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Pediatric procedural sedation and analgesia in the emergency setting in community hospitals in Italy: current status and challenges

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Abstract

Background We investigated the use of mild procedural sedation/analgesia in children at community hospitals to describe current practices and identify challenges to its effective implementation.

Methods Cross-sectional survey among all medical and nursing staff of the Paediatric, Emergency, Anesthesiology and Surgical Units of four secondary care hospitals in Italy, in the years 2021–2022.

Results The response rate was 80% (range across centers 57%-100%); 346 complete questionnaires were analyzed (52.6% physicians; 47.4% nurses). Overall, procedural pain in children was considered a relevant topic by 90.8% of staff. Procedural sedation/analgesia was considered helpful for procedural success (97.4%) and for improving children's experience of pain/anxiety (98.6%). However, 47.7% were not satisfied with the management of procedural pain/anxiety at their workplace and 56.9% reported a lack of adequate knowledge. In fact, only 22.8% demonstrated adequate knowledge on fasting times and 39.6% on correct patient monitoring during procedural sedation. From a pharmacological perspective, midazolam was the most accessible (80.9%) and used (58.7%) medication, while intranasal fentanyl and nitrous oxide were less available (15.3% and 2.9% respectively) and used (7.2% and 2.6% respectively). Procedural sedation was generally practiced by anesthesiologists (65.9%). Overall, 91.9% of respondents performed/participated in < 4 pediatric sedations per month. For 64.3% lack of training represented the greatest barrier to pediatric sedation/analgesia implementation.

Conclusions Despite staff awareness about the importance of pediatric procedural sedation/analgesia, lack of specific knowledge and training, as well as limited availability of sedative/analgesic medications represent current challenges to procedural sedation implementation in community hospitals without a pediatric emergency room.

Keywords Analgesia, Children, Emergency department, Nitrous oxide, Midazolam, Fentanyl

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Background

Pain and injuries are common reasons for presentation to the emergency department (ED), especially in children, representing up to 60–70% of pediatric ED visits [1]. According to the revisited definition of pain, "a distressing sensory and emotional experience with actual or potential tissue injury", pain is always a subjective symptom, potentially associated with a psychological component. It is not only nociception and verbal description, but it is one of several ways to express suffering, particularly in children [2]. Pain in the emergency setting is often associated with fear and anxiety not only for the discomfort related to pain itself, but first and foremost for the unexpected hospital encounter and the need for unknown and, often painful, procedures [3].

Effective and prompt analgesia, anxiolysis and sedation (collectively referred to as procedural sedation and analgesia, PSA) outside the operating room have become the standard of care for the management of pain and anxiety in children undergoing painful or anxiogenic diagnostic and therapeutic procedures. Despite the availability of many international guidelines for pediatric PSA since the early 2000s, in actual clinical practice, pain and anxiety often remain underrecognized and undertreated, especially in the emergency setting [4–7].

In Italy the PIPER (Pain In Pediatric Emergency Room) study group, which is involved in activities aimed at improving pain management in children, and other reports found that pediatric pain management is still suboptimal in EDs despite the availability of guidelines for the management of pediatric pain [8–10]. Recent studies have identified several barriers to the implementation of procedural sedation and analgesia (PSA), including the limited availability of certain medications, the absence of standardized protocols, staff shortages, and inadequate physical spaces. However, these studies primarily reflect the context of pediatric emergency departments in tertiary care centers and are largely based on responses from department heads or their delegates [8, 11]. Of notice, the state of Emergency services in Italy is very heterogeneous. Most children are taken care of in adult EDs, which often are not equipped with dedicated staff for pediatric emergency care, while pediatricians cover pediatric wards for 12–24 h; only about a third of children have access to third level care in pediatric EDs [8, 9].

Moreover, there is an uneven geographical distribution of facilities, with significant differences among Northern and Central Italy, as well as Northern and Southern Italy. For this reason, in certain community hospitals, or secondary care centers, it is not unusual for children to be managed by healthcare professionals without specific pediatric skills. This is even more evident in the context of PSA, where specific recommendations on training requirements to acquire the necessary PSA skill set, have only recently been published [12].

To the best of our knowledge, no previous studies have exclusively surveyed the status of PSA in Italian secondary-level hospitals, targeting all healthcare professionals involved or potentially involved in this practice from both medical and nursing perspectives. Therefore, the objective of our study was to describe the current minimal-mild PSA practice patterns in Italian secondary level hospital facilities without a dedicated pediatric emergency room, highlighting barriers to best practices, with the ultimate goal of improving the care of children's procedural pain and anxiety across all levels of care.

Methods

Study design, setting and study period

A cross-sectional survey study was conducted in the years 2021–2022 through the administration of an online questionnaire to the medical and nursing staff of the Paediatric, Emergency, Intensive Care Units and Surgical wards belonging to four secondary-level Italian hospitals: Santa Maria della Misericordia in Rovigo, Policlinico Riuniti in Foggia, IRCCS Sacro Cuore in Negrar Valpolicella (Verona), and Ramazzini in Carpi (Modena).

Study population

The survey was distributed to the medical staff of the Emergency Room, Pediatrics, Anesthesia-Resuscitation, Pediatric Surgery, Orthopaedics, and Ear Nose and Throat wards, as well as to nursing staff of the Pediatric wards and Emergency Rooms. The sample included medical and nursing staff involved in procedural sedations in the emergency setting in hospitals without a pediatric emergency room.

Survey

The questionnaire was developed by a medical-nursing working group of experts in pediatric and pediatric emergency care, and it was reviewed and tested several times by the working group until a consensus was reached on the content and form of each question. Content validity was achieved through expert consensus. The questionnaire development process included: establishment of the board, expansion of the panel of participants, web meetings to discuss the versions of the survey, drafting of the final survey. The questionnaire underwent pilot testing at Ramazzini Hospital, Carpi, where it was administered via QR code to pediatric physicians over a period of two weeks. Feedback was systematically collected to identify issues and gather suggestions aimed at improving the clarity, comprehensibility, and overall usability of the instrument to enhance face validity prior to its implementation in the main study.

The questionnaire was composed of 37 questions, and it was structured into four sections as follows: demographic information (6 questions), personal perspectives and knowledge (16 questions), current pediatric PSA practice at the respondents' workplace (10 questions), PSA related training (5 questions).

The questionnaire was accessible online through the REDCap (Research Electronic Data Capture) [13, 14], via direct access links shared by email; furthermore, posters were created for its dissemination in the wards involved in the projects. Posters included a QRcode that participants could frame, directly linking to the questionnaire. The participation took place on a voluntary basis, respecting the general principle of anonymity. The full survey, translated in English, is reported in Additional File 1.

Statistical analysis

A descriptive analysis was carried out with calculation of frequencies and percentages for the categorical variables. Associations among variables were explored with the Chi-squared test. A $p < 0.05$ was considered statistically significant. The statistical software Jamovi was used.

Results

The response rate was 80%, with a range between 57% and 100% across participating centers. Three hundred and forty eight healthcare professionals completed the survey (47.4% nurses and 52.6% physicians). Overall, female respondents were 62.1%. The Emergency Room was the most represented (39.3% of responses), followed by Pediatric wards (27.2%) and Intensive Care Units (22.0%). Almost half of the healthcare professionals who responded to the survey (50.6%) usually took care of less than ten pediatric patients in one month and more than half (52.9%) declared that PSA was performed only by anesthetists. While 49.1% of the sample had not performed any PSA in the month preceding the survey, 42.8% had performed less than four PSA in the same period. Procedures for which PSA was most often used at the respondents workplace were wound suture (87.3%), difficult venous access (83.2%), burn dressing (75.1%), lumbar puncture (63.6%) and foreign body removal (60.1%).

Characteristics of healthcare professionals who completed the survey are reported in Table 1.

With respect to personal perspectives and knowledge: 90.8% of healthcare professionals considered pain a relevant topic for their profession, 97.4% of the completed surveys revealed that PSA was considered important in order to improve the success of pediatric emergency procedures and to reduce anxiety and pain in pediatric patients (98.6%). Almost half of respondents (47.7%) were not satisfied with the management of anxiety and pain in pediatric emergency care at their institution, while most (68.8%) believed the treatment of pain and anxiety to be an ethical imperative and PSA to improve the care of pediatric patients (75.1%). A lower percentage considered PSA for children in the emergency setting as a safe option compared to the operating theatre or a standard of care (20.2% and 30.0% respectively). Most of the respondents correctly identified the definition of PSA (86.4%) and of minimal/mild PSA (80.0%). However, only 22.8% were aware of the correct recommendations about fasting time for minimal/mild PSA, while less than half (39.6%) provided a correct response on monitoring recommendation for minimal/mild PSA (Table 2).

With respect to knowledge on medications, 81.8% responded that Midazolam, either administered intranasally or orally was safe and effective, while this percentage decreased to 58.4% for intranasal Fentanyl, and to 43.4% for nitrous oxide premixed with oxygen. Of interest, 32.9% of healthcare professionals responded they did not know whether nitrous oxide was safe and effective.

Perceived effectiveness and safety of nitrous oxide, fentanyl and midazolam are reported in Fig. 1(a). Risk of respiratory depression/need for ventilation after drug administration are represented in Fig. 1 (b).

When analyzing the questions that tested the knowledge on medications side effects, the risk of respiratory depression using Midazolam intranasally or per os was rated as rare or infrequent by 74.6% of respondents, while the same response was provided by by 51.2% of respondents for intranasal fentanyl and by 48.0% for nitrous oxide. Lastly 33.5% of healthcare professionals declared that they did not know about the side effects of nitrous oxide.

The chi-square test revealed that there is no statistically significant relationship between years of work experience and correct knowledge regarding mild/minimal sedation. Table 3.

Concerning the use of non pharmacological techniques and PSA-related medications in the different work settings investigated, EMLA (lidocaine 2,5%, prilocaine 2,5%) was the most available (68.5%) and used (60.4%), and the only one present in more than a half of the facilities. Only the use of Midazolam either intranasally (28.9%) or orally (29.8%) was reported by more than a quarter of respondents, Fig. 2.

Availability of PSA related tools and protocols was also investigated. The Mucosal Atomizing Device (MAD) for intranasal medication administration was available to 32.7% of respondents. Only 5.8% of professionals stated that approved protocols for PSA were available and used in their settings. The most frequent reason for unavailability or lack of use of PSA-related protocols was lack of training on pediatric PSA (64.3%), Table 4.

Table 1 Characteristics of healthcare professionals that participated in the study and their setting of work

Question	Answer	*n°*	%
What is your profession?	Physician	182	52.60%
	Nurse	164	47.40%
What ward do you work in?	Pediatric Ward	94	27.20%
	Emergency Room	136	39.30%
	Intensive Care Unit	76	22.00%
	Surgery/Orthopedic/Urology/ENT (Ear Nose and Throat) Ward	38	11.00%
	I prefer not to answer	2	0.60%
What gender do you identify with?	Male	126	36.40%
	Female	215	62.10%
	I prefer not to answer	5	1.40%
How old are you?	< 30 years old	68	19.70%
	30–40 years old	123	35.50%
	41–50 years old	76	22.00%
	51–60 years old	54	15.60%
	> 60 years old	25	7.20%
How many years of work experience do you have?	< 5	108	31.20%
	5–10	78	22.50%
	11–20	69	19.89%
	21–30	42	12.10%
	> 30	49	14.20%
How many children have you taken care of in the last month in your clinical setting?	< 10	175	50.60%
	10–50	122	35.30%
	51–100	39	11.30%
	> 100	10	2.90%
In your hospital, who carries out minimal/mild pediatric analgosedation? [Multiple choice]	Anesthetist	228	65.90%
	Emergency room doctor	58	16.80%
	Consultant doctor who is not an anesthetist	25	7.20%
	Team dedicated to procedural sedation and analgesia	23	6.60%
	Nobody	38	11.00%
	I don't know	30	8.70%
In your setting, how many minimal/mild PSA have you carried out outside the operating room, in children?	None	170	49.10%
	< 4 per month	148	42.80%
	1–2 per week	20	5.80%
	3–7 per week	8	2.30%
	> 2 per day	0	0.00%

Table 2 Fasting time and type of monitoring recommended

Question	Answer	*n°*	%
How much fasting time is recommended for procedures involving minimal/mild sedation?	30 min	23	6.6%
	1 h	32	9.2%
	2 h	150	43.4%
	Not recommended	79	22.8%
	I don't know	62	17.9%
What type of monitoring is recommended in children undergoing minimal/mild sedation?	The use of any monitoring, beyond clinical observation, is not recommended as long as verbal contact remains with the child, otherwise the use of pulse oximetry is recommended	137	39.6%
	Monitoring with pulse oximeter always	148	42.8%
	Monitoring with pulse oximeter and capnography always	42	12.1%
	I don't know	19	5.5%

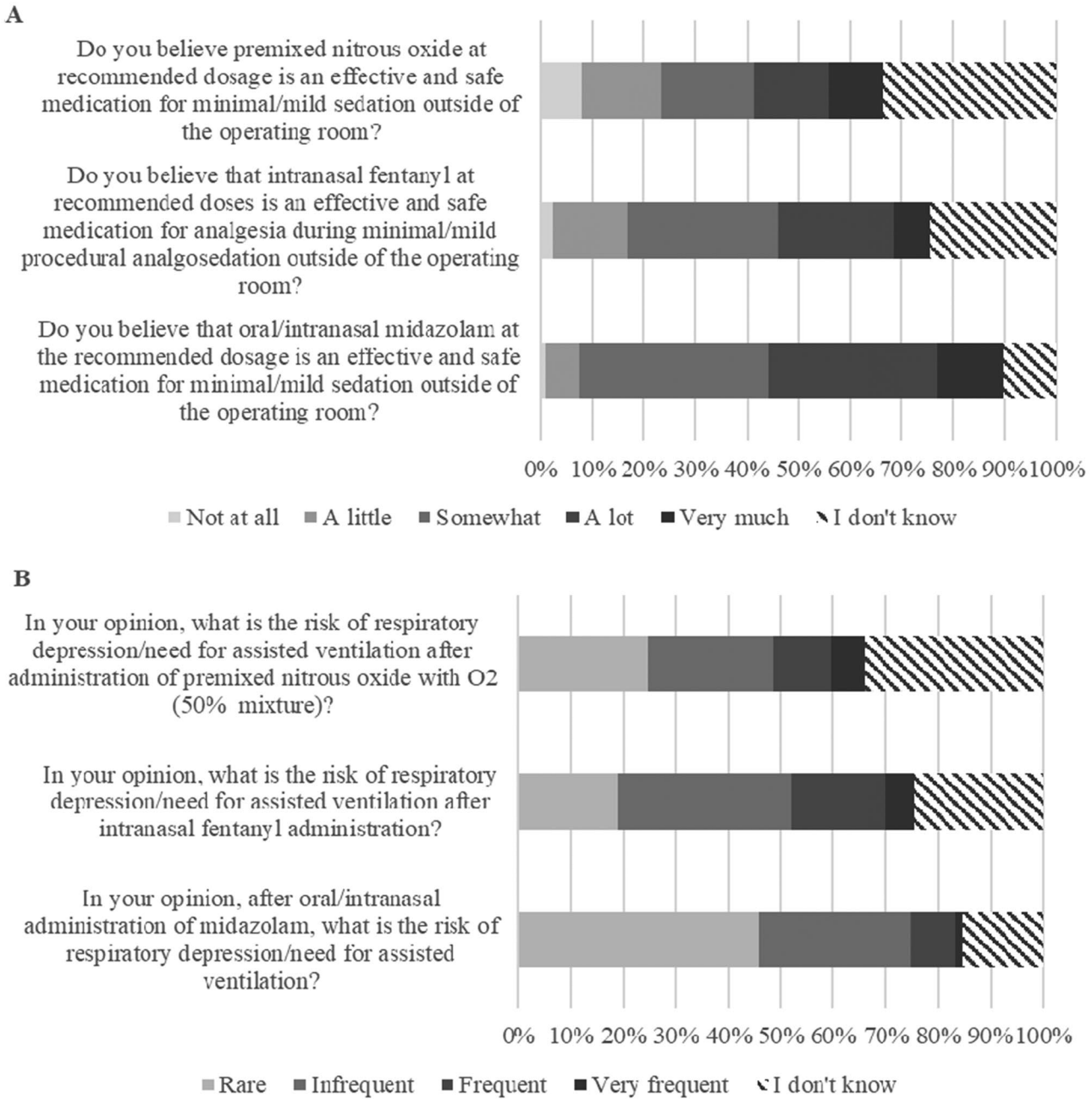

Fig. 1 **(A)** Effectiveness and safety of nitrous oxide, fentanyl and midazolam. Survey assuming the use at the recommended dosage for minimal/mild sedation outside of the operating room. **(B)** Risk of respiratory depression/need for ventilation after administration of nitrous oxide, fentanyl and midazolam. Rare (< 1%), Infrequent (1–5%), Frequent (6–10%), Very frequent (> 10%)

With respect to training, 76.0% of healthcare professionals had never carried out a training course on the assessment and management of pediatric pain and anxiety and 88.7% had never participated in a PSA training course. Those who participated in a PSA course stated that they could not apply enough of what they had learned in their clinical context in approximately half of cases. Finally, 96.5% of the study population stated that receiving training in pediatric PSA was important for their profession, Table 5.

Discussion

Our study provides a multicenter snapshot on the provision of minimal-mild PSA to children in the emergency care setting in secondary-level community hospitals in Italy. Based on the high response rate, our survey ensured

Table 3 Correct PSA knowledge and work experience

*Experience	Experience < 5 years	Experience ≥ years	Chi-square	**p-value
Knowledge about recommended monitoring				
Yes	38 (27.9%)	77 (36.7%)	2.83	0.092
No	98 (72.1%)	133 (63.3%)		
Knowledge about recommended fasting				
Yes	26 (19.1%)	53 (25.2%)	1.75	0.185
No	110 (80.9%)	157 (74.8%)		
Risk of respiratory depression after oral/intranasal midazolam				
Yes	58 (42.6%)	100 (47.6%)	0.822	0.364
No	78 (57.4%)	110 (52.4%)		
Risk of respiratory depression after intranasal fentanyl				
Yes	21 (15.5%)	44 (21.0%)	1.64	0.2
No	115 (84.5%)	166 (79.0%)		
Risk of respiratory depression after premixed nitrous oxide with O2 (50% mixture)				
Yes	38 (27.9%)	46 (21.9%)	1.64	0.201
No	98 (72.1%)	164 (78.1%)		
Effectiveness and safety of midazolam				
Yes	61 (34.8%)	93 (50.2%)	0.0108	0.917
No	75 (65.2%)	117 (49.8%)		
Effectiveness and safety of fentanyl				
Yes	46 (44.8%)	57 (27.1%)	1.76	0.184
No	90 (55.2%)	153 (72.9%)		
Effectiveness and safety of premixed nitrous oxide with O2 (50% mixture)				
Yes	37 (27.2%)	50 (23.8%)	0.506	0.477
No	99 (72.8%)	160 (76.2%)		

* Experience: the experience was divided into two groups using as a discriminant the minimum possible level of experience investigated, i.e. less than 5 years of experience

** based on Chi-square test

a good representativeness of the sample of interest at the four participating sites.

Our findings highlight a substantial gap between awareness and implementation. Although most healthcare professionals acknowledge PSA as essential for reducing pain and anxiety in children, many—particularly non-pediatric staff—continue to perceive it as unsafe or risky.

This gap has been previously described; according to Rephaeli et al. [15], although the majority of consultant surgeons acknowledged the importance of pediatric PSA in the ED setting, a high percentage would still perform painful procedures without PSA if it was not readily available. While the majority of respondents to our survey believed PSA to be important as a means to improve patient care and more than half considered PSA to relieve children's pain and anxiety as an ethical imperative, less than 50% considered it a safe option, or a standard of care; this perception, combined with limited training opportunities, scarce availability of drugs and protocols, and organizational barriers, contributes to the persistent underuse of PSA outside tertiary centers despite the large available body of evidence in the field [16–20].

Overall, our data highlight a systemic need for structured education, institutional protocols, and adequate resources to ensure equitable pediatric care across all hospital levels. Bridging the gap between knowledge and practice is crucial to normalize PSA as a standard of care rather than an exception. This goald could be achieved by developing a true culture of procedural sedation that encompasses comprehensive patient management according to well-defined safety protocols, training, and skill maintenance. In a recent study, Leroy et al. focused specifically on the need to raise awareness on procedural sedation management by identifying a set of core competencies in the domains of knowledge, skills, and attitudes across physical safety, effectiveness, psychological safety, and deliberate practice [21].

Access to the medications needed to provide effective PSA is also a key aspect for effective PSA implementation. In our survey intranasal fentanyl and nitrous oxide were less available (15.3% and 2.9% respectively) and used (7.2% and 2.6% respectively) compared with midazolam. This finding considerably differs from other settings where these medications are widely used in pediatric emergency care for their high efficacy and safety profiles, even in combination, based on institutional protocols [20, 22–25].

Non-pharmacological techniques, along with all pharmacologic options required to provide minimal-to-mild sedation, should be available and routinely implemented across all levels of care [11]. Moreover, the Mucosal Atomization Device (MAD) for intranasal administration of fentanyl and midazolam should be readily accessible. In our study, however, only one third of respondents reported that the MAD was available in their clinical setting.

Besides availability of medications and equipment for their administration, the efforts of minimal-mild PSA implementation should be mainly directed towards the training of non-anesthesiologist physicians and nurses. Over half of respondents stated that all PSA levels, including minimal-mild PSA, were exclusively performed by anesthesiologists in their setting. At a European level, a recent study showed that procedural sedation in children is predominantly performed by pediatricians, accounting for 82% of cases [22]. Indeed, most of the procedures that would benefit from minimal-mild PSA in children are routine frequent procedures, such as wound sutures, difficult venous accesses, minor burn dressings or lumbar punctures, which could not be handled by anesthesiologists given their high volume of work and the need to direct their skill set to the operating room, intensive care units or more complex patients or procedures requiring deeper levels of sedation and analgesia. Previous studies

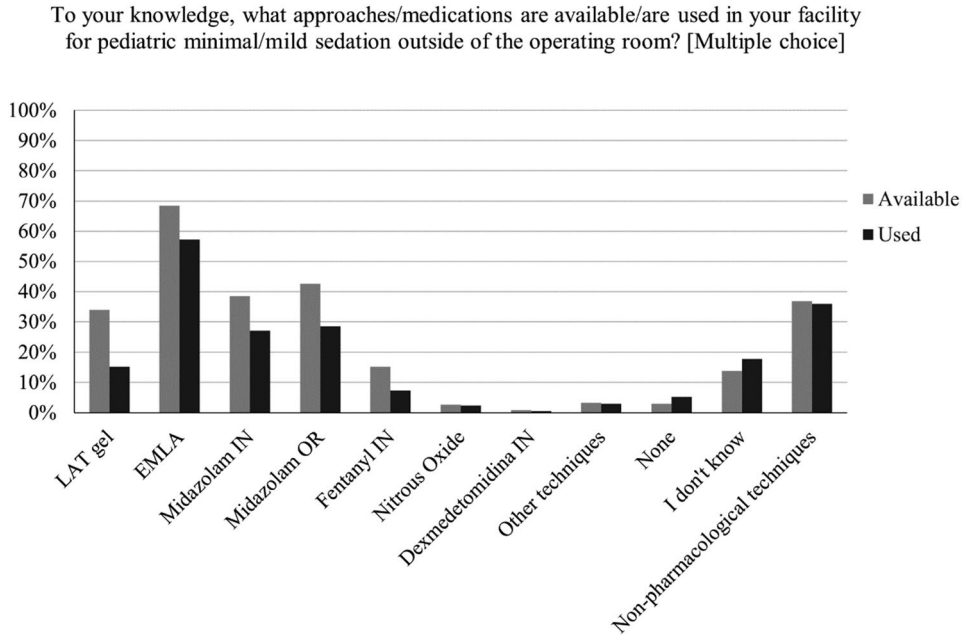

Fig. 2 Pharmacological and non-pharmacological techniques available and used at the respondents workplace

Table 4 PSA related tools and protocols

Question	Answer	*n°*	%
Is the MAD (Mucosal Atomization Device) for intranasal drug administration available in your clinical setting?	Yes	113	32.7%
	No	137	19.8%
	I don't know	96	13.9%
In your clinical setting, are there approved and shared protocols/routes on minimal/mild procedural sedation and analgesia outside the operating room, for children?	Yes, we use them	20	5.8%
	Yes, but we don't use them yet	50	14.5%
	No	148	42.8%
	I don't know	128	37.0%
If there are no protocols or if they are not yet used, why?	Fear of adverse effects	22	13.0%
	Lack of training	108	64.3%
	Shortage of staff	26	15.5%
	Lack of time	27	16.1%
	Lack of dedicated spaces	21	12.5%
	Other	3	1.8%

Table 5 PSA related training

Question	Answer	*n°*	%
Have you ever participated in a training course on pain assessment and management in children?	Yes	83	24.0%
	No	263	76.0%
Have you ever participated in a training course on pediatric procedural sedation and analgesia?	Yes	39	11.3%
	No	307	88.7%
If yes, have you had the opportunity to apply what you learned in your clinical setting?	Not at all	3	7.7%
	A little	17	43.6%
	Somewhat	12	30.8%
	A lot	4	10.3%
	Very much	3	7.7%
How important do you think it is to receive training in minimal/mild procedural sedation and analgesiaanalgosedation outside of the operating room for children in a pediatric setting?	Not at all	1	0.3%
	A little	11	3.2%
	Somewhat	56	16.2%
	A lot	126	36.4%
	Very much	152	43.9%

have highlighted how PSA is infrequently performed in children undergoing venipunctures, nasogastric tube placement, or bladder catheter placements and that most children needing sutures received local anesthetic injections instead of the LAT gel (lidocaine 4%, adrenaline 0.05%, tetracaine 0.5%) to provide effective local anaesthesia [26]. Effective training has the potential to greatly improve the care of children receiving these frequent painful procedures.

The need for specific training clearly emerged from our survey, particularly from the section dedicated to training-related questions. Only one tenth of the respondents had completed a course on pediatric procedural sedation and analgesia (PSA), yet the vast majority recognized training as an essential prerequisite for safely providing PSA to children [22, 27–29]. However, a recent European survey has highlighted as most common barriers to the implementation of procedural sedation physician and nursing staff shortage, lack of physical space, of topical anesthesia for laceration care, and of general safety and monitoring guidelines [22].

Current consensus guidelines emphasize the need for structured and comprehensive training for healthcare professionals involved in procedural sedation [11, 30, 31]. Such training should encompass patient assessment, understanding of the pharmacology and physiology of sedative agents, mastery of the selected sedation techniques, appropriate use of monitoring systems, evaluation of recovery of normal functions, and recognition and management of potential complications. In addition, proficiency in airway management and competence in performing cardiopulmonary resuscitation are considered essential components of procedural sedation practice [11, 30, 31]. Furthermore, procedural sedation competencies should be reinforced through regular simulation-based training [31].

Recent studies have demonstrated the effectiveness of advanced training modalities such as high-fidelity simulation [32, 33] and virtual reality–based training [34]. These approaches have been shown to enhance knowledge acquisition and retention, improve both theoretical understanding and procedural performance, and facilitate the development of clinical competencies [32–34].

Although no single modality has yet been proven superior, virtual reality remains a promising and evolving educational approach. However, most available studies have focused on learners in training, while data involving practicing healthcare professionals are still limited [32–34].

Alongside training, another key element to ensure effective implementation of best practices is the availability of institution wide and shared protocols and procedures, which were lacking at the respondents' workplace in the majority of cases. However, national and international guidance is available to facilitate the development of local documents to define roles, responsibilities and procedures at individual institutions and resources should be dedicated to the production of local protocols and guidelines [11, 16–20, 29].

Overall, our survey has identified the gaps in provision of minimal/mild PSA to children in community hospitals in the emergency care context, enabling planning of implementation strategies to ensure that the standards of care for children are met across all levels of care.

The results of our study need to be interpreted in light of its limitations. As a matter of fact, the study's generalizability is limited by several factors. First, the use of an ad-hoc non validated questionnaire. This is a significant weakness of our study. However, no validated questionnaire is available for this purpose. As described in the methods section, despite the lack of formal validation, expert development, review and pilot testing were performed in order to maximize the robustness and face validity of the data collection tool used in our study.

In addition, despite being multicenter, the study was carried out in a small and geographycally unbalanced sample of four hospitals, connected by pediatric and nursing staff conducting their research projects at the University of Padova, Italy, as part of their nursing graduation or second-level short specialisation degree at the Department of Women's and Children's Health. This trait d'union across participating centers allowed for high standardization of study procedures and from the passionate commitment of staff coordinating the study at each institution, which was essential to achieve a high response rate. Finally, survey studies, by assessing the opinions of participants, may not accurately reflect what happens in actual clinical practice. However, given the consistency of responses across centers to several questions of the survey, it is unlikely that the results of our survey would substantially differ from reality. Despite this, our work effectively highlights key cultural and structural barriers that must be addressed to advance safe pediatric PSA practice in secondary-care hospitals with no pediatric emergency room.

Conclusions

Our survey revealed that although most healthcare professionals acknowledge PSA as essential for reducing pain and anxiety in children, many—particularly non-pediatric staff—continue to perceive it as unsafe or risky. This perception, compounded by limited training opportunities, restricted access to medications and standardized protocols, and organizational barriers, contributes to the ongoing underuse of PSA outside tertiary centers.

These findings highlight a systemic need for structured education, institutional guidelines, and adequate resources to ensure equitable pediatric care across all

hospital levels. Bridging the gap between knowledge and practice is crucial to establishing PSA as a standard component of care rather than an exception.

Abbreviations

ED	Emergency Department
EEG	Electroencephalogram
ENT	Ear Nose and Throat
MAD	Mucosal atomization device
PIPER	(Pain In Pediatric Emergency Room) study group
PSA	Procedural sedation and analgesia
REDCap	Research Electronic Data Capture

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13052-025-02173-7.

Supplementary Material 1

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Author contributions

SB, ML and FP conceptualized the study. All the authors contributed to the development of the survey. ML, FP, MDT and MB developed the data collection tool. ML and CP conducted data analysis. SB provided oversight of study procedures. ML, FP, CP and MDT drafted the manuscript. All the other authors critically reviewed and revised the manuscript. All authors had responsibility for the decision to submit the study for publication.

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Data availability

The datasets generated and analysed during the current study are available in Zenodo repository, at the link https://doi.org/10.5281/zenodo.15068730.

Declarations

Ethics approval and consent to participate

Being a survey collecting anonymous data only, a waiver of approval from the Ethics Committee was granted and the study protocol was assessed and approved by the Internal Research Review Board within the Division of Pediatric Emergency Medicine of the Department of Women's and Children's Health, University Hospital of Padova and was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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