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# Primary tooth extraction with distraction behavior management techniques: A case report

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**ABSTRACT**

Treatment of primary teeth requires careful extraction and appropriate management to achieve optimal results and reduce the risk of complications. Distraction behavior management has been introduced as an important approach to address anxiety and improve patient cooperation during dental procedures, especially in pediatric patients. This case report describes an 8-year-old girl who underwent an extraction procedure using non-pharmacological distraction behavior management techniques. The results of extraction treatment with distraction behavior management proved to be appropriate, involving diverting the patient's focus from the instruments, the operator, and the procedure during the procedure. The extraction procedure proceeded smoothly from start to finish, despite the difficulty of primary tooth extraction. Primary tooth extraction is one of the most feared dental treatments for children. However, with appropriate behavior management techniques according to the child's behavioral classification, the tooth extraction procedure can proceed smoothly and without problems.

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# INTRODUCTION

Management of distractive behavior in the treatment of pediatric patients has become a significant approach in the field of dentistry (Kaswindiarti & Yuanihsan, 2025),(Lestari & Permatasari, 2025). In pediatric patients, anxiety and fear of medical procedures often present serious challenges. Effective behavioral management can help address anxiety and build patient confidence, allowing dental procedures to proceed more smoothly and comfortably. Distraction techniques, which involve redirecting the patient's attention away from frightening stimuli, have been shown to be

effective in reducing anxiety and increasing patient cooperation during dental procedures (Soeparmin, 2010),(Anggreni, Pudentiana, & Siti Nurbayani, nd).

In the context of extraction procedures, distraction behavior management may provide additional benefits. The child's already distracted attention can encourage patient cooperation during the extraction procedure. Therefore, a holistic and comprehensive approach is needed to manage these cases, considering distraction behavior management techniques (Ismanto et al., 2025),(Wada, Puspitasari, & Harini, 2025).

However, although distraction behavior management has been shown to be effective in dental care for pediatric patients, its application in tooth extraction remains relatively limited. Studies and case reports documenting the use of distraction techniques in this context are essential to improve understanding and clinical application (IDI, 2024),(Dinata, Lelyana, Lesmana, & Dwiarie, nd). Therefore, the purpose of this case report is to provide an overview of the management of extraction using distraction behavior management in a pediatric patient. This case report will describe the steps taken in the management of this case, describe the distraction techniques used, and evaluate the outcomes and benefits of this approach in the specific context of this case (Faryanti, 2023),(Karundeng, Kep, Tanan, Kep, & Firman, 2025).

# RESEARCH METHOD

An 8-year-old female patient came to Maranatha Dental and Oral Hospital with her mother complaining of pain in her upper left back tooth since 1 week ago and wanted it extracted. The patient's mother was worried because her child always complained of pain and difficulty sleeping at night, her mother was also worried that her child's tooth would become swollen so the patient's mother wanted her child's milk tooth extracted. The patient had no abnormalities in her general health history. The patient had a bad habit of chewing on one side, namely on the side opposite the cavity. The patient had previously undergone dental treatment, namely fillings on her back teeth. At the initial visit, the patient was shy, the patient's mental age was in accordance with her chronological age and the patient's behavior while in the dental chair according to Frankl, namely positive acceptance of treatment but always being careful, willing to comply with the dentist by making conditions but the child still followed the dentist's instructions cooperatively, and if according to White, shy behavior, namely fear of making mistakes and difficulty listening to instructions, avoiding eye contact and hiding behind parents, the patient also did not talk much, answering only enough, so she needed a boost in self-confidence (Pipit, 2023),(Soalihin, Kadek Sudiyasa, Riyanto, Handayani, & Ariyani, 2025).

The treatment performed in this case was the extraction of tooth 65. Figures 1 and 2 show the clinical images of tooth 65 from the occlusal and buccal planes. First, the patient's mother was explained the procedure and the process to be carried out during the extraction procedure. After a clinical examination, an informed consent was signed by the patient's mother. The patient was then referred to the radiology room for a panoramic radiograph (Figure 3) as a supporting examination before the extraction. The panoramic radiograph of tooth 65 showed abnormalities in the crown, furcation, and periapical areas. The crown of tooth 65 appeared to have a large cavity and appeared as a radiolucency that reached the pulp. In the furcation and periapical areas, diffuse radiolucency was seen, indicating that tooth 65 had previously experienced an abscess (Masriadi et al., 2021),(Septina, Lubis, & Prasetyaningrum, 2022).

**Figure 1.** Tooth 65 has a large cavity (occlusal view)

**Figure 2.** Tooth 65 has a large cavity (buccal view)

**Figure 3.** Hresults of panoramic radiography supporting examination

**Figure 4.** Tools and materials for the extraction procedure

The next step in the extraction procedure is preparing the tools and materials, the work environment, and the operator (Figure 4). After preparing the tools and materials, the patient was instructed to rinse with 0.1% povidone iodine while being introduced to the dental unit and engaged in a casual conversation (Figure 5). The child patient showed fear and anxiety when first checking around to ensure the tools and materials were ready, so the operator used a device-assisted approach at each step of the procedure (Figure 6). Although each step was not performed directly, the operator engaged in a conversation about the video being watched to further distract the patient from the operator's hand movements as he prepared the tools. The operator dipped a tampon in 10% povidone iodine as an aseptic action at the injection site (Figure 7) from extra-oral to intra-oral with a counterclockwise motion without repetition. The patient did not actually show any fearful behavior, only briefly glancing at the patient before the operator shifted his focus back to the media being tuned. The patient responded well and returned to watching with enjoyment.

**Figure 5.** The patient is introduced to the dental chair and invited to have a casual chat

**Figure 6.** Behavior management of distraction techniques before the start of the extraction procedure

**Figure 7.** Tampon dipped in 10% povidone iodine for aseptic action

**Figure 8.** Results of tooth extraction 65

**Figure 9.** Patients are given rewards after treatment is completed

The position of the device held directly by the patient also provides its own comfort where the patient can choose the media played on the device, adjust the position of the device in the patient's direct line of sight (Prasetya & Adita, nd),(Umayyah, 2024), even though the operator was performing procedural movements. After that, the patient's gingiva was dried and then a topical anesthetic gel was applied and left for several minutes. After the patient said the gingiva felt warm, the operator tried to inject the buccal and palatal areas of tooth 65. The operator then observed the

patient's movements when he was about to take the needle from the instrument tray, seeing that the patient remained calm, the operator continued the injection process and appeared very focused on the video on the device that was being played, even though the patient reacted as if enduring pain. After the injection, the operator continued to loosen the tooth with a straight elevator slowly while continuing to monitor the patient's movements carefully with the assistant operator, to ensure the patient remained distracted and did not experience unbearable pain.

Next, once the tooth feels loose from its socket, the operator proceeds to the extraction stage using maxillary posterior crown extraction forceps. The operator and assistant operator continue to monitor the child's movements and reactions throughout the extraction process with the extraction forceps (Sudiasih & Dewi, 2025),(AGUSTIEN, 2023). However, it can be said that the patient was completely distracted and did not even notice the forceps being used by the operator. The tooth was successfully extracted (Figure 8) and then cleaned by irrigating with 0.9% NaCl and 10% povidone iodine (1:1) and then curettage to remove any pathological tissue that might remain in the extraction socket.

After successfully performing the extraction, the patient did not cry at all, but due to the patient's cooperation, the operator still gave a reward for his very good behavior during the extraction procedure (AGUSTIEN, 2023),(Lubis, 2021). This served as reinforcement for the patient's cooperation during the procedure. The operator then provided post-extraction information to the patient's parents. The patient returned for a follow-up visit one month after the procedure, and the extraction wound had closed properly, with no swelling or complaints (Figure 10).

**Figure 10.** Condition of the former extraction area of tooth 65 after control 1

# RESULTS AND DISCUSSIONS

One of the classification systems for children's behavior in dental care introduced by Frankl is known as the scale called: "Frankl Behavioral Rating Scale". Frankl classifies children's behavior into four groups according to the child's attitude and cooperation in dental and oral care, namely clearly negative (-), where the child refuses the dental treatment that will be carried out. This refusal is shown by crying loudly, full of fear, isolating himself, the child is defiant and does not want to listen to anything said by the dentist. Next there is negative behavior (-), namely the child is reluctant to accept treatment, is uncooperative, shows some negative behavior, but is not expressed such as pouting or being alone (Mairiza, 2014),(NURHAYATI, 2020).

Positive behavior (+), where the child is willing to accept treatment but always acts cautiously, is willing to obey the dentist by making conditions but the child still follows the dentist's directions cooperatively. Clearly positive behavior (++) is intended for children who have a good relationship with the dentist, the child is interested in the dental treatment procedure, and

the child feels happy, enjoys the dental treatment procedure, shows good verbal contact, and asks a lot of questions. Based on the classification of child behavior according to Frankl, the patient in this case report is included in positive behavior, namely the child is willing to accept treatment but always acts cautiously, is willing to obey the dentist by making conditions but the child still follows the dentist's directions cooperatively.11-13

White's classification of children's behavior towards dental and oral care is cooperative behavior which is the key to the success of dentists in carrying out dental and oral care. Children can be treated well if they show a positive attitude towards the treatment being carried out. Most pediatric dental patients show a cooperative attitude during their visits to the dentist. Signs that child and adolescent patients are classified as cooperative are the patient appears relaxed and enjoys the visit from the waiting room, follows all instructions given in a relaxed manner, understands all commands themselves, appears enthusiastic about the treatment to be carried out, treatment in the clinic is usually sufficient with the tell-show-do technique, there is a relationship between the doctor (Anggreni et al., nd),(PERMATASARI, 2014).

The next behavioral class is patients with uncooperative behavior. There are two groups of patients who fall into the uncooperative behavior category: children under 3 years old who are still highly dependent on their mothers and handicapped children, either with mental retardation or physical limitations. Both of these patient groups are essentially unable to communicate and understand instructions. This makes treatment very difficult for dentists. Pediatric patients categorized as uncooperative can be treated with premedication and general anesthesia. Patients with hysterical behavior fall into the next classification. Several characteristics of pediatric patients categorized as hysterical behavior exist: patients are generally 3-6 years old and this is their first visit, loud crying, screaming, and anger, whining and irritability, and high levels of anxiety and fear. This type of behavior can be managed by evaluating the patient before treatment and approaching the child gently and explaining the treatment procedure to reduce their anxiety (Rasmita et al., 2024),(Karundeng et al., 2025).

Patients with stubborn behavior have several characteristics, namely resisting every instruction, passively defending themselves and not paying attention to orders, remaining silent and not wanting to move or open their mouths, being defiant and impolite. Child patients with stubborn behavior can be treated by trying to understand and communicate with the patient without using force, because force will make it more difficult for the dentist to carry out treatment. Patients with shy behavior is a form of anxiety in forming a relationship or communication between the dentist and the child patient, which interferes with achieving successful treatment. Characteristics of children with shy behavior include fear of making mistakes and difficulty listening to instructions, avoiding eye contact and hiding behind parents, not talking much, answering only enough, and needing a boost in self-confidence (Asikin et al., 2024),(Asikin et al., 2024).

Tense behavior is a child who appears physically tense, with a sweaty forehead and hands, dry lips, a trembling voice, trembling hands, and a fidgety look around the clinic, while accepting the treatment. Further behavior is whiny or crying throughout the procedure, while still remaining receptive to treatment and receiving attention from the dentist. The most appropriate treatment for this group of behaviors is for the dentist to be patient and calm. The dentist should praise the child for their cooperation during the dental treatment and inform them that it won't take long and they can go home.

In this case report, based on White's classification, the patient exhibited whiny behavior. The operator should be patient in engaging in casual conversation, effectively diverting the patient's attention, coaxing, and providing reinforcement in the form of social rewards. They should also promise a material reward upon completion of the treatment, assuring the patient that the treatment will be quick and painless, and that the patient can go home upon completion.

The extraction of tooth 65 is a minor surgical procedure performed to remove the tooth from its socket using forceps and an elevator. The ideal tooth extraction is a painless extraction of an intact tooth with minimal tissue trauma so that the extraction site can heal completely. 9 The indication for extraction in this case was tooth 65 with extensive caries, which, if left untreated, could become a dentoalveolar abscess. 10 Furthermore, to minimize procedural trauma to the patient, behavioral management was performed using distraction techniques. Distraction techniques are a process of shifting focus or attention from pain to other stimuli. Distraction techniques are used to focus the child's attention so that they ignore the pain. Some well-known distraction techniques in approaching children include visual distractions such as looking at pictures in books, playing video games, and auditory distractions such as listening to music or telling stories, which are also very effective. In this case report, the operator showed the patient a device that was allowed to be held during the extraction procedure. 17

The use of distraction techniques in pediatric dentistry offers several significant benefits for both patients and practitioners. First, the use of pleasant sensory stimuli, such as images, videos, or music, can reduce patient anxiety and fear. Patients, especially children, often experience high levels of anxiety before and during surgical procedures. By focusing their attention on engaging stimuli, anxiety and fear can be effectively reduced, creating a more comfortable and relaxing atmosphere. 21 The distraction technique used in this case report was proven to distract and divert the patient's attention, so that even though the extraction of a maxillary primary molar was considered quite difficult, it proceeded smoothly and without problems. Successful, minimally invasive, and minimally traumatic treatment can increase the patient's desire to return to the dentist and motivate them to maintain good oral hygiene.

Topical anesthesia, which involves applying a specific local anesthetic to the mucous membrane where it can be penetrated to anesthetize superficial nerve endings, can facilitate the smooth use of distraction techniques during tooth extraction procedures. All local anesthetics can anesthetize as deep as 2-3 mm from the tissue surface and can provide an anesthetic effect for 10 minutes when used correctly. Topical anesthetics can be used to reduce pain during needle insertion for patients with low pain tolerance. Topical anesthetics are available in liquid, ointment, and gel forms.

Parenting styles significantly influence their children's dental care. When a patient first visited Maranatha Dental Hospital with her mother, the child was obedient and friendly toward the young dentist, suggesting the parents were authoritarian. An authoritarian parenting style typically promotes obedient, well-behaved, friendly, and polite children. This attitude will likely lead to a child receiving treatment well from the dentist. However, the dentist must remain calm and not increase the child's potential anxiety and remind parents to maintain a neutral attitude (Selawinda, 2022). Therefore, the operator can perform the entire extraction procedure smoothly and quickly. Furthermore, the patient is rewarded for their cooperation during the treatment. Rewards are crucial for increasing patient enthusiasm for future dental visits and motivating them to maintain their oral health.

During the extraction procedure, the operator encountered some issues, such as media interruptions on the device due to advertisements or poor signal, which diverted the patient's attention back to the treatment being performed. However, these issues were quickly resolved with the assistance of the assistant operator, and the patient regained his composure. These issues can also be minimized by using downloaded, seamless video media, ensuring the patient is not distracted during the procedure, or by limiting the duration of the procedure to the duration of the video. Distraction techniques are crucial for ensuring the patient's focus is completely undisturbed, thereby increasing pain tolerance and reducing the level of focus on the procedure.21

After a tooth extraction procedure, appropriate medication is essential to reduce post-extraction pain and improve patient comfort. In young children, the dosage is generally calculated based on the patient's weight. For example, if the patient in the case report weighs 20 kg, the

pediatric paracetamol dosage is 15 mg per kg. Therefore, the 120 mg per 5 ml dosage for the patient in the case is 12 ml, which can be taken three times daily. If ibuprofen is prescribed and the dosage is calculated based on body weight, for a patient weighing 20 kg and an adult ibuprofen dosage of 400 mg, the patient can be given 7.5 ml of ibuprofen syrup at a dose of 100 mg per 5 ml three times daily, as needed.

# CONCLUSION

The importance of behavioral management techniques in primary molar extraction procedures is undeniable. Careful and cautious actions are necessary to ensure optimal results and reduce the risk of trauma after primary tooth extraction. In this case, distraction behavioral management has proven to be an effective approach in addressing patient anxiety and increasing their cooperation during the extraction procedure. Distraction techniques were used before the extraction procedure began, which proved effective in reducing patient anxiety.

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