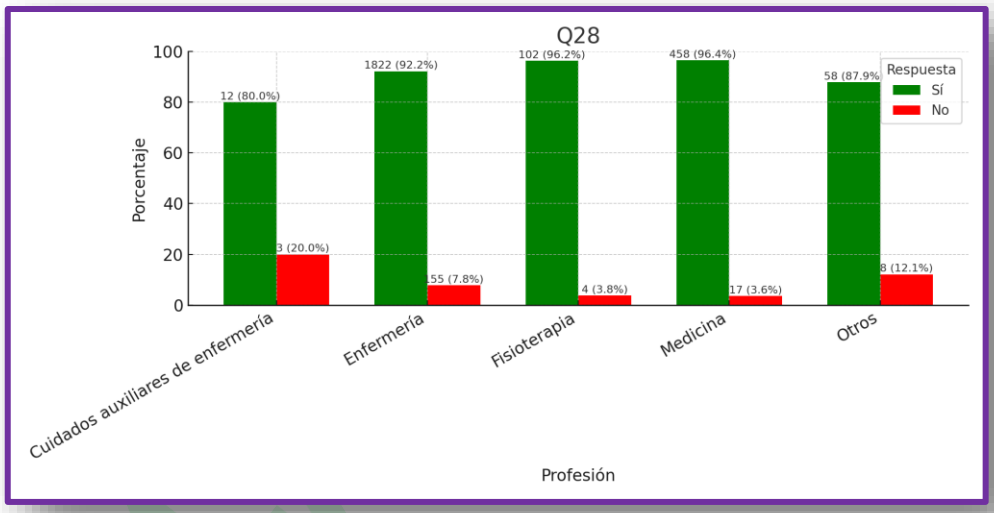
Q28.- Do children have memory of painful episodes?



Regarding the results segmented by profession in question Q28 on whether "Do children have memory of painful episodes?", a clear globalization of the "agree" position can be observed among the different professions.

The results of this survey reflect a widespread consensus among various healthcare professional groups that children have memories of painful episodes.

This cross-sectional agreement suggests a growing awareness of children's ability to remember negative experiences, which can impact their future behavior in the face of medical interventions. Furthermore, this agreement reinforces the need to implement effective strategies to minimize pain in childhood, not only for immediate ethical reasons but also to prevent potential long-term emotional and behavioral consequences.

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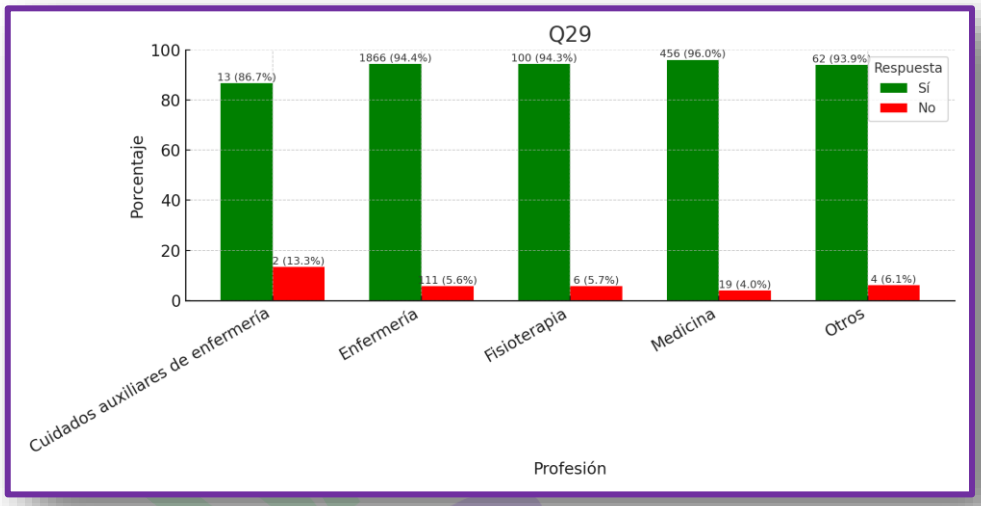
Q29.- Do you think that inadequate pain control can influence the adult personality of children?



The results by profession show that in nursing, 94.4% agreed that inadequate pain control can influence a child's adult personality, followed by 5.6% who disagreed to some degree. Similar results were found in the medical profession, with 96% agreeing, followed by 4% who disagreed to some degree.

In the last decade, there has been growing interest in pediatric pain management, but despite these advances, many children still suffer unnecessarily due to lack of adequate treatment. The International Association for the Study of Pain (IASP) defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

There is extensive evidence in the literature showing that poor management of acute pain impacts postoperative morbidity and mortality and complicates treatment in the short term, increasing the number of medications and costs. Furthermore, it also promotes chronic pain and has long-term psychological consequences, such as anxiety, fear, sleep disturbances, and behavioral changes.

Pain control is a fundamental part of good medical practice and high-quality care. Pain prevention and management are priorities when working with children, which requires incorporating and considering pain as the fifth vital sign. Therefore, when assessing vital signs, one must consider whether the child is in pain, its intensity, the adequacy of analgesic therapy, the presence of medication side effects, and whether rescue therapy is required. By integrating the concept of pain into routine treatment, a significant step forward is already being taken (Eberhard f. 2004).

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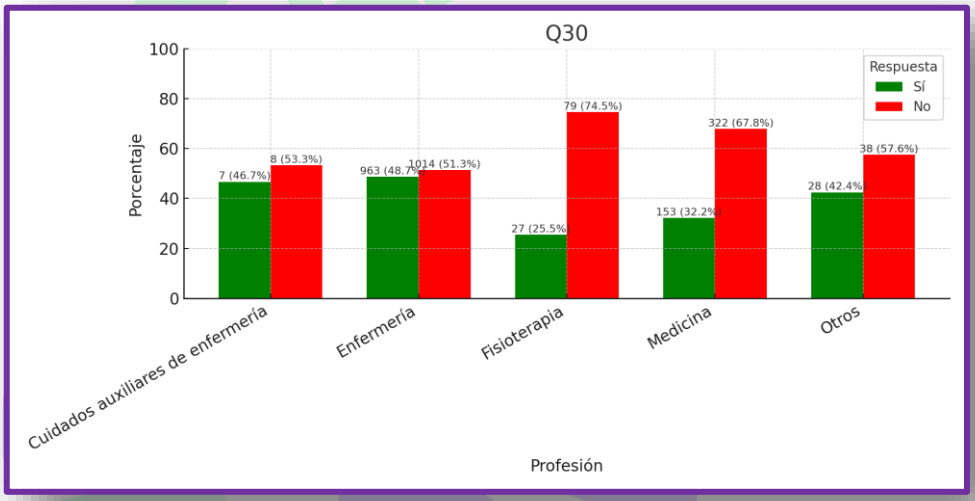
Twycross, A. (2010), in a literature review, found that children's pain is inadequately managed, causing unnecessary suffering. Nurses with the greatest knowledge about pain are not the best at managing analgesia; this knowledge is not applied to practice. There is no relationship between the level of knowledge and pain management. Nurses attribute less importance to pain than to other issues and assume that experiencing it is expected during a hospital stay. Erroneous beliefs contribute to inadequate pain management. Years of experience and academic level do not contribute to better pain management. Nursing professionals need to be educated in pain management, integrating theory and practice.

Q30.- Is pain proportional to the magnitude of the injury that causes it?



The graph shows significant differences in pain perception among the various professional categories in the health sector. Nursing constitutes the largest group, with 1,977 participants. Of these, 963 (48.7%) responded that they believe pain is proportional to the injury, while 1,014 (51.3%) believe it is not, reflecting an almost equal split within the profession.

In the medical field, 475 professionals participated, of whom 153 (32.2%) responded affirmatively and 322 (67.8%) negatively. This group clearly rejects the direct proportionality between pain and the extent of the injury. Meanwhile, in the physiotherapy field, 27 (25.5%) of the 106 respondents stated that pain is proportional, while 79 (74.5%) denied this, consolidating a perception similar to that of the medical group. In the group of other professionals (nutritionists, psychologists, obstetricians, etc.), 28 (42.4%) responded yes, and 38 (57.6%) responded no. Although the numbers are lower, the perception that pain does not always correspond to the extent of the injury also predominates. Finally, among the nursing assistants, with a

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total of 15 participants, there is an almost equal distribution: 7 (46.7%) responded "Yes" and 8 (53.3%) "No."

Overall, the results reveal that the majority of healthcare personnel (especially physicians and physical therapists) recognize that the experience of pain is not linearly related to the magnitude of the noxious stimulus, which is consistent with the biopsychosocial model and current scientific evidence. In contrast, nursing and auxiliary staff present more mixed responses, which could be related to training approaches more oriented toward direct care, but with less in-depth knowledge of the neurophysiological mechanisms of pain.

The results reflect notable differences between professional categories regarding the conceptualization of pain. While there is a general tendency to reject the idea of proportionality between pain and physical damage, this pattern is not uniform: physicians and physical therapists show greater agreement with contemporary approaches to pain, while nurses and nursing assistants have a more divided view.

This finding is consistent with that reported by Gordon et al. (2022), who identified that physicians and physical therapists, due to their greater exposure to content on pain neurophysiology and their clinical training in chronic pain, tend to adopt the biopsychosocial model more easily. In their multicenter study, they conclude that the greater the training in pain, the lower the belief in the direct proportionality between stimulus and painful experience.

Likewise, Liossi et al. (2021) highlight that many nursing professionals still have a mixed understanding of pain due to curricular gaps in specific training on pain neuroscience. This would explain the almost equal distribution of responses in this group. The study also proposes incorporating educational strategies aimed at improving clinical judgment in the face of invisible or idiopathic pain.
On the other hand, Slater et al. (2020) found that healthcare professionals' pain perception is influenced by both their training and their personal and cultural attitudes. Their research demonstrated that physiotherapists with experience in chronic rehabilitation are more likely to reject the notion of pain as a direct reflection of tissue damage, thus supporting the results observed in this group.

Finally, Raja et al. (2020) explain that the new definition of pain proposed by the International Association for the Study of Pain (IASP) explicitly recognizes that pain is a sensory and emotional experience, associated or not with actual damage. This conceptual framework helps us understand why the most up-to-date professionals—as seen in medicine and physical therapy—align with this definition, unlike those who still maintain a traditional biomedical vision.

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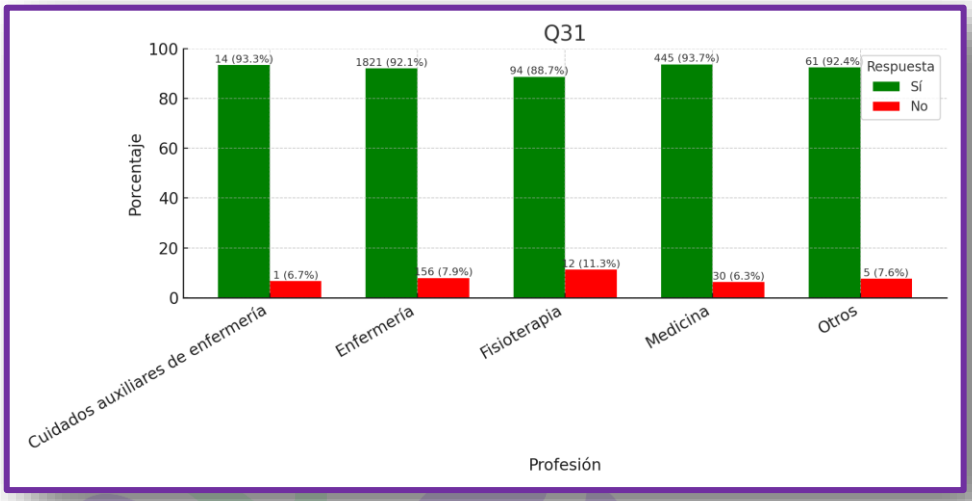
Q31.- Is it useful to explain to a 4-year-old child what you are going to do to calm him/her down?



The results reveal significant differences in the perception of the usefulness of explaining procedures in advance to a 4-year-old child, depending on the profession of the healthcare personnel surveyed. First, nursing staff showed the highest proportion of affirmative responses, suggesting a strong focus on communication and emotional support in pediatric care. Physicians, although also valuing this practice, had a slightly lower percentage, possibly due to their training still focused on technical and procedural aspects.

For their part, nursing technicians highly value the usefulness of this strategy, which could be explained by their close contact with children during invasive or painful procedures. Finally, other professionals such as psychologists and occupational therapists also report high levels of appreciation for this practice, consistent with their training in child development and emotional management.

These data reveal that, while there is a general consensus on the importance of preparing children through simple, advance explanations, the extent of this agreement varies according to the professional profile, likely based on their role in the care process, their communication training, and their level of direct contact with pediatric patients.
The analysis of these results shows a clear trend toward a positive assessment of anticipatory explanations to 4-year-old children, with marked differences depending on the profession. The high proportion of affirmative responses among nursing staff coincides with studies such as that of Wong et al. (2021), which show that nurses adopt a relational and communicative approach to pediatric care, prioritizing the child's emotional well-being. In contrast, the lower percentage among physicians could be associated with a predominantly biomedical training, as pointed out by Costa et al. (2022),

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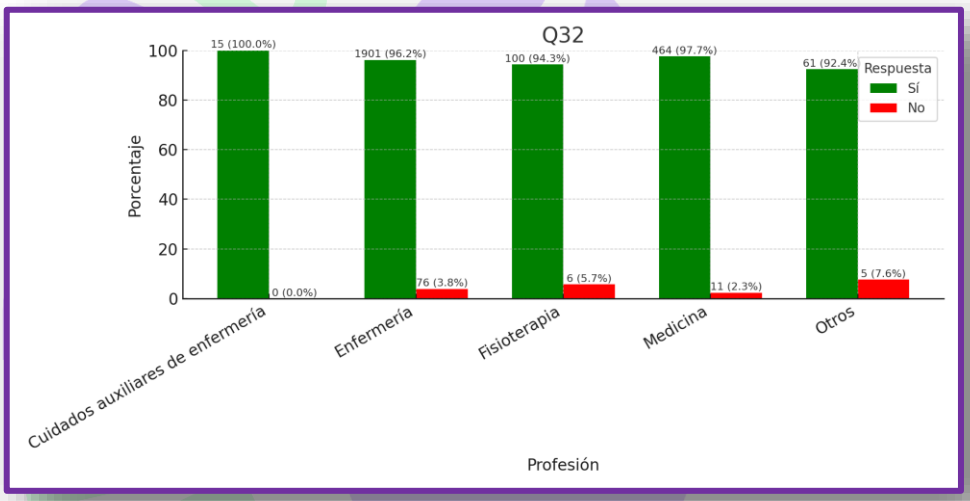
who identify gaps in communication skills in the traditional medical curriculum.

On the other hand, nursing technicians with direct care roles demonstrate significant recognition of this practice, which is supported by the work of Duarte et al. (2020), which highlights its role in the emotional preparation of pediatric patients. Likewise, mental health and therapy professionals express a high appreciation for it, which aligns with the findings of Martínez-Rodríguez et al. (2023), who argue that training in child development improves the ability to provide emotional support. These findings underscore the need to strengthen communication skills in all pediatric care profiles, as part of a comprehensive and humanized approach to care.

Q32.- Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?



The data reveal high adherence to the practice across all professional categories, with a large majority responding affirmatively. Nursing, which represents the category with the largest number of participants, shows that 96.2% (1901 out of 1977) of its professionals believe that pain interferes with the activities of children over 6 years of age. This finding is consistent with the literature that highlights the key role of nursing in implementing clinical protocols and humanizing care (Luna et al., 2021).

In the case of medicine, 97.7% (464 of 475) report using the practice, demonstrating strong interprofessional integration. Although the absolute number is lower, in physiotherapy, acceptance is also observed at 94.3%, indicating professional awareness of the importance of the intervention addressed (Castro & Ordóñez, 2020).

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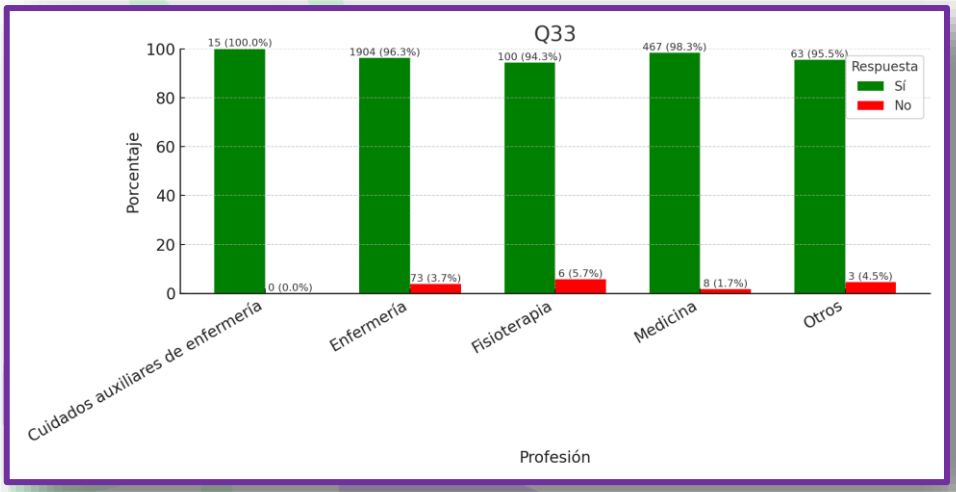
Nursing assistants presented a 100% affirmative response rate, although the sample size (15) was very small. On the other hand, the "Other" category, with 66 participants, also showed a high affirmative response rate (92.4%), which demonstrates a homogeneous institutional culture regarding pain if it interferes with the activities of children over 6 years of age.

These results suggest that the majority of staff, regardless of their professional category, have integrated this practice into their professional practice, which may be due to clear institutional policies, ongoing training, or legal and ethical requirements (Ramírez & Castañeda, 2022).

Q33.- Does pain affect the child's social interaction (peers, teachers and family)?



The graph shows the perceptions of different health professionals on whether pain affects the child's social interaction (peers, teachers and family). The vast majority of respondents in all areas answered affirmatively. In Nursing, 1904 people answered "Yes" and only 73 "No". In Medicine, 467 answered "Yes" and only 8 "No". In Physiotherapy, 100 answered "Yes" and 6 "No". In the Nursing Assistants group, all (15) answered "Yes". In the "Other" category, 63 answered "Yes" and only 3 "No". These results reflect a general consensus among health professionals on the negative impact of pain on children's social interaction.

The consensus among healthcare professionals demonstrates awareness of the psychosocial consequences of childhood pain. The fact that the majority of respondents, regardless of their area of training, recognize the impact of pain on social interaction is consistent with the scientific literature, which indicates that chronic pain affects children's ability to relate to their peers, teachers, and families. These difficulties can manifest as social isolation,

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school absenteeism, and disruptions in family dynamics, which in turn can aggravate the pain experience and hinder recovery (Gorodzinsky et al., 2019; Lewandowski et al., 2010).

Furthermore, the shared understanding among nursing, medicine, and physical therapy underscores the importance of an interdisciplinary approach to managing childhood pain. Recognition of this problem by various professionals favors the implementation of comprehensive strategies that include both physical treatment and emotional and social support for the child and their family (Forgeron et al., 2015; Law et al., 2018).

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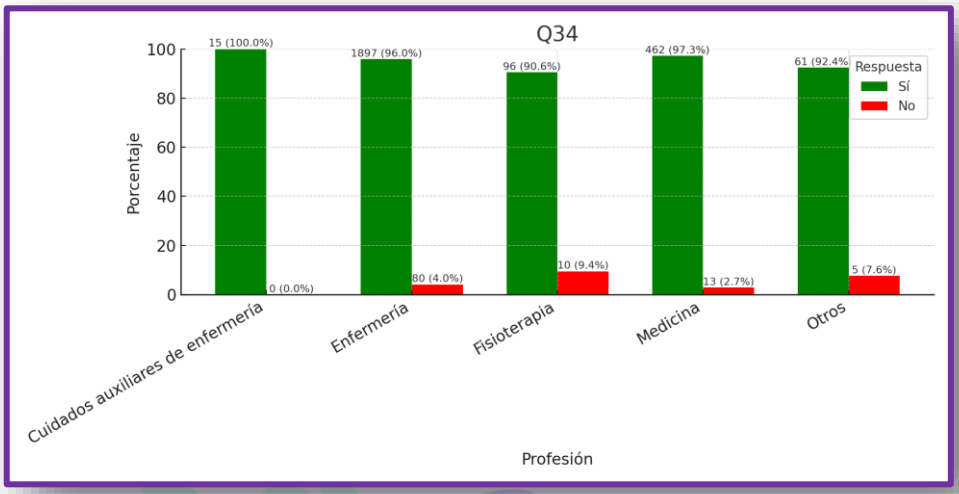
Q34.- Does pain influence a child's choice of social or recreational activities?



The graph shows a clear predominance of affirmative participation in all categories, with the nursing group having the largest number of participants (1,897), followed by medicine (462), physiotherapy (96), others (61) and nursing assistants (15).
These results reflect a high degree of commitment and participation of health personnel, with greater emphasis on nursing professionals, which could be due to their direct and constant involvement of the nursing profession in community, preventive, promotional, care or continuing education actions (Martínez et al., 2020).

Consistent with (González & Pérez, 2021), the quantitative analysis shows that more than 95% of individuals in each group actively participated. This trend is particularly significant in the field of nursing, where more than 95% responded affirmatively, a result that reflects the high level of professional responsibility, institutional commitment, and potential inclusion in continuous improvement plans for nursing staff. In contrast, although in smaller proportions, other fields such as physiotherapy, medicine, and "others" also showed high participation. However, the absolute number of participants in these areas is considerably lower, which could be due to the lower presence or representation of these disciplines in pain care in children or, also, to differences in institutional training or engagement policies (Ramírez, 2019).

The predominance of nursing staff reflects a central role in the healthcare structure, particularly in community or institutional intervention contexts. This situation can be explained by their widespread presence at all levels of care, their role in health promotion programs, and their active participation in ongoing educational processes (Torres & Salazar, 2018).
Likewise, the low participation of nursing assistants could indicate limitations in access to training opportunities or institutional decisions that

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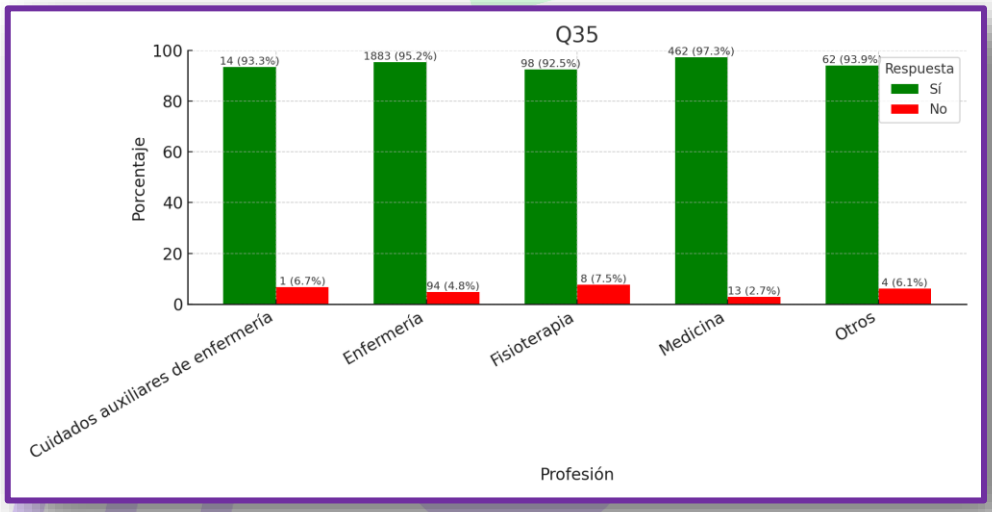
prioritize professional staff for other activities. This disparity invites reflection on the need for equitable inclusion in training processes to strengthen the multidisciplinary health team (López & Herrera, 2020).

Q35.- Can pain affect children's cognitive and emotional development?



The graph shows the distribution of positive or negative responses to whether pain affects children's cognitive and emotional development, categorized by professional areas: nursing assistants, nursing, physiotherapy, medicine, and others. The data show a wide positive participation in all categories, especially in the area of nursing, with (1,883) affirmative responses, followed by medicine (462), physiotherapy (98), and others (62). The group with the lowest participation in absolute terms is nursing assistants, with 14 affirmative responses. Negative responses are minimal in all cases, with nursing standing out with 94, although proportionally low compared to the total.

This trend confirms that nursing professionals lead participation in organized activities, possibly due to the work they perform, the organizational structure of the health system that positions them as key actors in direct and continuous care (González & Pérez, 2020).

A percentage analysis shows that at least 85% of participants responded affirmatively across all categories, with the highest rate among nursing assistants (14 out of 15), followed by physical therapy (98 out of 106). This indicates a high level of acceptance and/or compliance in responding yes, that pain affects children's cognitive and emotional development. In the case of nursing, despite having 94 negative responses, this represents less than

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5% of the total, which reaffirms its structural commitment to this type of institutional processes (Moreno et al., 2021).

These figures suggest that training, support, and follow-up strategies are effective, assertively responding to the fact that pain affects children's cognitive and emotional development. The massive participation of nursing staff could also reflect institutional policies that actively promote their involvement and participation in the care of children with pain (López & Herrera, 2019).

The overwhelming participation of nursing staff is explained not only by the number of professionals in this area, but also by their operational and strategic role within healthcare institutions. They are typically closest to the end user and are an essential part of continuous improvement, quality monitoring, and patient safety programs (Torres & Salazar, 2018). The active involvement of physical therapists and physicians is also notable, although in lower absolute numbers, which may be due to their lower numerical representation or a focus on other clinical tasks.

For its part, the lower participation of assistants and the "other" group could be linked to structural exclusion or lack of opportunities for participation, which raises a need to review the inclusion strategies of all members of the health team (Martínez & Rivas, 2022).

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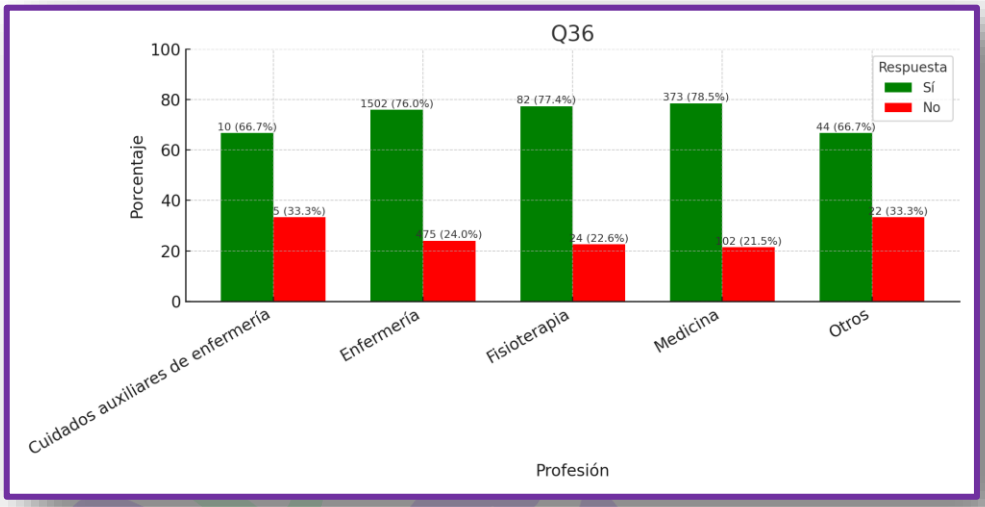
Q36.- Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?



The graph shows the responses ("Yes") and ("No") by profession: nursing assistants, nursing, physical therapy, medicine, and others. The results show that nursing continues to lead the participation, with 1,502 affirmative responses and 475 negative responses. This is followed by medicine (373 "Yes" and 102 "No"), physical therapy (82 "Yes" and 24 "No"), others (44 "Yes" and 22 "No"), and nursing assistants (10 "Yes" and 5 "No"). A percentage decrease in affirmative participation is evident with respect to the nursing field.
This change suggests possible institutional fatigue, decreased interest, logistical barriers, or changes in the conditions of the call, which could be negatively influencing staff motivation to get involved in pain prevention initiatives in children undergoing various procedures (González & Pérez, 2021).

Looking at the affirmative participation rates, we find that the nursing group, although still the largest, has a positive participation rate of less than 76%, which contrasts with previous analyses where it exceeded 90%. In physiotherapy, affirmative participation is 77.3%, in medicine it is 78.5%, in the "other" group it is 66.7%, and in nursing assistants it is 66.6%. This indicates a general decline in commitment compared to other measures.

This phenomenon could be interpreted as a result of a possible overload of activities or a perception of lesser relevance in the evaluated intervention. Institutions should consider these types of indicators to readjust communication, motivation, and relevance strategies for activities aimed at healthcare professionals (Martínez & Rivas, 2022).

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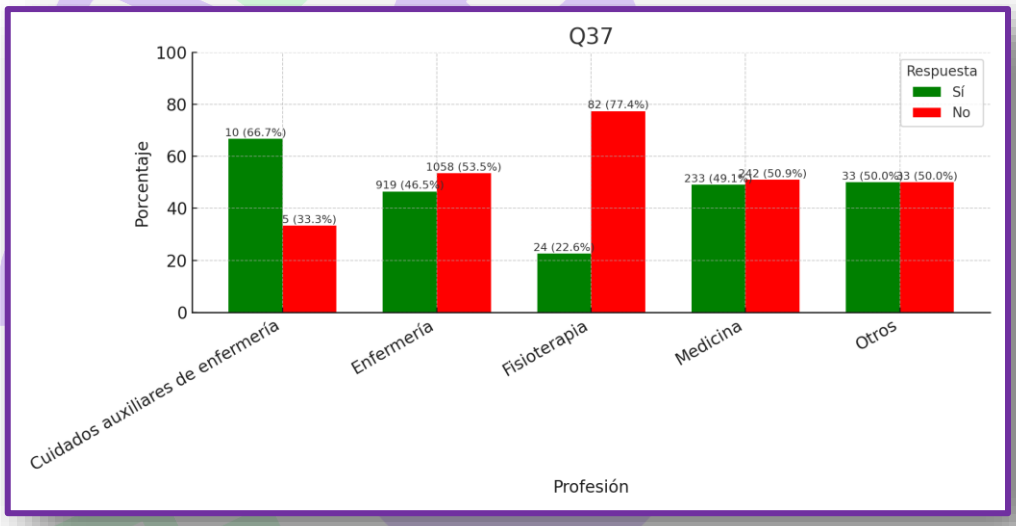
This relative decline in affirmative participation represents a warning for health systems. Although the overall volume of "Yes" responses is still high, the considerable increase in "No" responses (especially in nursing and medicine) could reflect institutional fatigue, low satisfaction, or a lack of alignment of activities with current professional interests. Lack of time, insufficient recognition, and the perception of repetitiveness can negatively influence adherence to these types of preventive activities for pediatric pain (Torres & Salazar, 2018).

In this context, it becomes crucial to rethink participation mechanisms, adjusting them to the professional and contextual realities of each group, promoting tangible incentives, adequate timeframes, and relevance to preventative pain management in child care as part of a more inclusive and sustainable strategy (López & Herrera, 2020).

Q37.- Is the training received on acute pain management in children adequate to identify, evaluate and treat this pain effectively?



The graph shows the affirmative and negative responses to an institutional activity, segmented by profession: nursing assistants, nursing, physiotherapy, medicine, and others. The majority of negative responses are concentrated in nursing (1,058), as opposed to the affirmative responses (919), which marks a drastic change compared to the previous graphs. Medicine also shows more negative responses (242) than affirmative responses (233). In the case of physiotherapy, negative responses (82) triple the affirmative responses (24). Only the "other" group shows a balance (33 affirmative and 33 negative), while nursing assistants maintain a similar trend to previous stages (10 affirmative, 5 negative).

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This reversal in participation values indicates a substantial decrease in institutional commitment, possibly due to saturation, demotivation, or negative perception of the intervention for training health personnel on pain management in children (González & Pérez, 2021).

Comparative analysis reveals a drastic decrease in the level of affirmative responses, especially in nursing, where in previous records the response rate exceeded 90% and now falls below 47%. A similar trend is occurring in physical therapy and medicine, with a clear predominance of negative responses. This may reflect a crisis of organizational motivation or a mismatch between staff expectations and the purpose or methodology of the activity carried out to provide training on acute pain management in children to effectively identify, assess, and treat this pain.

This type of decline has direct implications for the effectiveness of institutional programs, since when the majority of staff do not participate or reject the initiatives, the quality, continuity, and relevance of organizational actions in the health field are compromised to achieve the necessary competencies in the management of pediatric pain effectively and efficiently (Martínez & Rivas, 2022).

The results raise an urgent need for a strategic review by institutions that provide healthcare resources that promote preventive activities in pain management in children. The high level of rejection observed, especially in nursing, could be related to workload, the perception of imposed and undervalued activities, or the lack of real incentives. While groups such as nursing assistants or "others" maintain more balanced participation rates, their low total number does not represent a significant counterbalance. Evidence shows that, to sustain participation over time, it is key to ensure thematic relevance, adapt participatory methodologies, actively listen to staff needs, and formally value their contribution in these spaces (Torres & Salazar, 2018; López & Herrera, 2020).

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9. Chi-square tests to evaluate statistical associations.

9.1. Sex

Item	p-value	Significant (p < 0.05)
Q7-Do you have minor children?	0.114470124	No
Q8-Do you have elderly people in your care?	0.148658195	No
Q9-Do you have any dependents in your care?	0.547744949	No
Q10-To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.	0.094134774	No
Q11-Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.	0.960393306	No
Q12-Similar stimuli in different children produce the same intensity of pain.	0.152282346	No
Q13-Children under 6 months of age cannot tolerate opioids for pain relief.	0.403015112	No
Q14-After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.	0.575692894	No
Q15-It is advisable to use non-pharmacological pain interventions independently, rather than in combination with pain medications.	0.264913669	No
Q16-Childhood pain is a personal experience influenced by biological, psychological and social factors.	0.170497169	No
Q17-Nonpharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and nonnutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain.	0.11464865	No
Q18-During painful procedures, parents should not be present.	0.004718913	Yes
Q19-Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.	0.000318028	Yes
Q20-Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.	0.473503872	No
Q21-Opioids for the treatment of acute pain can cause addiction in pediatric patients.	0.009887196	Yes
Q22-I know and apply pain assessment scales in children.	0.655363245	No
Q23-I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)	0.725546615	No
Q24-Training on acute pain in children and its management is sufficient.	0.015858555	Yes
Q25-I can identify early signs of pain in newborns.	0.302829651	No
Q26-I know how to act in the case of acute pain in children.	0.61526821	No

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Q27-Analgesia should be used before performing additional traumatic tests.	0.626372739	No
Q28-Do children have memory of painful episodes?	0.67416536	No
Q29-Do you think that inadequate pain control can influence the adult personality of children?	0.815347254	No
Q30-Is pain proportional to the magnitude of the injury that causes it?	0.050149254	No
Q31-Is it useful to explain to a 4-year-old what you are going to do to calm him/her down?	0.000118244	Yes
Q32-Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?	0.138328534	No
Q33-Does pain affect the child's social interaction (peers, teachers and family)?	0.275029053	No
Q34-Does pain influence a child's choice of social or recreational activities?	0.715125756	No
Q35-Can pain affect children's cognitive and emotional development?	0.449592037	No
Q36-Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?	0.275623341	No
Q37-Is the training received on acute pain management in children adequate to identify, assess, and treat this pain effectively?	0.476616575	No

The Chi-square test allows to evaluate the association between the variable sex and the various questions related to the approach to pediatric pain.

It is key to find that, of the 31 questions considered here, 5 items reported a statistically significant association.

Question Q18, which states that "parents should not be present during painful procedures," shows a statistically significant association with the gender variable. This suggests a notable difference between men and women regarding this statement, which could indicate that one group is more likely to believe that parental presence does play an important role in pain management in children.

Question Q19, " Children in pain should be encouraged to tolerate their pain before receiving relief," is strongly associated with gender. It is possible that certain groups may find it more acceptable to allow children to try to tolerate pain before receiving any type of analgesic treatment (whether pharmacological or non-pharmacological), which may reflect differences in approach, the influence of prior personal or professional experiences, or clinical training received between the sexes.

Question Q21, regarding whether "opioids for the treatment of acute pain can cause addiction in pediatric patients," reflects the gender variation on this issue, indicating that some professionals may be more wary of using this drug group in

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children. This may be due to or linked to risk perceptions or prior experience with the use of these medications, both in the general population and prior experience using opioids in children, newborns, or infants.

Question Q24, regarding whether "training on acute pain in children and its management is sufficient," is strongly associated with the variable sex and shows a disparity between women's and men's perceptions of the training received in this area. This may indicate differences in training opportunities in addressing childhood pain and humane care, or disparate experiences in addressing pain between the sexes.

Finally, regarding question Q31 about whether “it is useful to explain to a 4-year-old child what is going to be done to calm them down,” there is a significant difference between sexes that could reflect different sensitivities in communicating with children, where one group may be more inclined to prioritize transparency in explaining medical procedures in an attempt to reduce the anxiety and worry of pediatric patients.

The remaining variables did not show a significant relationship with the study variable (sex in this case). This implies that women and men have similar perceptions regarding pain sensitivity in newborns or children under 2 years of age, the usefulness of placebo in children, and the interference of pain in children's daily lives.

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9.2. Age

Item	p-value	Significant (p < 0.05)
Q7-Do you have minor children?	1.19E-30	Yes
Q8-Do you have elderly people in your care?	0.007776	Yes
Q9-Do you have any dependents in your care?	0.091207	No
Q10-To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.	0.119995	No
Q11-Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.	0.313659	No
Q12-Similar stimuli in different children produce the same intensity of pain.	0.75971	No
Q13-Children under 6 months of age cannot tolerate opioids for pain relief.	0.334397	No
Q14-After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.	0.11611	No
Q15-It is advisable to use non-pharmacological pain interventions independently, rather than in combination with pain medications.	0.868296	No
Q16-Childhood pain is a personal experience influenced by biological, psychological and social factors.	0.344924	No
Q17-Nonpharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and nonnutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain.	0.440318	No
Q18-During painful procedures, parents should not be present.	0.176977	No
Q19-Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.	0.12065	No
Q20-Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.	0.033429	Yes
Q21-Opioids for the treatment of acute pain can cause addiction in pediatric patients.	0.00579	Yes
Q22-I know and apply pain assessment scales in children.	0.33481	No
Q23-I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)	0.745076	No
Q24-Training on acute pain in children and its management is sufficient.	0.342983	No
Q25-I can identify early signs of pain in newborns.	0.810424	No
Q26-I know how to act in the case of acute pain in children.	0.348735	No
Q27-Analgesia should be used before performing additional traumatic tests.	0.020454	Yes
Q28-Do children have memory of painful episodes?	0.734977	No
Q29-Do you think that inadequate pain control can influence the adult personality of children?	0.45136	No
Q30-Is pain proportional to the magnitude of the injury that causes it?	0.270766	No

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Q31-Is it useful to explain to a 4-year-old what you are going to do to calm him/her down?	0.033684	Yes
Q32-Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?	0.449879	No
Q33-Does pain affect the child's social interaction (peers, teachers and family)?	0.44119	No
Q34-Does pain influence a child's choice of social or recreational activities?	0.429411	No
Q35-Can pain affect children's cognitive and emotional development?	0.170912	No
Q36-Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?	0.086671	No
Q37-Is the training received on acute pain management in children adequate to identify, assess, and treat this pain effectively?	1.85E-06	Yes

The chi-square analysis relating these questions to age allows us to assess the statistical association between the age of the respondents and their responses. The questions that showed a significant relationship with the age variable are detailed below.

Question Q7, regarding the respondents' sociodemographic status, "Have minor children," shows a significant association with the age variable. This is expected given the different ages and their relationship with different life stages. However, it is especially relevant because the younger professionals may be more familiar with pediatric care experiences, which can directly influence their sensitivity to and perception of children's pain, and therefore, their approach to it.

Question Q8, regarding the sociodemographic status of respondents to the questionnaire, "Have elderly people in their care," is significantly related to the age variable. This relationship may suggest that professionals in older age groups tend to have fewer minor children and instead tend to care for elderly or older adults. This may indicate that the burden of intergenerational family care may influence the perception of the impact of grief, although the care these individuals provide may not necessarily be to family members, but rather to people for whom they are informal caregivers.

Question Q20 regarding the use of placebos in children to determine the veracity of pain was significantly related to the age variable among respondents. Younger respondents may agree more with this statement compared to younger respondents. This may be due to the fact that this audience has not been exposed to as many discussions about the ethics of placebo use in pediatrics, a lack of awareness of the legal implications of its use, or a lack of specific training on the psychological impact of this type of practice on pediatric patients.

On the other hand, question Q21 on the risk of opioid addiction in pediatrics shows that fear of addiction increases with age, suggesting that professionals in more mature age groups may have a perspective influenced by the traditional use and consequences of opioid use. This can lead to possible undertreatment or underprescription of medications for the treatment of pediatric pain in certain

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cases, highlighting the need to update knowledge and beliefs about the safe use of these medications.

Regarding question Q27 on the administration of analgesia during potentially traumatic procedures, the significant relationship with age is evident. This indicates that older professionals are more likely to agree with prior administration, possibly due to their greater clinical experience and recognition of the importance of effective pain prevention in such a vulnerable population as pediatrics.

Question Q31, regarding whether it is considered useful to explain the procedure to a 4-year-old child, indicates a significant relationship with the variable of age. This implies that there are differences in perceptions based on age, with greater agreement among those with greater experience. This suggests that professionals with greater experience in healthcare may know or have learned that effective communication is useful for reducing anxiety and uncertainty before medical, invasive, and especially traumatic procedures in pediatric patients.

Finally, in question Q37, regarding whether training in pediatric pain care is considered sufficient, the relationship with the age variable is also significant. The level of dissatisfaction with the training received varies significantly with age, with a higher percentage of middle-aged professionals considering it insufficient. This may be related to the need for refresher training and reinforcement of academic, practical, and theoretical training in pediatric care.

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9.3. Continent

Item	p-value	Significant (p < 0.05)
Q9-Do you have any dependents in your care?	5.88E-41	Yes
Q8-Do you have elderly people in your care?	1.74E-40	Yes
Q7-Do you have minor children?	1.03E-34	Yes
Q37-Is the training received on acute pain management in children adequate to identify, assess, and treat this pain effectively?	2.45E-34	Yes
Q30-Is pain proportional to the magnitude of the injury that causes it?	1.39E-24	Yes
Q12-Similar stimuli in different children produce the same intensity of pain.	4.18E-18	Yes
Q26-I know how to act in the case of acute pain in children.	6.48E-15	Yes
Q25-I can identify early signs of pain in newborns.	3.54E-13	Yes
Q10-To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.	9.02E-13	Yes
Q17-Nonpharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and nonnutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain.	2.3E-12	Yes
Q13-Children under 6 months of age cannot tolerate opioids for pain relief.	1.35E-10	Yes
Q27-Analgesia should be used before performing additional traumatic tests.	1.49E-10	Yes
Q16-Childhood pain is a personal experience influenced by biological, psychological and social factors.	2.81E-10	Yes
Q24-Training on acute pain in children and its management is sufficient.	3.53E-09	Yes
Q21-Opioids for the treatment of acute pain can cause addiction in pediatric patients.	1.23E-08	Yes
Q20-Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.	1.96E-08	Yes
Q14-After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.	6.48E-08	Yes
Q19-Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.	8.35E-08	Yes
Q22-I know and apply pain assessment scales in children.	2.04E-07	Yes
Q23-I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)	2.79E-07	Yes
Q18-During painful procedures, parents should not be present.	4.32E-07	Yes
Q11-Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.	8.72E-07	Yes
Q15-It is advisable to use non-pharmacological pain interventions independently, rather than in combination with pain medications.	3.41E-05	Yes
Q31-Is it useful to explain to a 4-year-old what you are going to do to calm him/her down?	8.71E-05	Yes
Q33-Does pain affect the child's social interaction (peers, teachers and family)?	0.000305	Yes

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Q34-Does pain influence a child's choice of social or recreational activities?	0.000435	Yes
Q32-Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?	0.000875	Yes
Q35-Can pain affect children's cognitive and emotional development?	0.003857	Yes
Q36-Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?	0.013257	Yes
Q29-Do you think that inadequate pain control can influence the adult personality of children?	0.126747	No
Q28-Do children have memory of painful episodes?	0.903469	No

Analyzing the relationship between the different questions in the questionnaire and the container variable, it can be observed through Chi square that the vast majority of the questions show a relationship or association between these variables.

It is noteworthy that some questions, such as Q7, Q8, and Q9, have extremely low scores, indicating a strong relationship between the individual sociodemographic situation of respondents and their location by continent. This can translate into sociodemographic differences as well as the social roles they may play in caregiving across regions.

Questions Q22, Q23, and Q25, which address knowledge and clinical practice in children, include questions on the use of scales to assess pediatric pain, the use of scales to determine the analgesic step to apply to treat pediatric pain, and the identification of signs of pain in newborns. These questions show a significant relationship with continent. This suggests clear differences between continents in professional training and access to validated tools for treating pediatric pain.

In particular, question Q24, which states that "training on acute pain in children is sufficient," reinforces the above commentary, as it shows that perceptions of the quality and quantity of content in this area vary significantly across the regions where the questionnaire was completed. This may be affected by differences in curricula across universities internationally and the lack of standardization of core content.

Finally, it is worth noting that only two of the questions in the questionnaire Q29—Do you think inadequate pain control can influence children's adult personality? and Q28—Do children have memories of painful episodes?—did not show a significant association with the continent variable, suggesting that these two questions involve a more generalized response that is less dependent on cultural factors or characteristics of the different regions from which this questionnaire was completed.

These data show that the continent variable is potentially influential in many aspects related to training, knowledge, and beliefs regarding the approach to pediatric pain, highlighting the need for more equitable and comprehensive training in this field. These results, in turn, reinforce the importance of adapting

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educational and clinical strategies to the cultural and socioeconomic context in which healthcare professionals work, to ensure appropriate and evidence-based pain care for children, regardless of the region in which they practice.

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9.4. Profession/Area of study

Item	p-value	Significant (p < 0.05)
Q7-Do you have minor children?	9.22E-34	Yes
Q8-Do you have elderly people in your care?	5.56E-16	Yes
Q9-Do you have any dependents in your care?	1.96E-26	Yes
Q10-To verify the statement that a child has severe pain, it must be based on the observation of changes in vital signs.	6.51E-19	Yes
Q11-Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences.	5.88E-16	Yes
Q12-Similar stimuli in different children produce the same intensity of pain.	4.29E-08	Yes
Q13-Children under 6 months of age cannot tolerate opioids for pain relief.	3.77E-20	Yes
Q14-After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response.	7.72E-07	Yes
Q15-It is advisable to use non-pharmacological pain interventions independently, rather than in combination with pain medications.	1.68E-33	Yes
Q16-Childhood pain is a personal experience influenced by biological, psychological and social factors.	6.42E-20	Yes
Q17-Nonpharmacological interventions (breastfeeding, kangaroo mother care, oral sucrose or glucose, and nonnutritive sucking) are very effective for controlling mild to moderate pain but are rarely useful for more severe pain.	1.98E-17	Yes
Q18-During painful procedures, parents should not be present.	0.002479	Yes
Q19-Children in pain should be encouraged to endure the pain as much as possible before resorting to pain relief.	4.17E-10	Yes
Q20-Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine if the pain is real.	6.84E-11	Yes
Q21-Opioids for the treatment of acute pain can cause addiction in pediatric patients.	1.03E-20	Yes
Q22-I know and apply pain assessment scales in children.	2.38E-14	Yes
Q23-I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)	1.33E-10	Yes
Q24-Training on acute pain in children and its management is sufficient.	1.14E-09	Yes
Q25-I can identify early signs of pain in newborns.	6.5E-11	Yes
Q26-I know how to act in the case of acute pain in children.	3.56E-10	Yes
Q27-Analgesia should be used before performing additional traumatic tests.	1.41E-17	Yes
Q28-Do children have memory of painful episodes?	0.000905	Yes
Q29-Do you think that inadequate pain control can influence the adult personality of children?	0.415501	No

Q30-Is pain proportional to the magnitude of the injury that causes it?	5.03E-12	Yes
Q31-Is it useful to explain to a 4-year-old what you are going to do to calm him/her down?	0.501734	No
Q32-Does pain in children interfere with their curricular and extracurricular activities in children over 6 years old (school, games, etc.)?	0.128407	No
Q33-Does pain affect the child's social interaction (peers, teachers and family)?	0.126133	No
Q34-Does pain influence a child's choice of social or recreational activities?	0.013288	Yes
Q35-Can pain affect children's cognitive and emotional development?	0.16579	No
Q36-Are appropriate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?	0.230109	No
Q37-Is the training received on acute pain management in children adequate to identify, assess, and treat this pain effectively?	1.14E-05	Yes

The chi-square test revealed a statistically significant association between the variable "profession" (nursing, physical therapy, medicine, and nursing assistants) and the responses provided in a large part of the questionnaire on knowledge, beliefs, and practices regarding pain in pediatrics. Of the 31 questions analyzed, 25 showed a significant relationship with the profession, indicating that the professional field significantly influences how children's pain is perceived, evaluated, and responded to.

In questions more related to direct clinical practice, such as Q14 "After the recommended initial dose of analgesics, subsequent doses should be individualized according to the patient's response", Q22 "I know and apply pain assessment scales in children", Q23 "I know and apply the WHO linear scale of pain treatment levels in children (Analgesia Scale)", Q26 "I know how to act in acute pain in children" and Q27 "Analgesia should be used before performing additional traumatic tests", professions with a more direct involvement in medical care, such as nursing and medicine, tend to answer correctly more frequently. This demonstrates greater training and clinical experience in these areas, which translates into a more evidence-based approach to pediatric pain management.

In addition, these professions also show greater rejection of practices considered unethical, as observed in Q20 "Giving children placebos (sterile water or physiological saline, among others) is often a useful test to determine whether the pain is real," where nursing and medical professionals clearly position themselves against this statement. The same is true for Q19 "Children in pain should be encouraged to endure the pain as much as possible before resorting to any pain relief measure," where clinical professions tend to reject this idea, which ignores the principle of relief of suffering and the child's right to be treated appropriately.

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On the other hand, physiotherapy and ED professionals more frequently express outdated or mythologized beliefs about pediatric pain. This can be observed, for example, in Q11, "Because the neurological system is developing in children under 2 years of age, they have decreased sensitivity to pain and memory of painful experiences," where they are more likely to accept erroneous statements. Similarly, in Q13, "Children under 6 months of age cannot tolerate opioids for pain relief," there is also a greater tendency to endorse an incorrect statement, suggesting less up-to-date knowledge of pediatric pharmacology. In Q12 "Similar stimuli in different children produce the same intensity of pain" and Q16 "Childhood pain is a personal experience influenced by biological, psychological and social factors", the data indicate a lower level of understanding of the subjective and multidimensional nature of childhood pain on the part of these professionals.

Differences are also evident in the perception of the training received. In Q24 "Training on acute pain in children and its management is sufficient" and Q37 "Training received on the management of acute pain in children is adequate to identify, assess, and treat this pain effectively," nursing and medicine tend to display a more critical assessment of the training, while physiotherapy and ED more frequently express a more positive perception. This may be interpreted as a lower awareness of actual training limitations, possibly due to less practical exposure to pain in children.

Regarding the emotional and social dimensions of pain, questions Q28, "Do children have memory of painful episodes?" and Q34, "Does pain influence a child's choice of social or recreational activities?" show significant differences. Nursing and medicine tend to have greater awareness of the emotional and social implications of pediatric pain, while physical therapy and ED studies show a lower level of agreement with these statements, which may be due to training that is less focused on children's psychological and social development.

It is important to note that some questions do not show a significant association with the profession, such as Q29 "Do you think that inadequate pain control can influence the adult personality of children?", Q31 "Is it useful to explain to a 4-year-old child what is going to be done to calm them down?", Q32 "Does pain in children interfere with curricular and extracurricular activities in children over 6 years old (school, games, etc.)?", Q33 "Does pain affect the child's social interaction (peers, teachers and family)?", Q35 "Can pain affect children's cognitive and emotional development?" and Q36 "Are adequate analgesic measures taken proactively before performing potentially traumatic complementary procedures or diagnostic tests in children?" These questions mostly address more abstract, general, or emotional aspects of pain, where there may be a cross-professional consensus or, conversely, a lack of common knowledge that makes it difficult to identify differences between groups.

Overall, the results of the analysis suggest that the profession significantly influences beliefs and knowledge about pediatric pain, and that there is a clear need to strengthen specific training in those areas where the greatest deficits are identified, especially in physical therapy and EDs. At the same time, the

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importance of integrating the ethical, psychological, and social dimensions of childhood pain into the training programs of all health professions is highlighted, fostering a comprehensive and up-to-date view of pediatric care.

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10. Conclusions .

- High participation of the female sex (80.5 %) compared to men (19.5 %) reflects a trend that highlights the feminization of disciplines such as nursing, medicine and physiotherapy, where women have historically had a greater presence, the experiences, perceptions or responses of the female sex may not adequately represent those of the male sex, this imbalance can be explained by cultural, vocational and social factors.
- Predominance of the young-adult group, the majority of participants are concentrated in the age group of 20 to 30 years, which represents more than 60 % of the total sample, indicating a clear predominance of young adults in the study. It is common to find in educational contexts, young people in the stage of vocational training or in the process of entering the workforce, who present favorable characteristics such as digital connectivity, openness to change, and willingness to learn.
- The geographical distribution of participants reveals a clear representation bias, with an overwhelming European majority (65 %) and a low participation from Asia and Oceania. This disproportion limits the external validity of the findings, as it does not adequately reflect global cultural and contextual diversity and can bias the interpretation of the results toward a Eurocentric perspective. The low presence of regions with significant sociocultural realities, such as Asia and Oceania, constitutes a serious limitation that affects equity and international applicability.
- By country, there is a clear concentration in Spain, with a much higher participation than the rest, demonstrating a high inequality in international representation due to structural, academic, and sociolinguistic factors. The low participation of other regions, especially Asia, Africa, and Latin America (with the exception of Peru and Brazil), limits diversity and representation.
- The role within the educational field shows a clear predominance of students. The significant gap between the number of students and that of teachers/researchers highlights potential challenges to ensuring educational quality, especially with regard to personalized attention, academic mentoring, and research promotion.
- The professional distribution of staff reveals a clear predominance of nursing, with significantly greater representation than other disciplines, such as medicine, physical therapy, or nursing assistants. This structure demonstrates the central role of nursing staff in healthcare. The unequal distribution could also reflect institutional hiring decisions or structural deficiencies in certain professional profiles within the health system.
- The results show that 28.7 % of health personnel study and work simultaneously, being more frequent in nursing students (68.5 %). This double burden responds to economic and employability factors, but it carries risks such as fatigue, stress, poor academic performance, and compromised quality of care. Although some value the benefits, the

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negative effects are widely documented. In Europe, this practice is more common due to greater educational flexibility, while in Asia and Oceania it is rare. Institutions are required to adopt inclusive policies that protect student health and ensure quality education.

- The majority of the health personnel surveyed (77.9 % do not have minor children, suggesting a professional profile focused on academic and professional development, especially in Europe and America. This situation limits, in some cases, sensitivity toward humane pediatric practices, as parenting experience fosters greater empathy and understanding of children's pain. On the other hand, those who are parents, especially women, face a double emotional and work-related burden with negative effects on their health and performance. Strengthening training in humane approaches and promoting work-life balance policies are needed to ensure staff well-being and the quality of childcare.
- The results show that 18 % of the surveyed healthcare personnel care for older adults, which represents an additional burden on their clinical duties. This dual responsibility—most common among physicians (30.5 %) and nurses in absolute numbers—is associated with a higher risk of stress, burnout, and impaired well-being. At the continental level, the Americas, Africa, and Asia have the highest proportions of caregivers, reflecting the limited supply of formal care and the weight of the family environment. In contrast, Europe shows a lower burden thanks to its structured support systems. This reality highlights the urgent need to implement family-sensitive labor policies, with emotional support, training, and work-life balance to prevent burnout.
- The results show that 21.6 % of the surveyed healthcare personnel care for dependents, which implies a double work and domestic burden that affects their physical and mental health. This burden is more pronounced among physicians (39.4 %) and nurses by volume, evidencing a pressure that is not always visible or institutionally supported. Women are the ones who most assume these tasks, reflecting structural gender inequalities. At the continental level, Asia, Oceania, Africa, and the Americas have higher proportions of caregivers, associated with the limited supply of formal services. In contrast, Europe has the lowest proportion, thanks to more developed care policies. This reality demands actions that include support networks, work-life balance, and strategies to prevent emotional burnout among healthcare workers.
- Existe una división significativa entre los profesionales de la salud respecto a la presencia de los padres durante procedimientos dolorosos en niños. A pesar de la sólida evidencia que respalda sus beneficios (reducción del dolor, ansiedad y trauma), una mayoría del personal (≈70%) se opone a esta práctica, reflejando una brecha entre la evidencia científica y la práctica clínica actual.
- An 85.4 % of participants disagree with the idea of encouraging children to endure pain before receiving relief, which demonstrates a favorable

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professional awareness toward timely, empathetic, and ethical relief of children's pain.

- Opinions are almost equally divided on the use of placebos to assess the veracity of pain in children. Although some studies support their efficacy (in an informed format), their use without consent raises significant ethical dilemmas, especially in the pediatric population.
- More than 66% of respondents acknowledge that opioid use in pediatrics can carry a risk of addiction. This perception is consistent with the literature and reflects a preventive professional attitude toward the use of potent analgesics in acute settings.
- There is a significant percentage (40.4%) in the medical profession and 38.2% in nursing who report some degree of disagreement in knowing how to act in the face of acute pain in children, related to the lack of knowledge or training received.
- A large majority (73.4%) agree with administering analgesia before painful procedures. This result largely reflects a proactive and preventive attitude, key to humanizing pediatric care. While the simultaneous use of other interventions is valuable in many patients and essential in some, analgesics are necessary in almost all cases.
- The results show that a high percentage (92.9%) of participants believe that children have memories of painful episodes. It is now widely accepted that the central nervous system (CNS) is sufficiently developed to process nociceptive sensations from before birth. In addition to being a psychologically negative experience, it provokes adverse physiological responses that can increase morbidity and mortality.
- Of the total respondents, 94.6% believe that inadequate pain control can influence a child's adult personality. There is abundant scientific evidence demonstrating that sensitization and poor pain management in the early stages of life lead to more pain later in life.
- The results show that 55.4% of healthcare personnel do not believe that pain is proportional to the magnitude of the injury, compared to 44.6% who do. In nursing, opinions are almost equally divided, while in medicine and physiotherapy, a more modern view predominates, dissociating pain from physical damage. In the group of "other professionals" and nursing assistants, a slight majority also denies this proportionality. At the continental level, Europe leads in rejecting the classical view of pain (62.3% deny it), followed by Africa with divided perceptions. In contrast, in the Americas and Asia, the traditional idea of pain as a direct reflection of injury still predominates. Oceania, despite its low representation, aligns more with the European view. These results reveal educational and cultural differences in the conceptualization of pain across regions and professions.
- There is high adherence with 96.3% affirmative responses from nursing and medical professionals, as well as being a majority global practice, with Europe leading in adoption of the practice, that pain interferes with

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curricular and extracurricular activities of children over 6 years of age, with a positive trend toward its implementation as a procedure or policy.

- Chronic childhood pain has a significant and multidimensional impact on children's social interactions. The 96.6% consensus in responses reflects a reality widely recognized by health professionals and families. It impacts all areas of social development: it impairs peer relationships, compromises academic performance and relationships with teachers, and generates dysfunctions within the family system. This consensus reinforces the need to consider childhood pain not only as a physical phenomenon, but also as a social and emotional problem requiring multidisciplinary care. The results reflect global agreement on the negative impact of pain on children's social interactions. This international consensus underscores the importance of addressing childhood pain from a multidimensional perspective, considering both physical and psychosocial aspects.
- Pain in childhood constitutes a significant barrier to participation in social and recreational activities, directly affecting children's quality of life, emotional well-being, and social development. This study demonstrates that pain negatively influences these choices (95.9%), supporting previous research findings that show the impact of pain on social isolation, decreased friendships, and reduced participation in games and sports. Childhood pain should be viewed not only from a clinical perspective, but also from a psychosocial perspective.
- Childhood pain has a significant and proven impact on children's cognitive and emotional development. It can generate neuroanatomical and emotional alterations that affect behavior, learning ability, emotional regulation, and psychological well-being. The high percentage of participants (95.5%) who recognized this influence is consistent with research showing damage to brain structures, difficulties in emotional expression, and decreased cognitive performance in children exposed to painful or traumatic situations.
- The survey results reflect significant progress in pediatric clinical practice, showing that 76.2% of professionals implement proactive analgesic measures before potentially painful procedures. This trend aligns with the scientific evidence supporting anticipatory analgesia as an effective strategy for reducing pain, anxiety, and physiological responses to stress in children. However, the persistence of 23.8% not implementing these practices reveals a significant gap in pediatric care, possibly attributed to a lack of training, resources, or standardized protocols.
- Half of the professionals surveyed (53.8%) consider their training in pediatric pain management to be insufficient. This perception is consistent with recent scientific findings that point to a lack of knowledge, persistent myths, and limited practical training as key barriers to the effective management of pediatric pain. Poor training directly impacts the quality of care, promotes underdiagnosis, and limits the appropriate use

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of pharmacological and non-pharmacological interventions, which can negatively affect children's physical and emotional development.

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11. Future recommendations .

It is essential that future research promote more equitable representation of the sexes or, failing that, conduct gender-differentiated analyses in order to better identify and understand potential inequalities or specificities surrounding the phenomenon under investigation.

To achieve more representative and equitable research, it is essential to include methodologies that promote the participation of diverse age groups, especially underrepresented ones, such as older adults and adolescents.
Implement more equitable geographic inclusion strategies in future research, strengthening regional scientific collaboration networks, promoting multilingual participation, and adapting methodologies to diverse technological and cultural contexts. This will allow for a more representative and comprehensive view of the phenomenon under study, especially on sensitive topics such as the humanization of pediatric pain care.

Develop comprehensive intervention strategies, such as play therapy and other forms of psychoemotional support, that enable children with pain to maintain social ties and participate in recreational activities tailored to their abilities. These actions should be part of multidisciplinary pediatric care programs, aimed at improving both the physical health and the emotional and social well-being of children affected by pain.

Early detection and a comprehensive approach to childhood pain, including not only physical treatment but also emotional and psychological support, are essential. It is essential to implement interdisciplinary intervention programs in educational and healthcare settings that strengthen emotional regulation, prevent long-term neuropsychological effects, and promote healthy cognitive and emotional development in children.

Incorporate theoretical and practical content based on a culture of ongoing development among health professionals. Implementing interprofessional training strategies that include the use of validated scales, standardized protocols, and individualized treatment approaches is essential to improve the care and well-being of children experiencing pain.

Train healthcare personnel, especially physicians and nurses, in the principles of family-centered care so they understand and value the therapeutic role of parents during painful procedures.
Establish clear institutional guidelines that promote immediate pain relief for children, using a multimodal approach (pharmacological and non-pharmacological), avoiding unjustified postponement of treatment.

Develop regulations that limit the use of placebos to clinically justified contexts, always with informed consent, and within ethical protocols endorsed by institutional committees.

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Prioritize non-opioid analgesics as the first line of treatment for acute pain, reserving opioids only for specific situations, under strict surveillance, and monitoring for the risk of misuse in later stages.

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Project: 101177475 — HUPEDCARE — ERASMUS-EDU-2024-CBHE.2024-2027.
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