

Review Article

Challenges and ways for pain assessment of children in the primary health care

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ABSTRACT

Pain assessment and management have shown great advances in recent decades regarding the treatment protocols and the various assessment approaches that have been developed and validated to specific for pediatric patients. In this literature review, we aim to shed more light on the assessment of pain in pediatric patients and the challenges that healthcare workers might face during the process in primary healthcare centers. In neonates, the crying, require O₂ to reach a saturations more than 95%, increasing vitals, expressionless, and sleepless score shows the greatest advantage over other scores (COMFORT and distress for mechanically ventilated neonates), while in infants the face, leg, activity, cancelability, and cry scale shows promising results. In older children, self-reporting by the visual analogue scale should be standardized whenever possible or facial, and behavioral assessment should be used. Assessment of pain in patients with cognitive and intellectual disabilities might be challenging, and therefore, it should be interpreted carefully not to be misdiagnosed, in addition to trying to obtain relevant information from a well-trained accompanying caregiver. Further investigations are needed, however, to standardize these scores and to spread awareness among clinicians and caregivers about the importance of appropriate pain assessment.

Keywords: Pain, Scale, Challenge, Pediatric, Children

INTRODUCTION

Pain is defined as the presence of an annoying emotional and sensory feeling that is usually attributable to existing

tissue damage according to the International association for the study of pain. Previous studies also referred to pain as the presence of a feeling that has been previously identified by a similar experience, irrespective of what the patient might say he feels which may be biased.¹⁻³ Pain is

one of the most annoying and devastating conditions when associated with chronic disorders as when associated with terminal stages of cancer. Evidence shows that pediatric patients are more prone to pain and hospital admission more than adults which may be attributable to wrong beliefs about what children experience, thinking that will not remember it, or just faking the feeling for attention which might make the feeling even worse.⁴

Pain can hugely affect the affected patients' quality of life, and therefore, if the assessment has been delayed, unfavourable events regarding the social and intellectual daily function of the individuals may subject them to further complications and hospital admissions.⁴ In pediatric patients, assessment of pain is done through different aspects including the behavioral, emotional, and cognitive pictures which are essential for a proper diagnosis and management.^{5,6} Evidence shows that leaving pain untreated for a long time might impact the patient's pain sensitivity, neurophysiology, immune system, everyday attitude, in addition to his career and personal health and life. Such effects are serious on pediatric patients, and therefore, efforts are being introduced for the management and early intervention of such conditions.⁶⁻⁸

Pain assessment and management have shown great advances in recent decades regarding the treatment protocols and the various assessment approaches that have been developed and validated to specific for pediatric patients. Studies show that most primary health care centres are now specifying special sections for pain assessment and management in children.^{9,10} It is difficult, however, to assess the pain despite all the feasibilities which are attributable to many factors as children might not be able to identify and recognize the pain, in addition to other religious and cultural myths which may affect the recognition and immediate referral of the child by his caregivers.¹¹ In this literature review, we aim to shed more light on the assessment of pain in pediatric patients and the challenges that healthcare workers might face during the process in primary healthcare centres.

An extensive literature search of the Medline, Cochrane, and EMBASE databases was performed on 15 December 2020 using the medical subject headings (MeSH) or a combination of all possible related terms. Studies discussing the assessment of pain in pediatric patients were screened for relevant information. No limits were posed on date, language, or publication type.

CHALLENGES OF PAIN ASSESSMENT IN CHILDREN

It is well-known that pain assessment in children might be more challenging than adults because children are not usually co-operative, in addition to the fact that many children do not usually understand how to describe their pain in a medical way. Moreover, many pediatric patients

can be found to have many intellectual and developmental disabilities which make them more prone to more traumas and injuries that usually lead to the development of conditions with acute or chronic feelings of pain.^{12,13} Despite being the most commonly used method for pain assessment in an average well-being adult, the efficacy of self-reporting in children might be controversial because such children are not able to describe what they feel in their own words. Therefore, it has been decided that the assessment of pain using charts and colored pictures is better than using the patient's own words.^{14,15} However, some limitations have also been associated with this approach which is hugely dependant on the condition and intellectual ability of the child together with being able to express and describe what he sees on such charts and scales.^{16,17} Self-reporting, however, would be the best way for pain assessment and should always be considered in addition to other approaches as the psychological and behavioral signs, and information from the child's caregiver. Limited communication with children, especially those with intellectual disabilities, would further make the psychological assessments as using the quantitative sensory testing of limited use in assessing the tolerance and sensitivity of pain.¹⁸ Approaches have been made to modify this scale and make it more feasible for children that present with developmental delays depending on many factors as deep pressure and light touch. Although it can be used to identify the presence of pain, it is hard to classify the degree and severity of it.^{19,20}

In addition to these concerns, children might have difficulties in expressing feelings like depression, distress, and anxiety because of being overlapped with the manifestations even when expressing them to a familiar person.²¹ Studies showed that these feelings should be differentiated and children should be taught how to express and discriminate between these different manifestations.²² Another concern is that acute pain on top of a chronic condition might be overlapped and shadowed by this condition; therefore, such children should possess personal profiles that are unique to their condition in order not to misdiagnose a newly emerging condition that can mimic the pre-existing one. Depending on facial and behavioral expressions might be the most accurate way of assessing pain in children as such expressions are usually consistent and occur in all people.²³⁻²⁵ However, these expressions might be masked by a pre-existing condition affecting the cognitive abilities of the children which might be attributable to a disorder affecting the central nervous system, the child's environment and culture, and the way of treatment and response that he is used to with his caregiver.²⁶ It should also be noted that children with behavioral and developmental disabilities might present with events causing traumas, facial changes, and bizarre behavior as moaning which may be mistakenly included in the assessment of pain making it difficult to diagnose the signs of an existing condition.²³ Caregivers might also overestimate or underestimate the signs of pain that

children might present with based on previous beliefs or recommendations from non-educated personnel.^{27,28} Facial and body expressions and responses and vocalization might be the most commonly used way that caregivers use to assess the pain in children, especially when the child has an intellectual or poor response.²³ The most frequently noticed signs of children include moaning, irritability, being not co-operative, developing furrowed eyebrows, trying to attract attention and comfort, and having difficulties in pacifying or distracting.²⁹ It is worth noting that assessment of pain is case sensitive and some cases may present with novel signs other than any previously published clinical signs which make it difficult to unify the previously approached scales and make unified protocols for pain assessment and management. Therefore, it is important to unify efforts to establish a rightful technique that is established in an evidence-based manner with symptoms and signs specific to the painful situations to reach a proper diagnosis.^{30,31} Additionally, observations and descriptions from caregivers of the children's clinical picture might be subjected to bias and challenges, particularly when the child is not able to deliver what he feels in his own words. This may lead to a misunderstanding of the condition by the attending physicians, and consequently, might delay the diagnosis of the condition and even complicate it. Therefore, investigations about the importance of using multiple ways for pain assessment in children should be appreciated. Besides, special education for caregivers should be offered for better assessment of the pain and delivering the information of the relevant physicians for accurate diagnosis and better management.³² In addition to the many challenges in assessment, there are also various challenges and difficulties in the management and research regarding pain during childhood. Many concerns regarding this field investigation as the potential presence of biased information, the presence of inadequate sample size, and proper study designs, in addition to exploring the potential mechanisms for proper identification and diagnosis of the pain and eliminating its origin.¹¹ Therefore, much effort should be directed in this field for further advancements.

METHODS FOR ASSESSMENT OF PAIN IN CHILDREN

Some clinicians refer to pain as being a fifth vital sign and suggest that it should be treated and regularly checked for as these signs. To properly intervene against pain and its complications, proper assessment and evaluations should be done. Routine check-ups for pain are the most essential and efficacious ways for the assessment and management of pain using the regular and standardized approaches, regardless of the age of the child or other parameters.^{4,33} Dantas et al conducted a study on a Brazilian cohort that was sedated and/or mechanically ventilated for pain assessment.³⁴ The authors reported that the regular use of standard ordinary parameters as legs, face, activity, crying, controllability,

in addition to other body parameters should be optimized for pain assessment in the pediatric intensive care unit. Self-reporting, however, is still the most appropriate and efficacious scale for pain assessment which is because pain is a personal experience.^{4,34} As some children cannot describe the pain in their own words and cannot communicate, it is acceptable that other observational and behavioral scales can be applied for pain assessment in these children as mentioned before. A study in the Stollery children's hospital showed that the application of the algorithm of pain management protocols on their patients was significantly associated with improved assessment rates of children in their hospital.⁴ The authors also showed that the staff (n=17) opinions about the analysis showed that 41.2% of them were satisfied with such algorithm and said that it helped them with the assessing pain in children with equality. In the same context, 35% of the questionnaire staff members reported that this process increased the child's ability to communicate and express what he feels in a better way for the handling physician, while 52.9% suggested that the same algorithm should be applied in other departments within the same hospital. The assessment of pain in adult patients is not as complicated as it is with children, and therefore, appropriate approaches should be considered for age, cognitive and intellectual ability of the child, and severity of pain that the child may present with, which can be achieved by properly training the relevant physicians.^{4,35,36} In a Canadian university hospitals study, the authors showed that in around 63% of their included children, the pain was assessed using one assessment tool, in 30% of them by at least two tools while the rest of the children had more than 3 and up to six or more assessment tools.³⁷

For assessing pain in neonates, previous studies showed that the crying, require O₂ to reach a saturations more than 95%, increasing vitals, expressionless, and sleepless (CRIES) scale which stands for crying, require O₂ to reach saturations more than 95%, increasing vitals, expressionless, and sleepless, has been widely used in many guidelines and previous investigations.^{2,4,10,38,39} Other pain scales include the COMFORT or behavior score, pain scale for application in the newborns, pain assessment tool, and the distress scale for ventilated neonates.^{4,40} Other assessment tools have also been developed for the assessment of pain in infants. Some of these include the face, leg, activity, cancelability, and cry (FLACC) scale which stands for face, leg, activity, cancelability, and cry, and have been validated by an Australian study that used this approach on 30 infants in the post anesthetics care unit.⁴¹⁻⁴³ It has been estimated that this scale has a sensitivity rate of 98% and a specificity rate of 88%.⁴² Moreover, previous investigations indicated that this new approach should be used in future investigations as it possesses similar standards to other infantile, objective pain scale and the score of the post anesthetics care unit nurse's global pain rating.^{4,41-43} In older children, the situation is different, as these patients are usually able to describe their pain in

their own words, and therefore, self-reporting is considered the most reliable approach in this case.⁹ The visual analogue scale (VAS) has been widely used by previous investigations and is recommended for physicians to use for assessment of pain in these children.^{4,38} However, as mentioned before, such approaches can only be useful in patients with intact cognitive and intellectual abilities. The face scale approach has also been widely used and reported by previous investigations and can be used where the VAS score or self-reporting could not be validated.^{1,11,16}

CONCLUSION

Although many tools have been proposed for pain assessment in recent decades, no specific tools or protocols have been always used as a standard approach for pain assessment in children. There are many factors to be considered. These include age, intellectual ability, and the degree to obtain information from the patient and the caregiver. In neonates, the CRIES score shows the greatest advantage over other scores, while in infants the FLACC scale shows promising results. In older children, self-reporting by the VAS should be standardized whenever possible or facial, and behavioral assessment should be used. We recommend that further investigations should be directed to unifying the pain scores and training clinicians on how to deal with them and also to educate caregivers about the appropriate delivery of information.

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