Croat Nurs J. 2023; 7(1): 87-96

Pain Assessment in Pediatric Patients – A Literature Review

[1] **Helena Mayerhoffer***

[1,2,3] **Adriano Friganović**

[1] **University of Applied Health Sciences, Zagreb, Croatia**

[2] **University Hospital Centre Zagreb, Department of Anesthesiology, Reanimatology, Intensive Medicine and Pain Treatment, Zagreb, Croatia**

[3] **Department of nursing, Faculty of Health Studies, University of Rijeka**

* **Undergraduate nursing student at University of Applied Health Sciences, Zagreb, Croatia**

Article received: 16.04.2023.

Article accepted: 16.05.2023.

Author for correspondence:

Adriano Friganović

Department of Anesthesiology and Intensive Medicine, University Hospital Centre Zagreb, Kišpatićeva 12, Zagreb, Croatia

E-mail: adriano@hdmsarist.hr

https://doi.org/10.24141/2/7/1/7

Keywords: pain assessment, pediatrics, pain scale

Abstract

Introduction. Pain is an unpleasant sensory and emotional experience caused by existing or possible tissue damage. Pediatric patients are a sensitive group whose experience of pain is influenced by various other factors, so the assessment and treatment of pain itself is of a different nature than adults. Correct assessment of pain enables adequate treatment and alleviation of complaints.

Aim. The aim of the paper was to perform a systematic review of the literature related to the assessment of pain in pediatric patients and to gather available knowledge on the reliability and validity of certain pain assessment methods in one place.

Methods. The PubMed database was searched with the aim of finding studies indicating the reliability and validity of the Wong-Baker, VAS, COMFORT and FLACC scales. Included papers are systematic reviews, review articles and research papers published in the period from 2000 to 2020. Languages that were acceptable for the inclusion were English and Croatian. Keywords used for searching the database were pain assessment, pediatrics and pain scales.

Results. According to the inclusion criteria for this paper, 9 studies were used in which pediatric patients from birth to 18 years of age were included. The guidelines indicate the clinical reliability of the listed scales with guidance on which scales are better to use in which cases. Pain assessment scales have been proven by research to be a good indicator of pain in children, whether self-reported with the VAS or Wong-Baker scale or assessed by a medical professional with the FLACC, COMFORT or EVENDOL scale.

Conclusion. Researches recommend the VAS scale for older children, while the Wong-Baker scale is suitable for children up to 7 years old. The COMFORT scale has been clinically validated, the FLACC scale is both valid and reliable, particularly for children up to 7 years old. The EVENDOL scale is recommended in emergency cases involving children up to 8 years old.

Introduction

Pain is a subjective feeling of the patient which is associated with actual or threatened tissue damage. Since pain is not a measurable parameter, the medical staff must believe the patient whenever they say they are in pain, document it and treat it properly (1). Pain is influenced by various factors such as age, fatigue, fear, neurological function and method of treatment. It should be taken into account that pediatric patients may experience stronger pain during routine care due to fear, misunderstanding of the reasons behind certain procedures and lack of adaptation to a new routine (2). In order to be able to achieve adequate treatment of pain, first of all, it is necessary to assess it in the right way. The assessment of pain in pediatric patients includes a set of skills by the nurse that will help her to obtain information about the intensity and location of pain. This assessment depends on the child's age and level of understanding (3). The literature states that children do not understand pain until their first year of life (in the so-called sensorimotor period), but they certainly experience it and remember these experiences. At that age, it is important that the child receives optimal pain management in order to prevent negative responses to painful stimuli in the future. After the second year of life, the child's understanding of pain develops. From age 2 to 7, children do not understand the causes and consequences of pain, they think that pain is a form of punishment and perceive pain as a physical experience that can suddenly disappear. From age 7 to 12, children can already specify the location of pain, they have an increased awareness of their body and understand causes and consequences of pain. During puberty, children understand the importance of pain management and value privacy, honesty and like to feel in control. It is important to take these parameters into account during the assessment so that medical professionals can approach the patient in an appropriate way and collect information about the pain as best as possible (3). When the child is able to self-assess pain, the Visual Analogue Scale (VAS) or the Wong-Baker Face Scale is used. If the child is younger, does not understand the mentioned scales or is unable to state the amount of pain they feel, scales are used by which medical professionals can conclude the child's pain. Two scales that are often used when working with pediatric patients are the COMFORT and the FLACC scale. The COMFORT scale consists of 8 indicators: alertness, calmness, respiratory response, movements, blood pressure, pulse, muscle tone and facial muscle tension. Each indicator is scored with points from 1 to 5, and the scale is most often used in intensive care units due to the need for measuring blood pressure and pulse (4). The "*Face, Legs, Activity, Cry and Consolability",* or the so-called FLACC scale, consists of 5 items: facial expressions, position of the legs and leg tension, activity, crying and level of calmness. These items are scored from 0 to 2 and the highest overall score is 10. The scale was originally intended to measure postoperative pain in pediatric patients (5). Along with the use of these scales, the need arose in the pediatric emergency department for a scale that can be used in emergency cases, which will be easy to understand, and which will define the level of pain, facilitate the prescription of analgesics and enable evaluation after administering analgesia. For this purpose, scientists have developed the newer EVENDOL scale. This scale is based on scoring at 4 levels. Items that are scored are: verbal expression of pain, facial expressions, movements, posture and interaction with the environment. The highest overall score can be 15 (6).

Aim

The aim of this study is to gather knowledge about ways to assess pain in pediatric patients by reviewing the available literature, to conclude which scale

is better to use in certain cases and to discover the advantages and disadvantages of certain scales.

Methods

During the process of searching the biomedical database PubMed, studies that were found and included in this literature review were studies describing the reliability and validity of the Wong-Baker, VAS, COMFORT, FLACC and EVENDOL scale.

The articles were selected according to the inclusion criteria: the article had to fall under the categories of a systematic review, review article or original research paper. The keywords used were pain assessment, pediatrics, and pain scales. The publication years had to be between 2000 and 2020, and the articles had to be published in Croatian or English. Participants that were chosen were from the Intensive care unit, Pediatric department, Maternity hospital and the Emergency department. The participants included were male and female from age 0-18 years old (Table 1).

The exclusion criteria were: letters and editorials, keywords unrelated to the topic, articles published prior to 2000, articles in languages other than Croatian or English, other departments and participants over 18 years old (Table 1).

Table 1. **Inclusion and exclusion criteria**

	Inclusion criteria	Exclusion criteria
Type/category of the article	Systematic review Review article Original research paper	Letters Editorials
Content (keywords)	Pain assessment Pediatrics Pain scales	Other
Publication date	2000-2020	Articles published before 2000
Language	Croatian, English	Other
Sample location	Intensive care unit Pediatric department Maternity hospital Emergency department	Other
Participants age	0-18 years old	>18 years old
Participants sex	Male, female	/

Results

The review included 11 significant studies that met the inclusion criteria (Table 1). Pediatric patients aged from 0 to 18 years were included in the research. The research was conducted in pediatric intensive care units preoperative, postoperative, in the burn clinic, the maternity hospital and the emergency department.

Garra G. et al. investigated 120 pediatric patients aged 10-15 years to reveal the correlation between the VAS and the Wong-Baker scale. First, the researchers explained the Wong-Baker scale to the patients, then they recorded the answers, and after that they repeated the procedure with the VAS scale. After implementing both scales on all patients, they collected the data and set the mean values of the VAS scale results under each face of the Wong-Baker scale. It has been proven that the VAS has an excellent correlation in older children with acute pain, while the Wong-Baker scale is better in younger children. There are many factors that influence the accuracy of pain assessment using the VAS scale in pediatric patients. The barriers are that children do not have an idea what "the greatest possible pain" means, they often cannot understand the scale itself and can confuse pain with fear (7).

A study conducted in two African hospitals by Bosenberg A. et al. aimed to evaluate the validity of the

Wong-Baker scale as a method of postoperative pain assessment. The study included 110 children aged 4-12 who were scheduled for surgery. There were two assessments, one where children assessed their pain using the Wong-Baker scale and the second where experienced nurses assessed the level of pain of the same children by observing them. The assessment was performed every hour during the 8-hour postoperative period. The correlation between the results obtained through the Wong-Baker scale and the observation is significant. The most similar results are for children aged 6 and 7, and the most different for children aged 8-12. This research confirms the previous one where it was proven that the Wong-Baker scale is better for use in younger children (8).

Pediatric Units in the Netherlands wanted to find out whether the observational VAS has the same value as the self-assessment VAS scale. The validity of the observational VAS is questionable. Research shows that scores between the two scales are different for postoperative pain and chronic pain. In assessing postoperative pain, medical professionals and parents underestimated the children's pain, while with chronic pain, they overestimated the pain and gave a higher score than the one given by the child (9).

A study conducted In Rotterdam aimed to test the reliability and validity of the COMFORT scale as a way of assessing postoperative pain. They had a sample of 158 children aged from birth to 3 years who were admitted to the hospital for surgery in the thoracic or abdominal region. Pain was measured with the COMFORT and VAS scale before surgery and during 36 hours after surgery with a total of 13 measurements. The results support the use of the COMFORT scale as a way of assessing postoperative pain in newborns and children up to 3 years of age. The limitation of this research is that both scales were administered by the same nurse for practical reasons, so it is questionable whether the results would have been different if the scales had been administered by different nurses (10).

The European Journal of Pain published a systematic review of available research related to the clinical significance of the COMFORT scale in pediatric patients. The review included 30 studies that met the criteria, 20 of which were conducted in the pediatric intensive care unit, and the other 10 in the operating room, the burn clinic, and the maternity ward. Research has shown that the COMFORT scale is reliable for assessing sedation and pain, with validity evidence ranging from moderate to excellent for sedation and weak to excellent for pain. This systematic review of available research has proven the clinical relevance of the COMFORT scale, but more research is needed to confirm how useful this scale is for pain assessment (11).

Nilsson S. et al. conducted research in a Swedish hospital with a sample of 80 children aged from 5 to 16 years. The aim was to find out the reliability and validity of the FLACC scale as a way of assessing pain during the insertion of a peripheral venous cannula and an internal central venous catheter. The results of medical professionals who assessed pain using the FLACC scale were compared with the results of children who assessed their pain using the CAS (Coloured Analogue Scale) and the FAS scale (Facial Affective Scale) before, during and 5 minutes after the procedure. The research proved the reliability and validity of the FLACC scale as a way of assessing pain in the mentioned procedures (12).

Shen J, Giles S.A. et al. selected 24 nurses working in a Pediatric Burn Center to determine the reliability of the FLACC scale in burn patients and the influence of the length of nurse service on scoring accuracy. Nurses were shown 4 videos of pediatric burn patients with burns that varied from moderate to severe pain 3 times in different orders and on different days. The nurses then rated the pain using the FLACC scale. The results showed that nurses have a hard time distinguishing between moderate and severe pain, and that nurses with less than 5 years of work experience have a higher accuracy in evaluation using the FLACC scale. It is believed that this is due to the desensitization of more experienced nurses caused by stress and emotionally demanding work (13).

Lempinen H. et al. conducted a study with the aim of verifying the feasibility and clinical utility of the FLACC scale in pediatric intensive care unit patients. They worked on 157 cases of children, whose pain was measured by 50 nurses. Pain assessment was carried out in children at rest, postoperatively, during routine care and during short-term painful procedures. After each assessment, the nurse had to answer a questionnaire about the feasibility and usefulness of the FLACC scale. In most cases, nurses agreed that the structure of the scale itself is clear (97%), it is technically easy to use (98%) and does not take too much time (87%). Also, they came to the conclusion that the FLACC scale is the best for chil-

Table 2. **Overview of researches included in the paper**

Research	Aim	Subjects	Scale	Results
Garra G. et al, 2009 (7)	To investigate the correlation between the Wong-Baker and the VAS scale	Children aged 8-17 years N=120	WONG-BAKER SCALE VAS	The Wong-Baker scale is better in younger children. VAS is better in older children.
Bosenberg A. et al, 2003 (8)	To investigate the validity of the Wong-Baker scale	Children aged 4-12 years N=110	WONG-BAKER SCALE	The Wong-Baker scale is a valid scale for assessing pain in children, better to use in younger children.
Van Dijk M. et al, 2002 (9)	To investigate the validity of the observational VAS scale in relation to the subjective VAS	Children aged 0-18 years N=884	VAS (observational) and VAS (subjective assessment)	The validity of the observational VAS is questionable.
Van Dijk M. et al, 2000 (10)	To investigate the validity and reliability of the COMFORT scale as a postoperative pain assessment method	Children aged 0-3 years N=158	COMFORT SCALE VAS (for comparison)	The COMFORT scale is a valid and reliable way of assessing pain in newborns and children up to 3 years of age.
Maaskant J. et al, 2016 (11)	To investigate the clinical significance of the COMFORT scale as a way to measure sedation and pain	Children aged 0-18 years 30 research papers	COMFORT SCALE	The COMFORT scale is a reliable way to assess sedation, evidence is mixed for pain assessment – more research is needed.
Nilsson S. et al, 2008 (12)	To investigate the validity and reliability of the FLACC scale during procedures	Children aged 5-16 years N=80	FLACC SCALE	The FLACC scale is a valid and reliable way to assess pain during procedures.
Shen J. et al, 2017 (13)	To investigate the reliability of the FLACC scale in patients with burns and the dependence of the employee's work experience on the accuracy of the assessment	Pediatric nurses N=24	FLACC SCALE	It is difficult to distinguish between moderate and severe pain. Nurses with less work experience have more accurate results.
Lempinen H. et al, 2020 (14)	To investigate the feasibility and clinical utility of the FLACC scale in a pediatric intensive care unit	Children aged 0-16 years N=157	FLACC SCALE	The structure of the scale is clear, easy to use and does not take too much time. The greatest clinical utility is in children aged 1-7 years.

Research	Aim	Subjects	Scale	Results
Kochman A. et al, 2017 (15)	1. Investigate the reliability of the results with different respondents 2. Investigate the change in results when applying analgesia	Children aged 6 months-5 years N=101	FLACC SCALE	The scale is reliable regardless of which examiner administers it. The scale is an effective way of checking pain during the application of analgesia in children.
Fournier-Charrière E. et al, 2012 (16)	To investigate the validity and feasibility of the EVENDOL scale for use in pediatric emergency medicine units	Children aged 0-7 years N=291	EVENDOL SCALE	A valid way to assess pain in pediatric patients in the emergency department (proven in comparison with other scales and evaluation after analgesic administration). Simple to fill out and feasible in the accelerated work of the emergency department staff.
Beltramini A. et al, 2019 (17)	To investigate the validity and feasibility of the EVENDOL scale for use in outpatient emergencies	Children up to 8 years N=422	EVENDOL SCALE	Simple, quick to use, easy to understand. Recommended for use in emergency conditions compared to other scales.

dren aged 1-7 years, while it was more difficult to apply for children under one year (69%, n=37) (14).

The research on the FLACC scale made by Kochman A. et al. was conducted in 2 phases. The first phase was carried out with the aim of insight into the reliability of the scale results with different examiners. 66 children between age 6 months and 5 years were included, and 2 examiners examined pain in the same children one after the other using the FLACC scale without insight into other people's results. The results from both examiners were the same, which proves that the scale is reliable regardless of the examiner who administers it. The second phase of the study aimed to detect a change in results after the administration of analgesia. For this phase, they took a sample of 35 patients for whom they filled in the scale before the application, 30 and 60 minutes after the application of analgesia. The results showed that pain decreases after the application of analgesia, with the average score on the scale before analgesia being 5.54, after 30 minutes 2.00, and after 60 minutes 1.14, which means that the FLACC scale is an effective way of checking pain during analgesia (15).

A team of French pediatric pain experts designed the EVENDOL scale to assess pain in pediatric patients in the emergency department. They then conducted it on children up to 7 years old to find out if the scale is valid and feasible to use. 291 children from 4 French hospitals were included, 49% of which were admitted to the emergency room due to traumatic injury, 39% due to painful pathologies and 16% due to other difficulties (fever, rash, etc.). Pain was measured in each group separately, before and after the administration of pain-relieving drugs, and the results of all groups were lower after the administration of drugs. The results of the EVENDOL scale were also compared with the results of other pain scales (FLACC, CHEOPS and TPPPS) and the correlation coefficient between the scales was higher than 0.7. The feasibility of the scale was measured by involving 30 nurses in evaluating which scale was the easiest for them to use. They concluded that the EVENDOL scale is easy to

complete and appears to be a good tool for monitoring pain levels (16).

Beltramini A. et al. conducted research on the EVENDOL scale. They included 422 patients up to 8 years of age in their study. The doctor and nurse from that department individually assessed the children's pain by first filling in the numerical pain scale and then the EVENDOL scale. After the obtained results, it was concluded that the EVENDOL scale is reliable and valid for use in emergency outpatient cases because it is simple and quick to use and easy to understand. The literature states that in these conditions it is best to use the EVENDOL scale for pain assessment in children up to 8 years of age, and the VAS scale for children over 8 years of age (17).

Discussion

The purpose of this research was to find out which scales are reliable for use in the assessment of pain in pediatric patients by reviewing the literature and drawing relevant conclusions. Assessing pain in pediatric patients is a complex procedure that requires a set of skills that the medical professional must adopt in order to accurately diagnose the cause of pain and determine the appropriate treatment method depending on the type of pain. Pain assessment is usually done before starting the patient's treatment, during the treatment and during the evaluation to see if there is a shift in the intensity of the pain and if it is necessary to change the therapy. If the assessment of pain in all these steps is done correctly, there should be a positive shift in the quality of life, the preservation of physiological functions and the avoidance of negative outcomes. It should be taken into account that every patient is different, so his experience of pain can be expressed in different ways. When assessing pain, it is therefore very useful to use pain scales through which localization, rhythmicity, duration and quality of pain will be assessed (18).

A study by Garra G. et al. that included a comparison of the results of the Wong-Baker and the VAS scale showed that the Wong-Baker scale is better for use in younger children (7). The same was confirmed in the research of Bosenberg A. et al, where the results of the Wong-Baker scale compared to the observational assessment of pain showed that the results were most similar in children under 7 years old (8). Research by Garra G. et al. also shows that the VAS pain scale has an excellent correlation in older children with acute pain, while in younger children there are limitations due to their lack of understanding of the scale and the inability to distinguish between pain and fear (7). Dutch research that compared observational VAS and subjective VAS indicated that observational VAS does not give the same results as subjective VAS, which is why its accuracy is questionable (9). The clinical significance of the COMFORT scale was proven in two studies (10,11) in terms of pain assessment and sedation of pediatric patients in the operating room, the burn clinic and in the maternity ward, but the validity of the scale itself is not confirmed yet. As for the FLACC scale, research shows that it is a valid and reliable way of assessing pain during procedures (12), when applying analgesia (15), and has the greatest clinical utility in children aged 1-7 years (14). The research of Shen J. et al. states that it is difficult to differentiate between moderate and severe pain when applying the FLACC scale and that nurses with less work experience have more accurate results (13), while another study conducted in the same year (15) shows that the scale is reliable regardless of which examiner conducts it. Research related to the EVENDOL scale recommends the use of this scale in emergency medicine units as well as in outpatient emergencies. The scale is valid and reliable, which is proven by comparison with other scales, simple and quick to use, and the guidelines even recommend it as the best scale for use in emergency situations with children up to 8 years of age.

Guidelines from 2017 based on the most significant evidence on the validity of certain pain assessment scales recommend the use of the VAS scale as the gold standard in the assessment of pain in children over 6 years of age. In children under 6 years of age, it is recommended to use the FLACC and EVENDOL scale to assess acute and procedural pain. The EVENDOL scale is reliable for assessing pain in newborns and premature infants, while the FLACC is not. To assess pain in sedated and unconscious children, they recommend using the COMFORT scale (6).

The limitations of the mentioned results are on how reliable the mentioned scales are, how to differentiate between moderate and severe pain and how much influence the nurse's experience has on the

results themselves. Further research is needed to assess the above. In addition to treating pain with pharmacological methods, it should be taken into account that pain can be influenced by numerous other factors due to the very psychological nature of pain. The research of Kovačević I. et al. states that social support is associated with a better general health condition and a reduction in pain. It has been shown that emotional support from family and loved ones combined with sufficient information about one's illness and good communication with health professionals leads to easier acceptance of pain and better coping with it. This kind of information provides a broader picture of the complexity of pain and healthcare workers must take it into account during treatment if they want the patient to have the best possible outcome (19).

Conclusion

The expression of pain in children depends on the child's level of understanding, which is why it is necessary to know which pain assessment scale to use depending on the situation. The review of the available literature on the effectiveness of the VAS, Wong-Baker, Comfort, FLACC and EVENDOL scales found significant evidence in favor of using the VAS scale in older children, while the Wong-Baker scale is good for use in younger children up to 7 years of age. The COMFORT scale is proven to be clinically significant, and the FLACC scale is a valid and reliable scale and has the greatest clinical utility in children up to 7 years of age. The EVENDOL scale is recommended as a good way to assess pain in emergency cases in children up to 8 years of age. The use of scales is proven to be an effective way of assessing pain in pediatric patients, but it is necessary to further investigate the advantages and potential disadvantages of individual scales.

References

1. Jerleković M. Bol - peti vitalni znak. Shock. 2013:10-29. Croatian.
2. Cramton RE, Gruchala NE. Managing procedural pain in pediatric patients. Curr Opin Pediatr. 2012;24(4):530-8.
3. Freund D, Bolick BN. CE: Assessing a Child's Pain. Am J Nurs. 2019;119(5):34-41.
4. van Dijk M, Peters JW, van Deventer P, Tibboel D. The COMFORT Behavior Scale: a tool for assessing pain and sedation in infants. Am J Nurs. 2005;105(1):33-6.
5. Crellin DJ, Harrison D, Santamaria N, Babl FE. Systematic review of the face, legs, activity, cry and consolability scale for assessing pain in infants and children: is it reliable, valid, and feasible for use? Pain. 2015;156(11):2132-51.
6. Beltramini A, Milojevic K, Pateron D. Pain assessment in newborns, infants, and children. Pediatr Ann. 2017;46(10):e387-e395.
7. Garra G, Singer AJ, Taira BR, Chohan J, Cardoz H, Chisena E, Thode HC Jr. Validation of the Wong-Baker FACES Pain Rating Scale in pediatric emergency department patients. Acad Emerg Med. 2010;17(1):50-4.
8. Bosenberg A, Thomas J, Lopez T, Kokinsky E, Larsson LE. Validation of a six-graded faces scale for evaluation of postoperative pain in children. Paediatr Anaesth. 2003;13(8):708-13.
9. van Dijk M, Koot HM, Saad HH, Tibboel D, Passchier J. Observational visual analog scale in pediatric pain assessment: useful tool or good riddance? Clin J Pain. 2002;18(5):310-6.
10. van Dijk M, de Boer JB, Koot HM, Tibboel D, Passchier J, Duivenvoorden HJ. The reliability and validity of the COMFORT scale as a postoperative pain instrument in 0 to 3-year-old infants. Pain. 2000;84(2-3):367-77.
11. Maaskant J, Raymakers-Janssen P, Veldhoen E, Ista E, Lucas C, Vermeulen H. The clinimetric properties of the COMFORT scale: A systematic review. Eur J Pain. 2016;20(10):1587-1611.
12. Nilsson S, Finnström B, Kokinsky E. The FLACC behavioral scale for procedural pain assessment in children aged 5-16 years. Pediatric Anesthesia. 2008;18:767-74.
13. Shen J, Giles SA, Kurtovic K, Fabia R, Besner GE, Wheeler KK, et al. Evaluation of nurse accuracy in rating procedural pain among pediatric burn patients using the Face, Legs, Activity, Cry, Consolability (FLACC) Scale. Burns. 2017;43(1):114-20.
14. Lempinen H, Pölkki T, Kyngäs H, Kaakinen P. Feasibility and Clinical Utility of the Finnish Version of the FLACC Pain Scale in PICU. J Pediatr Nurs. 2020;55:211-16.

15. Kochman A, Howell J, Sheridan M, Kou M, Shelton Ryan EE, Lee S, et al. Reliability of the faces, legs, activity, cry, and consolability scale in assessing acute pain in the pediatric emergency department. Pediatr Emerg Care. 2017;33(1):14-17.
16. Fournier-Charrière E, Tourniaire B, Carbajal R, Cimerman P, Lassauge F, Ricard C, et al. EVENDOL, a new behavioral pain scale for children ages 0 to 7 years in the emergency department: design and validation. Pain. 2012;153(8):1573-82.
17. Beltramini A, Galinski M, Chabernaud JL, Ruiz Almenar R, Tsapis M, Goddet NS, et al. Pain Assessment in Children Younger Than 8 Years in Out-of-Hospital Emergency Medicine: Reliability and Validity of EVENDOL Score. Pediatr Emerg Care. 2019;35(2):125-131.
18. Bilić L, Dodig L, Bogović L, Kovačević I. Intervencije medicinske sestre u procjeni i terapiji kronične boli. Shock. 2015;1:16-22.Croatian.
19. Kovačević I, Majerić Kogler V, Krikšić V, Ilić B, Friganović A, Ozimec Vulinec Š, et al. Non-medical factors associated with the outcome of treatment of chronic non-malignant pain: a cross-sectional study. Int J Environ Res Public Health. 2022;19(5):2881.

PROCJENA BOLI U PEDIJATRIJSKIH BOLESNIKA - PREGLED LITERATURE

Sažetak

Uvod. Bol je neugodno osjetilno i emocionalno iskustvo uzrokovano postojećim ili mogućim oštećenjem tkiva. Pedijatrijski su pacijenti osjetljiva skupina na čije doživljavanje boli utječu razni drugi čimbenici, stoga je sama procjena i liječenje boli drugačije prirode nego kod odraslih. Pravilna procjena boli omogućuje adekvatno liječenje i ublažavanje tegoba.

Cilj. Provesti sustavni pregled literature vezane uz procjenu boli u pedijatrijskih bolesnika te prikupiti raspoložive spoznaje o pouzdanosti i valjanosti pojedinih metoda procjene boli.

Metode. Baza podataka PubMed pretražena je u cilju pronalaženja studija koje ukazuju na pouzdanost i valjanost ljestvica Wong-Baker, VAS, COMFORT i FLACC. Uvršteni su sustavni pregledi, pregledni članci i znanstveni radovi objavljeni u razdoblju od 2000. do 2020. Jezici prihvatljivi za uključivanje bili su engleski i hrvatski. Ključne riječi upotrijebljene za pretraživanje baze podataka bile su: procjena boli, pedijatrija i ljestvice boli.

Rezultati. Prema kriterijima uključivanja u ovaj rad korišteno je devet studija u koje su bili uključeni pedijatrijski bolesnici od rođenja do dobi od 18 godina. Smjernice ukazuju na kliničku pouzdanost navedenih ljestvica s uputama koje je ljestvice bolje primjenjivati u kojim slučajevima. Istraživanje je pokazalo da su ljestvice za procjenu boli dobar pokazatelj boli kod djece, bilo u slučaju samoprocjene s pomoću ljestvice VAS ili Wong-Baker bilo kada procjenjuje medicinski stručnjak s pomoću ljestvice FLACC, COMFORT ili EVENDOL.

Zaključak. Istraživanja preporučuju ljestvicu VAS za stariju djecu, dok je ljestvica Wong-Baker primjerena za djecu u dobi do sedam godina. Ljestvica COMFORT klinički je validirana, ljestvica FLACC i valjana je i pouzdana, posebno za djecu u dobi do sedam godina. Ljestvica EVENDOL preporučuje se u hitnim slučajevima kod djece u dobi do osam godina.

Ključne riječi: procjena boli, pedijatrija, skala boli