Original Article

Pediatric pain management: More opportunities for better comfort

Ayman A Aleyadhy (1,2), Mohamed-Hani Temsah (1,2), Ali N Alhaboob (1,2), Gamal M Hasan (1), Amir Babiker (2)

(1) Pediatric Intensive Care Unit, King Saud University Medical City, Riyadh, Saudi Arabia
(2) Department of Pediatrics, College of Medicine, King Saud University, Riyadh, Saudi Arabia

ABSTRACT
Pediatric pain assessment is vital for optimal pediatric practice. After a year of implementation of pediatric pain assessment tools at a tertiary university hospital (King Saud University Medical City, Riyadh, Saudi Arabia), the physicians in the Department of Pediatrics were invited to participate in an interactive lecture about pediatric pain management to assess their awareness about using these tools. Their responses demonstrated that almost half of them were not using any pain scale in their daily practice. These findings highlight the need for a new strategy of implementation. The improvement of pain assessment and management necessitates extensive educational campaign for all health care providers and early audit in order to improve the physicians’ awareness and compliance with these changes.

Keywords: Pain; Assessment; Children; Awareness; Interactive; Score.

Correspondence to:
Dr Mohamad-Hani Temsah,
Consultant, Pediatric Intensivist,
Assistant Professor of Pediatrics,
King Khalid University Hospital,
King Saud University, Riyadh, Saudi Arabia
Tel: +966114692002
Email: mtemsa@ksu.edu.sa

How to cite this article:
INTRODUCTION
Effective pain management is increasingly and widely recognized as an important component of standard health care practice [1,2]. Despite the significant effort to improve pain management in pediatric practice, it remains undertreated [1,3]. In early 2011, pain assessment guideline for children admitted at King Khalid University Hospital, Riyadh, Saudi Arabia, was formally adopted. As part of the associated educational campaign to facilitate the implementation of this guideline, an interactive lecture was conducted for the staff in the Pediatric department. The main objectives of this lecture were to enhance the awareness of pain management for children and to encourage adapting and using pain management guidelines including a multidisciplinary team approach. Simultaneously, to explore the attending physician’s knowledge, attitude and intended practice in response to several clinical scenarios related to different paediatric age group.

METHODS
This is a descriptive hospital based study, which used a qualitative approach in a form of a survey design. The guided (Multiple Choice) survey was incorporated into the slides of an interactive lecture titled: “Pediatric Pain Management: The Facts and Misconceptions?” The Authors conducted the survey in a Pediatric Grand Round at the end of the year 2011. The audience consisted mainly of Pediatric Department physicians at various levels of experience ranging from junior trainees to experienced consultants. Their responses were collected live using an Interactive Response System.

Following the introduction of a pediatric pain assessment tool and the recently adapted Modified Wong Baker Scale at our institute (Figure 1), the audiences were prompted by several clinical scenarios, and were asked to approximate what the Modified Wong Baker Faces Scale in each case could be.

RESULTS
The audiences who participated in this activity were 28, who were distributed as follows: Pediatric Consultants (n=11/28, 39.3%), Senior Registrars (n=3/28, 10.7%), Registrars (n=3/28, 10.7%), Residents (n=9/28, 32.1%) and Pediatric Nurses (n=2/28, 7.1%). The participants were asked about how frequently they use the recommended score in managing pain and discomfort in their patients (Table 1).
Table 1 – The participants’ responses on how frequently they use the standard tool

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost on daily basis</td>
<td>14.8</td>
</tr>
<tr>
<td>3-5 times per week</td>
<td>3.7</td>
</tr>
<tr>
<td>1-2 times per week</td>
<td>18.5</td>
</tr>
<tr>
<td>I use other Pain Scale</td>
<td>7.4</td>
</tr>
<tr>
<td>I do not use any Pain Scale, rather I asses by other measures</td>
<td>55.6</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

The voting results, using live IRS, about different theoretical case scenarios have widely varied. The pain assessment included what the Modified Wong Baker Faces Scale in each case would be (Table 2).

Table 2 - Audience assessment for Modified Wong Baker Faces Scale

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Audience assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumber Puncture in a 5 year old child</td>
<td>0% 0% 7.1% 43.9% 46.4% 3.6%</td>
</tr>
<tr>
<td>Peripheral intravenous Insertion in a 3 year-old child</td>
<td>0% 3.6% 17.9% 57.1% 14.3% 7.1%</td>
</tr>
<tr>
<td>Circumcision in a 2-day-old boy</td>
<td>0% 3.6% 3.6% 17.9% 35.7% 39.3%</td>
</tr>
<tr>
<td>Vaso-occlusive Crisis in a 7-year-old child with sickle cell disease</td>
<td>0% 0% 3.7% 7.4% 51.9% 37.0%</td>
</tr>
<tr>
<td>A 6-year-old child screaming in pain post scoliosis surgery</td>
<td>0% 3.6% 0% 0% 25.0% 71.4</td>
</tr>
<tr>
<td>A 3-year-old child, with metastatic Wilms tumor, crying from pain</td>
<td>0% 3.7% 0% 3.7% 22.2% 70.4%</td>
</tr>
<tr>
<td>Vaccination in a 3-year-old child</td>
<td>0% 10.7% 21.4% 53.6% 14.3% 0%</td>
</tr>
</tbody>
</table>

DISCUSSION

Understanding the importance of pain management and utilizing an instrument to measure its severity are extremely important for the managing physician, particularly in acute care setting. As a matter of fact, it is a prerequisite prior to perform any procedures in order to predict and thus, prevent painful experience by a child. Despite having pain assessment and management guideline being introduced for almost a year at our hospital, which was accompanied initially by educational and awareness campaign, there were still major areas of gaps in awareness and implementation, which requires further development, particularly among physicians. More than half of our paediatric practitioners still voted as they “do not use any Pain Scale”, rather they “asses by other measures”, and only 14.8% voted as using the Pain Scale on daily basis. Moutte et al [4] reported a decreasing trend, when caring for younger children, in percentage of physicians who used pain scale in their practice in emergency setting. Furthermore, only 3% of them use pain scale in children less than 3 years [4]. In order to optimize the pain management approach, it should be integrated in a multidisciplinary team where nurses...
are important partners. Thus, they should be targeted in education and awareness campaigns. Ortiz et al [5] reported a significant area of improvement in nurse’s practice regarding pain management in children. The study by Vael and Whitted [6] demonstrated that educating nurses about the use of pain assessment scale altered their practice and improved the frequency of pain assessment of preverbal children.

Optimizing pain control in pediatric population is a real challenge. Not only due inability of communicating the pain experience, but also due to different perception of pain severity by the caregiver. Another finding, in our study, was the wide discrepancies between the audience’s voting for the pain scores in various case scenarios, which they were prompted with. Although they all agreed that these scenarios would be associated with pain, the pain scores ranged from mild to severe for the peripheral intravenous Insertion in a 3-year-old child, circumcision in a 2-day-old boy, a 6-year-old screaming in pain post scoliosis surgery, and a 3-year-old child with metastatic Wilm’s tumour, crying from pain. However, the pain assessment in these scenarios by majority of the audience ranged from moderate to severe. It is likely that this variation is due to variable perception rather than under reliability of the pain measurement tool. The reliability and validity of a pain measuring instrument has been a focus of many researchers and scientific initiatives [7-9]. The self-reporting faces scales are well recognized and validated instrument for clinical use in children [10].

An interesting, yet somehow a challenging finding, was that the vaccination associated pain was given quite a variable score by audiences as either mild discomfort (10.7%), mild pain (21.4%), moderate pain (53.6%) or severe pain (14.3%). This could reflect different experiences among the surveyed practitioners or their different perceptions of pain in this category. However, it may highlight the need for further studies and exploration of this area. Several studies have demonstrated various methods in reducing pain and anxiety in such setting, and these have to be emphasized for the Health Care Workers providing these vaccination tasks [11-15]. For instance, a prospective study by Abuelkeir et al [16] demonstrated that application of EMLA® cream can be effectively incorporated as a routine pain-relieving intervention within routine vaccination schedules. McMurry et al [17] described several available strategies to mitigate pain associated with vaccine injections. Taddio et al [18] found some evidence for a benefit for using the following procedures and physical interventions during vaccine injections in selected populations: no aspiration, injecting most painful vaccine last, simultaneous injections, vastus lateralis injection, positioning interventions, non-nutritive sucking, external vibrating device with cold, and muscle tension. However, such strategies are uncommonly utilized, leading to unnecessary pain and suffering. Some children may develop a high level of fear and their needle procedures become unnecessarily associated with significant distress [17].

CONCLUSION

With the introduction of “new process improvements” strategies in our institute, such as pain assessment and management guidelines, an urgent need has emerged for a simultaneous extensive educational campaign for all health care providers. Also, it indicates the need of early auditing to facilitate better awareness and compliance with these changes. Since our results showed suboptimal awareness and compliance with the hospital pain assessment and management guidelines, a focused team was formed and a plan was adopted to improve the implementation of the guidelines.
REFERENCES


16. Abuelkheir M, Alsourani D, Al-Eyadhy A, Temsah MH, Meo SA, Alzamil F. EMLA(R) cream: a pain-
