

Anaesthetists' views of managing children's pain post-surgery

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Abstract

This study explored the views, knowledge and use of pain assessment tools of 185 anaesthetists working in Europe via an e-survey, which included three scenarios of children with varying degrees of unresolved pain. Our findings were that the three most frequently used pain assessment tools were VAS, FLACC and FACES. Anaesthetists appear to value the judgement of both parents and nurses in assessing a child's pain, as they reported that in cases of uncertainty about a child's pain, they would 'ask the parent' (n=88) or 'ask a nurse' (n=81). Fewer than half used a pain assessment tool with 'most patients' and some respondents were dismissive of the value of pain tools preferring to rely on 'common sense' or 'clinical judgement'. Opportunities were identified regarding multidisciplinary education related to children's pain management practice.

Background

Pain management within acute care settings is managed by professionals who have a high workload and competing demands and it must include monitoring the child's pain, and evaluating the effectiveness of an intervention¹. While the gold standard for pain assessment in children is always likely to be self-report², this does not overcome issues related to the subjectivity of the assessment of pain by health professionals. Although recommended pain assessment tools (see Tables 1 and 2) have a core role to play in pain assessment, they were not developed to be used in isolation from careful clinical history taking, and Lundeberg³ rightly emphasizes the need for both clinical assessment and engagement with the child and/or their parents.

Table 1

Table 2

Optimal management requires good knowledge of pain assessment and management and a willingness to use knowledge and implement best practice. However, Lundeberg³ notes that the knowing-doing gap is common within paediatric pain management. Anaesthetists have a particularly pivotal role to play in pain management through liaison with patients and their families/carers, nurses, and other members of the peri-operative care team to ensure that pain is assessed and suitable ongoing analgesia is administered^{2, 5}. Yet, despite the key role played by anaesthetists in pain management, little is known of their knowledge, views or use of pain assessment tools. Most research work on pain assessment has focused on nurses as they are the professional group who undertake most assessments, although similar inconsistencies are identified across other professional groups⁴. No studies were identified that explicitly examined paediatric anaesthetists' knowledge of and use of pain assessment tools. This article sets out to address this gap in the literature.

Method

The e-survey, consisting of 25 questions, was developed to examine anaesthetists' views, confidence, knowledge, training and use of pain assessment tools with children following surgery. Three typical scenarios were outlined and respondents were asked how they would respond to each (see Table 3). Email-based, snowball sampling via the research teams' contacts and through established pain networks meant that the final version of the e-survey was sent to anaesthetists working in UK children's hospitals and to all members of the European Society of Pediatric Anaesthetists (ESPA).

Table 3

Ethics and Consent

Due to the nature of the survey, formal ethics approval was not required. Permission was received from ESPA. All those who were sent the survey were notified of the intended use of the data for a workshop at a paediatric anaesthesiology conference and of potential future publication, and that returning their completed questionnaires would be deemed that they were giving consent for their anonymised data to be used.

Results

A total of 185 respondents participated mostly working at a senior level. Eighty-six percent (n=159) were consultant paediatric anaesthetists, 11 (6%) were paediatric anaesthetists working in a non-consultant career grade and 15 (8%) were working as trainee paediatric anaesthetists. Eighty per cent (n=148) had more than five years' experience, 28 (15%) had 1-5 years' experience and 9 (5%) had less than 1 year of experience in paediatric settings.

Formal training and support

When asked about their experience of formal training and support all participants responded and more than half (60.5%, n=112) stated that they had received formal training on the assessment of children's pain. However, of those who had received training, fewer than half (n=48) had received training in the last three years. Sixty-three respondents identified ways in which their pain assessment skills could be enhanced and responses ranged from education (primarily formal training) through to experience (primarily, pain rounds and regular exposure to complex paediatric pain issues).

When asked who they would ask for advice if they were unsure about whether a child was in pain, 108 anaesthetists responded. Respondents could tick more than one response. The most frequent response was (n=88, 81%) 'ask a parent', followed by 81 (75%) responses stating 'ask a nurse', 63 (58%) responses selected 'ask the pain team' with only 32 (30%) responses selecting 'ask a more experienced/ senior anaesthetist'.

Use of formal pain assessment tools

Twenty-six respondents (14%) reported never using pain assessment tools. However, the majority of respondents (n= 155, 86%) reported using formal pain assessment tools in the management of children's pain; of these 54% (n=83) stated they used such tools 'infrequently' while the remaining 46% (n=72) stated that they used them with 'most patients'. A total of 20 different tools were reported as being used; some respondents reported using more than one tool. The most frequently reported tools were faces scales (59%) the visual analogue scale (VAS) (40%), and the FLACC (10%).

Child pain scenarios

The responses to the scenarios reflect the differences in the respondents' use of tools showing a general trend for tools to be most frequently used in the simpler assessment scenarios and less confidence in pain assessment in the more complex scenarios.

In Scenario 1 (see table 3), 99 (76%) of 131 respondents reported that they had used pain assessment tools with children like Ralph. When asked specifically about their proposed assessment of Ralph's pain, 121 responses were received and of these 34 (28%) respondents stated that they would talk to Ralph and 19 (16%) stated they would talk to his mother with only six (5%) stated they would talk to his nurse. A total of 71 (59%) respondents stated they would undertake an assessment using a self-report tool (e.g., VAS, NRS, a Faces scale). However, some did not think that tools were of value, e.g. "I would tend to assess cases like this clinically without use of pain scores/scales". Half of the respondents (n=61) described how they would take a pain history and/or undertake a clinical assessment taking into account the child's behavioural and physiological indicators

Eighty five respondents (71%, n=120 responses) reported that they had used pain assessment tools with children like Ahmet (Scenario 2). Of these 109 responded to the question asking them how they would assess Ahmet's pain: 24% (n=26) reported that they would use clinical assessment/examination and 32% reported they would use either FLACC (25% n=27) or KUSS (7% n=8). Eleven percent (n=12) proposed to focus on crying and tachycardia and 11% (n=12) reported excluding other causes of

distress in their assessment of Ahmet's pain. Some respondents reported they would gain input from parents (n=15, 14 %) and/or nurses (n=14, 13%).

Only 61% (n=68) of 111 respondents reported that they had used pain assessment tools to assess pain in children like Ruby (Scenario 3); of these 102 responded to the question asking them how they would assess Ruby's pain. The most frequent response was clinical assessment/examination/pain history with a focus on behavioural and physiological indicators (22%, n= 22). Twenty-three respondents (23%) reported they would use the FLACC or r-FLACC; other tools mentioned included the NCCPC (n=3); the COMFORT scale (n=3) and a VAS (by proxy) (n=4). Twenty-five respondents (25%) reported that they would discuss Ruby's pain with her mother, with several stating they would telephone her mother; and thirteen (13%) stated they would discuss it with a nurse.

Discussion

Anaesthetists appear to value the judgement of both parents and nurses in assessing a child's pain, as they reported that in cases of uncertainty about a child's pain, respondents most frequently stated they would 'ask the parent' (n=88) or 'ask a nurse' (n=81). Fewer responses suggested they would 'ask the pain team', possibly reflecting the fact that not every setting will have a pain team to provide advice. There were only 32 responses stating 'ask a more experienced/senior anaesthetist' possibly due to the fact that most of the respondents were senior and experienced consultants. It is worth noting that in each scenario it is likely that a nurse has called an anaesthetist to review the pharmacological pain management of a child who has been judged to be in pain. Thus when an anaesthetist is unsure about a child's pain the most knowledgeable available colleague will be the nurse who has asked him to assess the child. Anaesthetists have a pivotal role in the management of a child's postoperative pain and recognising a nurse's role in assessing a child's pain exemplifies good practice as suggested by Howard et al ² and ANZCA⁵.

Although the respondents had a good knowledge of pain tools and most reported using the tools, fewer than half used a pain assessment tool with 'most patients' and some respondents were dismissive of the value of pain tools preferring to rely on 'common sense' or 'clinical judgement'. This finding is similar to findings from other health professionals, including nurses, where pain knowledge, attitudes towards tools and other factors limit their consistent use in practice^{4,7,8,9}. The use and utility of pain assessment tools differed across the scenarios with a higher likelihood of respondents using an *appropriate* pain assessment tool with the verbal 10 year old (Scenario 1, 69%) than with the preverbal and nonverbal situations (Scenario 2, 32% and Scenario 3, 25%). This again would mirror findings from other studies which show that pain assessment tools are more likely to be utilised in

older verbal children than infants¹⁰ and that tools are used less frequently with cognitively impaired children¹¹. The respondents in this study were mostly highly experienced anaesthetists working at consultant level whose 'common sense' or 'clinical judgement' would be drawing on considerable clinical expertise. All of the scenarios presented a multi-faceted situation in which it would be expected that a range of clinical skills would be drawn on; the reliance on the use of pain assessment tools (that tends to focus in a reductionist way on pain intensity) would be inappropriate¹². There is a growing body of evidence that supports the use of clinical judgement in pain assessment^{13,14,15,16} as this facilitates, for example, the comparison of the child's self-report to a biologic measure such as heart rate¹⁶. It has been suggested that the very nature of pain intensity due to its many variant influences means there is no logical way to arrive at one true pain score¹⁷ and that pain assessment is a "clinical art"¹⁸.

Most respondents had received formal training on the assessment of children's pain and they were open to enhancing their current knowledge and skills, there was a clear sense of wanting to 'know and do'³, particularly in relation to more complex issues. In relation to anaesthetists' education on pain management, Overton and Smith⁶ report on consensus work that has examined priorities for the curriculum, including preferred methods of learning, engagement and assessment that could inform knowledge development for anaesthetists. It could be suggested that multidisciplinary education would enhance both practitioners' knowledge and their propensity to work together to manage children's pain.

Limitations

The respondents tended to be both experienced and senior and therefore not necessarily representative of more junior colleagues. The study, to a large degree, also focused on responses to scenarios rather than actual patients and this creates a challenge for respondents to imagine how they would respond. The findings also present what the anaesthetists reported they did, or would do, rather than what they actually do in practice, so the picture painted may be somewhat ideal.

Conclusion

Most anaesthetists had received some formal training in pain assessment. However, it was apparent that this training was often opportunistic, fragmented and much training had occurred experientially. However, perhaps because much of the training had occurred experientially (in practice), the respondents expressed confidence about assessing children's pain and reported using the range of validated pain assessment tools used within their own clinical settings. Despite this confidence, when

uncertain about assessing a child's pain the majority of anaesthetists stated they would refer to nurses for their judgement demonstrating good practice in pain management.

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Table 1: Recommended pain assessment tools for acute procedural and postoperative pain assessment based on the child’s chronological age (assuming that the child has normal cognitive development)²

Child’s age	Measure
Newborn–3 years	COMFORT or Face Legs Arms Cry Consolability Scale (FLACC)
4 years old	Faces Pain Scale-Revised (FPS-R), COMFORT or FLACC
5–7 years old	FPS-R
7 years old	Visual analogue scale, Numerical rating scale or FPS-R

Table 2: Recommended pain assessment tools for children with cognitive impairment²

Child’s age	Measure
For acute procedural/disease related pain assessment	
1-18 years	The Paediatric Pain Profile (PPP)
3-18 years	Non-Communicating Children’s Pain Checklist (NCCPC-R)
For post operative pain	
1-18 years	PPP
3-19 years	NCCPC-PV (Non-Communicating Children’s Pain Checklist – Postoperative Version)

Table 3. The three scenarios used in survey

4-19 years	Revised FLACC
Scenario 1: Ralph	Ralph, aged 10 years, presented with a perforated appendix and is now 6 hours post-operative. Despite having morphine via PCA (Patient Controlled Analgesia) he is unsettled and whimpering. He says he has pressed his pain medicine button but it is not helping. His mother is worried.
Scenario 2: Ahmet	You have been called to see Ahmet, aged 9 months, who is now 24 hours post closure of ileostomy. Ahmet is crying and is tachycardic. Despite having morphine via NCA (Nurse Controlled Analgesia) the most recent boluses do not seem to have settled him. How would you assess Ahmet to determine if he was in pain, and if so, how severe his pain is?
Scenario 3: Ruby	Ruby is aged 8 years has complex health care needs. She is profoundly cognitively impaired and unable to communicate verbally. She is now 48 hours post orthopaedic surgery. Despite having been given your standard epidural analgesia (+/- additives) she appears distressed and she did not sleep last night. Her mother

	has had to go home and the ward staff think that Ruby is in pain and have asked for your opinion.
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