

## Indonesian Journal of Medicine (2024), 09(01): 8-17 Masters Program in Public Health, Universitas Sebelas Maret



# Effect of "Tell Show Do" Method on Dental Anxiety in Pediatrics Dentistry: A Meta Analysis

Mey Ditaputri Cahyani¹¹, Vitri Widyaningsih²¹, Hanung Prasetya³¹, Nanda Agustian Simatupang¹¹

<sup>1)</sup>Masters Program in Public Health, Universitas Sebelas Maret <sup>2)</sup>Faculty of Medicine, Universitas Sebelas Maret <sup>3)</sup>Study Program of Acupuncture, Health Polytechnics, Ministry of Health Surakarta

Received: 27 September 2023; Accepted: 03 November 2023; Available online: 10 January 2024

#### ABSTRACT

**Background:** Anxiety in children will make it difficult for dentists to perform dental treatment. In dentistry, especially pediatric dentistry, children who are very anxious will avoid examinations and refuse dental treatment. This study aims to analyze the influence of the "tell show do" method in reducing dental anxiety in pediatric patients.

**Subjects and Method:** This was a systematic review and meta-analysis conducted using PRISMA flow diagrams. Search articles through journal databases including: Google Scholar, PubMed, and Springer Link by selecting articles published in 2016 and 2022. The keywords used are ("tell show do" OR "TSD"AND "dental anxiety" OR "anxiety") AND ("pediatric dentistry" OR "children") AND ("RCT" OR "randomized control trial"). The inclusion criteria were full paper articles using the Randomized Controlled Trial (RCT) research method, the results of the analysis used the Mean SD value, the intervention provided was a tell show do, the study subjects were pediatric dental patients at the first visit, with dental anxiety as an outcome. Articles that met the requirements were analyzed using the Revman 5.3 application.

**Results:** The meta-analysis of 12 articles shows that there is an increasing effect using the tell show do method on reducing dental anxiety. Children who received the tell show do intervention had a dental anxiety level 0.54 units lower than those who did not receive the tell show do, and the effect was statistically significant (SMD 0.54; 95% CI= 0.23 to 0.85; p=0.0007).

**Conclusion:** The tell show do method has an effect on reducing anxiety in pediatric dental patients.

**Keywords:** tell show do, dental anxiety, meta-analysis.

#### **Correspondence:**

Mey Ditaputri Cahyani. Master's Program in Public Health, Universitas Sebelas Maret. Jl. Ir. Sutami 36A, Surakarta 57126, Central Java, Indonesia. Email: m.ditaputri@gmail.com. Mobile: +62878-38415626.

#### Cite this as:

Cahyani MD, Widyaningsih V, Prasetya H, Simatupang NA (2024). Effect of "Tell Show Do" Method on Dental Anxiety in Pediatrics Dentistry: A Meta Analysis. Indones J Med. 09(01): 8-17 https://doi.org/10.26911/theijmed.2024.09.01.02.

© Mey Ditaputri Cahyani. Published by Master's Program of Public Health, Universitas Sebelas Maret, Surakarta. This open-access article is distributed under the terms of the Creative Commons Attribution 4.0 International (CC BY 4.0). Re-use is permitted for any purpose, provided attribution is given to the author and the source is cited.

### **BACKGROUND**

Dental anxiety is a state of fear of dental treatment that occurs before or during a dental procedure. Anxiety often occurs on the first visit to the dentist. Anxiety in children will make it difficult for dentists to perform dental treatment. In dentistry, especially pediatric dentistry, children who

e-ISSN: 2549-0265

are very anxious will avoid examinations and refuse dental treatment (Sagrang et al., 2017).

Klingberg and Broberg reported that the prevalence of anxious children when receiving dental care aged 4-18 years was 6-20% (Milica et al., 2015). One of the reasons for the high number of children who do not go to the dentist is dental anxiety (Mittal et al., 2012). Basic Health Research Data (RISKESDAS) for 2018 shows that the prevalence of dental and oral problems in Indonesia is 57.6%. The prevalence of children's anxiety about dental and oral care in Indonesia reaches 22% (KEMENKES, 2018).

Dental anxiety can be a major barrier for children receiving dental treatment. Children have limited communication skills and are less able to express their fears and anxieties. Their behavior is a reflection of their inability to cope with anxiety and behavior management is a guide that can provide appropriate treatment strategies for pediatric patients (Gupta et al., 2014).

In medical science, various methods can be used to reduce anxiety, namely pharmacology and non-pharmacology. Pharmacologically in the form of administering drugs such as benzodiazepines, mirtazapine, tricyclic anxiolytic (Wright GZ and Kupietzy A, 2014). Patients who are unresponsive, uncooperative, and refuse to undergo treatment through non-pharmacological approaches can be considered for pharmacological treatment such as sedation or general anesthesia (Deva, 2016). Non-pharmacologically, these include: tell show do, modeling, distraction, presence of parents, music, suggestions, light touch, and others without drugs. The tell show do method is a nonpharmacological method that is carried out with the stages of providing information, then providing visualization/demonstration and after the child understands, this stage is

carried out on the child (Raseena et al., 2021). Non-pharmacological methods are able to divert a child's mind with the intervention given, someone who is in a state of mind diversion can significantly improve brain function because that person can access the subconscious mind. So that with the mind diversion method, it can reduce anxiety through the subconscious mind (Prasetya et al., 2018).

Based on the background above, pain is not the only reason to be afraid of going to the dentist. Anxiety or unknown fear during dental treatment is a major factor and has been a major concern for dentists for a long time. This also causes a high number of children who do not go to the dentist because of dental anxiety and requires proper treatment, so researchers are interested in conducting a study. by using a systematic review and meta-analysis which can summarize some of the results of primary studies or previous research with a systematic search to combine the results and get more precise estimates to draw new conclusions.

## SUBJECTS AND METHOD

## 1. Study Design

The study design used in this study was a systematic review and meta-analysis, using the PRISMA flow chart guidelines. Article searches were carried out using a database of journals which included: Google Scholar, PubMed, and Springer Link by selecting articles published in 2016 - 2022. The keywords used were ("tell show do" OR "TSD"AND "dental anxiety" OR "anxiety") AND ("pediatric dentistry" OR "children") AND ("RCT" OR "randomized control trial").

## 2. Inclusion Criteria

Inclusion criteria were full paper articles using the Randomized Controlled Trial (RCT) research method, the results of the

analysis used the Mean SD value, the intervention provided was a tell show do, the study subjects were pediatric dental patients at the first visit, with dental anxiety as an outcome.

#### 3. Exclusion Criteria

Exclusion criteria for this study included articles published in other than English.

## 4. Variable Operational Definition

In formulating the research problem here using PICO. The population is confirmed COVID-19. Intervention is having comorbid hypertension, with comparison that is having comorbid hypertension and outcomes are patient mortality.

The Tell Show Do method is a very effective method of introducing dental treatment procedures to shape children's behavior and condition them to receive treatment.

Dental anxiety is a state of fear of dental

treatment that occurs before or during dental procedures.

## 5. Study Instruments

The instrument in this study was published articles that tested the Tell Show Do method using FIS (Face Image Scale) / VAS, SAS, MDAS as a measuring tool for dental anxiety in pediatric dental patients.

## 6. Data Analysis

Data analysis in this study used the Review Manager application (RevMan 5.3). Data were analyzed based on variations between studies by determining the use of random effect analysis models. In this study using I<sup>2</sup> to quantify dispersion. The results of data analysis are in the form of effect size values for the heterogeneity of the study, which will later be interpreted in the form of forest plots and funnel plots.

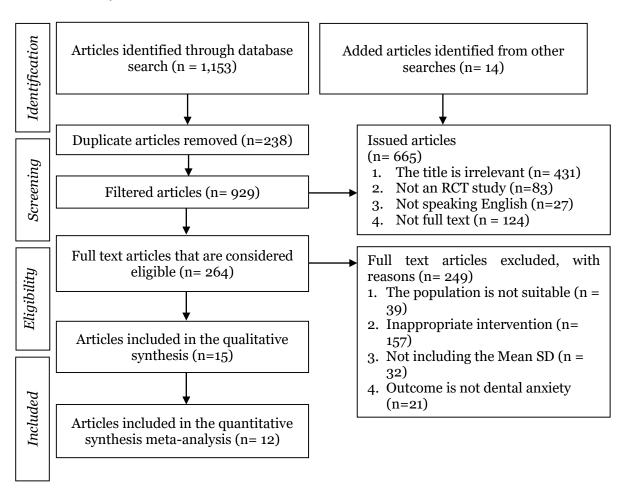


Figure 1. PRISMA flow diagram

## **RESULTS**

Research from primary studies related to the effect of the tell show do method on reducing anxiety in pediatric dental patients consists of 12 articles originating from 9 continents namely Asia, Europe, North America, and

South America. There are 5 studies originating from the Asian continent (4 India, 2 Iran, 2 China, and 1 Korea), 2 studies from the European continent (Sweden and England), 1 study from the North American continent located in Venezuela.

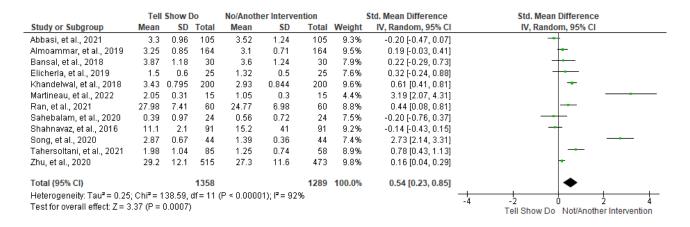


Figure 2. The Forest Plot of the Effect of the "Tell Show Do"

Method on Reducing Anxiety

An article search was carried out using a database based on the PRISMA flow diagram as shown in Figure 1. Assessment of the quality of the study was carried out qualitatively and quantitatively. Quality assessment in this study used critical appraisal for randomized controlled trials (RCT) (CEBMa, 2014). Answers (Yes) will be given a score of 1 and answers (No) will be given a score of 0. After assessing the quality of the study, a total of 12 articles included in the meta-analysis quantitative synthesis process were analyzed using RevMan 5.3.

## **Forest plot**

Interpretation of the results of the metaanalysis process can be seen through the forest plot. Figure 2. shows that there is an increase in the effect of using the tell show do method on reducing dental anxiety. Children who received the tell show do intervention had a dental anxiety level 0.54 units lower than those who did not receive the tell show do, and the effect was statistically significant (SMD 0.54; 95% CI=0.23 to 0.85; p< 0.001). Meanwhile, there was high heterogeneity in effect estimates between studies ( $I^2$ =92%; p<0.001). Thus calculating the average estimated effect with the Random Effect Model approach.

## **Funnel Plot**

A funnel plot is a plot that depicts the estimated effect size of each study against the estimate of its precision, which is usually the standard error. Based on Figure 3, it shows that the distribution of effect estimates is not symmetrical, more plots are located to the right of the estimated average vertical line, for studies with smaller samples. So the funnel plot indicates that there is a publication bias that overestimates the true effect.

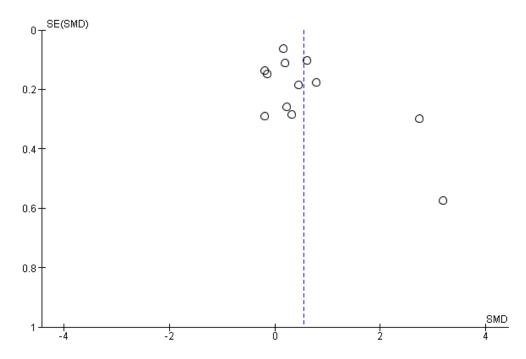


Figure 3. Funnel Plot Effect of the Tell Show Do Method on Reducing Anxiety

## **DISCUSSION**

Based on 12 articles that meet the criteria as sources for this research, the research locations are spread across 7 countries from 3 continents with different sample sizes ranging from 30 to 988 samples. There are 9 articles that use other interventions as comparison including tiny Dentist game, Tell Play Do, Little Lovely Dentist app, Jilo Animation, Axperential learning, Cartoon Animation, Cognitive Behavioral Therapy, Virtual reality technology (VR) and Virtual Reality Headset (VRH) and 3 other articles without using other interventions or without intervention.

After doing the analysis using the revman test. The results of this study found that the tell show do intervention could affect dental anxiety in pediatric dental patients by 0.54 times compared to other interventions or no intervention, and statistically significant (SMD 0.54; 95% CI = 0.23 to 0.85; p=0.0007) . This is in line with research conducted by David et al. (2018), the tell show do method shows significant differences compared to other methods

including guided imagery, distraction, modeling, and positive reinforcement (David & Wong, 2018).

In line with research conducted by Ghibban et al (2019), said that Tell-Show-Do is the most accepted non-pharmacological behavioral method by pediatric patients according to the results of the Pulse rate in Medina, Saudi Arabia. These results can be linked to verbal communication with the child and trying to convey a sense of interest in the dental procedure, contributing significantly to reducing stress and high heart rate and fear. In addition, trying to involve the child in all steps of treatment as much as possible according to his mental ability and level of perception and understanding results in a lower level of anxiety (Ghibban et al., 2019). Another study conducted by Yildirim et al (2016) also stated the same thing where the results of his research said that the tell show do method is appropriate for reducing fear and anxiety in children's dental care (Yildirim et al., 2016). Rajeswari et al (2019) also argues that the tell show do method is a method that is

widely used because it can reduce anxiety in pediatric patients before dental treatment is given (Rajeswari et al., 2019).

Azher et al. (2020) compared tell show do with relaxation therapy. The mean pulses in the BBPT and TSD groups were 106.96 mm Hg and 102.25 mm Hg, respectively, at baseline. A decrease in heart rate was observed in both groups after the implementation of the behavior modification strategy. However, after dental treatment, the mean pulse rate increased slightly in the BBPT group, while it showed a further increase in the TSD group (Azher et al., 2020). Al-Halabi et al. (2018) also evaluates the effect of virtual reality glasses and conducts a tell show during local anesthesia. They had similar results in reducing anxiety. It is difficult for the practitioner to perform the procedure because the use of the VR box blocks vision. So, tell show do is relatively operator-friendly and cost-effective.

This research is not in line with Nivedita & Amar (2019), based on 40 participants, it was found that comparisons between groups revealed no significant differences between interactive game play on cellphones and Tell-Show-Do, both on the Facial Image scale (FIS ) score, Frankl Rating and Pulse Rate. Management of anxiety in pediatric dental patients with cognitive behavioral play therapy has proven to be more effective in reducing preoperative anxiety in pediatric dental patients compared to audiovisual distraction and tellshow-do techniques (Rajeswari et al., 2019). The Play-Doh Doctor Drill 'n Fill toy set and smartphone game "Dentist game for kids" simulate various dental procedures for pediatric patients and are far superior to the Tell-Show-Do technique in reducing anxiety and in managing children effectively during dental care. They are new, simple, and effective tools that can produce better results

related to dental fear and anxiety (Radha-krishna et al., 2019). In addition, Elicherla et al. (2022) compared the effectiveness of a smartphone application (Little Lovely Dentist) with a tell-show-do (TSD) technique in reducing dental anxiety at the first visit. They found that children who were taught to use the app before visiting the dentist had significantly lower levels of anxiety compared to the TSD group (Elicherla et al., 2019).

Another inconsistent study was conducted by Tahersoltani et al., (2021), as many as 85 children were enrolled in the tell-show-do group and 58 children in the video game method group. Game group sign was significantly (p< 0.001) lower than show-show group sign on Venham scale mean (Mean= 1.25; SD= 0.74 vs Mean= 1.98; SD= 1.04), mean heart rate during treatment (Mean= 105.22; SD= 8.22 vs Mean= 111.35; SD= 13.15), difference in heart rate in the intervention phase (Mean= -16.43; SD= 20.06 vs Mean= 0.47; SD= 23.58) and difference in heart rate in the injection phase (Mean= 7.26; SD= 17.86 vs Mean= 22.24; SD= 18.05). The video game method has a suitable efficiency for anxiety control compared to the tell-show-do method.

The tell show do method is one of the most frequently taught behavior management techniques. because it is convenient for dentists and patients. It is based on the principles of learning theory. Before carrying out actions in service, the child must be well informed and demonstrations must be given using a simulator exactly what will happen before the procedure begins (Vishwakarma et al., 2017).

In this study, the focus was on the population with the criteria of children, because dental problems are difficult to treat in this age group, because they show more disturbing behavior, have dental anxiety,

and are the most difficult to treat (Khandelwal et al., 2018). Children tend to be uncooperative in dental and oral care when they are anxious. Uncooperative children will make it difficult for dentists to provide treatment, therefore a method is needed to deal with children's anxiety (Campbell, 2017).

Dental anxiety in children is influenced by many factors. Sagrang (2017) in his research, stated that several factors that cause dental anxiety in children are parenting styles, experiences from other people, operators or dentists, and environmental conditions for dental practice. Parents are the cornerstone of a child's education which is an example of behavior. There are three parenting styles, namely democratic, permissive, and authoritarian. Parenting style can determine the child's attitude towards dental anxiety, namely overprotective attitude, overindulgent attitude, overauthoritative attitude, and rejecting or under affectionate attitude (Sagrang et al., 2017).

Factors that cause anxiety apart from parenting parents are the experiences of other people. Relatives or families who are worried about dental and oral care beforehand can make children anxious. This is often used as a consequence when visiting the dentist so that it changes the mindset of children about dental and oral care. Another cause of anxiety is the operator or the dentist. The attitude of a dentist who is careful, friendly and patient is the key so that children do not experience high anxiety. Regarding the dental practice environment, it is influenced by practice tools that are considered scary by pediatric patients (Sagrang et al., 2017).

If the child's behavior at the dental clinic cannot be regulated, then no treatment should be carried out on that day. Managing a child's behavior in a positive way will not only improve work efficiency but also make the child's experience of treatment more enjoyable. Therefore, gaining the child's trust and cooperation for treatment, and managing the child's behavior is important. Tell show do reduces anxiety by increasing basic knowledge of procedures the child may be performing. This method can also be combined with other methods for maximum results.

## **FUNDING AND SPONSORSHIP**

This study is self-funded.

## **AUTHORS' CONTRIBUTION**

Mei Ditaputri Cahyani is the main researcher who selects topics, tracks and collects research data. Vitri Widyaningsih, Hanung Prasetya, Nanda Agustian Simatupang analyzed data and reviewed research documents.

#### CONFLICT OF INTEREST

There is no conflict of interest in this study.

#### ACKNOWLEDGMENT

The researcher would like to thank all those who have helped in the preparation of this article and also thank the database providers PubMed, Google Scholar and Springer Link.

## REFERENCE

Abbasi H, Muhammad S, Rizwan J (2021). The Efficacy of Little Lovely Dentist, Dental Song, and Tell-Show-Do Techniques in Alleviating Dental Anxiety in Paediatric Patients: A Clinical Trial. Biomed Res Int. 1-7. https://doi.org/10.1155/2021/1119710.

Al-Halabi M, Bshara N, AlNerabieah Z (2018). Effectiveness of audio-visual distraction using virtual reality eyeglasses versus tablet device in child behavioral management during inferior alveolar nerve block. Anaesth Pain

- & Intensive Care, 22(1): 55–61. https://www.apicareonline.com/index.php/APIC/article/view/22/819.
- Almoammar K (2019). Interventions to Reduce Fear of Dentistry in Individuals with Cleft Lip and Palate [King's College London]. https://faculty.ksu.edu.sa/sites/default/files/PhD\_Thesis-F.pdf.
- Azher U, Srinath SK, Nayak M (2020). Effectiveness of Bubble Breath Play Therapy in the Dental Management of Anxious Children: A Pilot Study. J Contemp Dent Pract, 21(1), 17–21. https://doi.org/10.5005/jp-journals-10024-274.
- Bansal A, Shilpa J, Parimala T, Ankur J (2018). Effect Of Virtual Reality Headset Using Smart Phone Device On Pain And Anxiety Levels During Local Anesthetic Injection In Children With 6-10 Years Of Age. Indian J Sci Res, 7(2): 47-50. https://doi.org/10.36106/paripex.
- Campbell C (2017). DentalFear and Anxiety In Pediatric Patients. Switzerland: Springer: 3-108.
- David CAM, Wong SS (2018). Anxiety Management Strategies in Reducing Anxiety. ISERD International Conference, 101(1): 13–20.
- Deva PA (2016). Strategies to manage patients with dental anxiety and dental phobia: literature review. Clin Cosme. Investig Dent, 10(8): 35-50. DOI: 10.-2147/CCIDE.S63626.
- Elicherla SR, Bandi S, Nuvvula S, Challa R, Subbareddy, Saikiran KV, Priyanka, VJ (2019). Comparative evaluation of the effectiveness of a mobile app (Little Lovely Dentist) and the tell-show-do technique in the management of dental anxiety and fear: a randomized controlled trial. J Dent Anesth Pain

- Med, 19(6): 369-378. https://doi.org-/10.17245/jdapm.2019.19.6.369.
- Ghibban A, Namnakani A, Omar O (2019). The Effect of Different Non-Pharmacological Methods in the Management of Pediatric Patients' Dental Anxiety and Behaviour, a Randomized Control Study. EC Dent Sci, 18(10): 203–211. DOI:10.31080/ecde.2019.18.01230.
- Kemenkes RI (2018). Riset Kesehatan Dasar (Riskesdas). Jakarta: Balitbang Kemenkes RI.
- Khandelwal D, Kalra N, Tyagi R, Khatri A, Gupta K (2018). Control of Anxiety in Pediatric Patients using Tell Show Do Method and Audiovisual Distraction. J Contemp Dent, 19(9):1058-1064.
- Martineau K, Dubere NAB, Sidhu VS (2022). Evaluation of Effectiveness of Tell play Do and Tell Show Do Technique in Management of Pediatric Dental Patient: A Clinical Study. Med Res J, 17(8): 30–32. https://doi.org/-10.4103/ijpr.ijpr
- Milica JM, Aleksandar M (2015). Dental anxiety: etiology and treatment options. Serb Dent J, 62:174-190.
- Murti B (2018). Prinsip dan metode riset epidemiologi (5th ed.). Program Studi Ilmu Kesehatan Masyarakat, Program Pascasarjana, Universitas Sebelas Maret.
- Nivedita P, Amar K (2019). Comparison of effect of Interactive mobile game (IMG) with Tell-Show-Do technique (TSD) on behavior in six to twelve year-old children: A pilot trial. J Dent Health Oral Disord Ther, 10(4): 241–245. https://doi.org/10.15406/jdhodt.2019.10.00489.
- Prasetya H, Murti B, Anantanyu S, Syamsulhadi M (2018). The effect of hypnosis on adherence to anti tuberculosis drugs using the health belief model. Int J Clin Exp Hypn. 66 (2): 211-227.

- https://doi.org/10.1080/00207144.2 018 1421-361.
- Radhakrishna S, Srinivasan I, Setty JV, Melwani A, Hegde KM (2019). Comparison of three behavior modification techniques for management of anxious children aged 4–8 years. J Dent Anesth Pain Med, 19(1): 29-36. https://doi.org/10.17245/jdapm.2019.19.1. 29.
- Rajeswari SR, Ramesh MV, Vinay C, Uloopi KS, RojaRamya KS, Ramesh MV (2019). Effectiveness of cognitive behavioral play therapy and audiovisual distraction for management of preoperative anxiety in children. Int J Clin Pediatr Dent, 12(5): 419–422. https://doi.org/10.5005/jp-journals-1000-5-1661.
- Ran L, Zhao N, Fan L, Zhou P, Zhang C, Yu C (2021). Application of virtual reality on non-drug behavioral management of short-term dental procedure in children. Affordable Care Act, 22(1): 1–9. https://doi.org/10.1186/s13063-021-05540-x.
- Raseena KT, Jeeva PP, Kumar A, Balachandran D, Anil A, Ramesh R (2020). A comparative study of tell-show-do technique with and without the aid of a virtual tool in the behavior management of 6-9-year-old children: A non randomized, clinical trial. J Indian Soc Pedod Prev Dent, 38(4):393-399. DOI: 10.4103/JISPPD\_JISPPD\_280\_20.
- Sagrang PS, Wowor VNS, Mintjelungan CN (2017). Pengaruh pola asuh orangtua terhadap tingkat kecemasan anak sebelum menjalani perawatan penambalan gigi Di RSGM Unsrat (Effect of parenting style on children's anxiety level before undergoing dental fillings at RSGM Unsrat). Jurnal E-GIGI, 5(1). https://doi.org/10.35790/eg.5.1.2017. 14770.

- Sahebalam R, Rafieinezhad R, Boskabad M (2020). Comparison of the Efficacy of Jilo Animation Approach versus Conventional Tell-Show-Do (TSD) Technique on Cooperation and Anxiety Levels of Children during Dental Practice. J Dent (Shiraz), 21(4):284-291. doi: 10.30476/dentjods.2020.-81897.1001.
- Shahnavaz S, Hedman E, Grindefjord M, Reuterskiöld L, Dahllöf G (2016). Cognitive behavioral therapy for children with dental anxiety: A randomized controlled trial. JDR Clin Trans Res, 1(3): 234–243. https://doi.org/10.117-7/2380084416661473.
- Song JS, Chung HC, Sohn S, Kim YJ (2020). Effects of psychological behaviour management programme on dental fear and anxiety in children: A randomised controlled clinical trial. Eur J Paediatr Den, 21(4): 287–291. https://doi.org/10.23804/ejpd.2020.21.04.6.
- Tahersoltani A, Alirez H, Sara G, Ahma RS (2021). Effect of the Tiny Dentist game on 4-10 years old children's anxiety compared with Tell-Show-Do method: A clinical trial. J Dent Probl Solut, 8(1): 034–041. https://doi.org/10.17-352/2394-8418.000102.
- Vishwakarma A, Bondarde P, Patil S, Dodamani A, Vishwakarma P, Mujawar S (2017). Effectiveness of two different behavioral modification techniques among 5–7-year-old children: A randomized controlled trial. J Indian Soc Pedod Prev Dent, 35(2): 143-149. https://doi.org/10.4103/JISPPD.JISP PD\_257\_16.
- Wright GZ, Kupietzy A (2014). Behavior Management In Dentistry For Children Second Edition. UK: Saunders, p.6.
- Yildirim C, Akgün ÖM, Polat GG, Ok MA, Altun C, Basak F (2016). Assessment

## Cahyani et al./ Effect of "Tell Show Do" Method on Dental Anxiety

of dental fear in Turkish children with the frankl behavior rating Scale (FS) and the sound-eye-Motor (SEM) scale. Gulhane Medical J, 58(3): 272–276. https://doi.org/10.5455/Gülhane.180 391. Zhu M, Yu H, Xie B, Li H, He Q, Li H, Su J, Li X (2020). Experiential learning for children's dental anxiety: a cluster randomized trial. BMC Oral Health, 20(1): 216. https://doi.org/10.1186/s12903-020-01204-5.