

ORIGINAL RESEARCH ARTICLE

The Effect of Parental Absence or Presence on Dental Anxiety of Paediatric Patients in Dental Clinic

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Abstract

Purpose: The study aimed to evaluate effect of parental absence or presence on anxiety level of children in dental clinic.

Materials and Methods: 130 children who 6–9 years old were randomly divided into two groups as absence of parents (PA) (n=65) and presence of parents (PP) (n=65). Children in both groups were examined by the pediatric dentist as only clinical and radiographical without any dental treatment on first visit. The primary molars of children in both groups were restored with compomer resin with using the rubber dam on second visit. Before and after the dental procedures The Abeer Children Dental Anxiety Scale (ACDAS) was applied to all participants in both groups. All data were analysed with two sample t test and p value set at <0.05 for significance level.

Results: The mean age of participants was 6.9±1.18 years. The ACDAS score of PP on first visit was significantly lower than ACDAS score of PP on second visit ($p<0.001$). When comparing the mean ACDAS score of PA group, score of second visit with 26.23±1.82 significantly lower than first visit with 28.52±1.96 ($p<0.001$). There were no significant differences between mean ACDAS score of females and males in both groups and visits ($p>0.05$).

Conclusions: According to results of current study, parental absence is efficient method for developing to behaviours of children during the dental procedures such as composite restorations under local anaesthesia in children who 6–9 years old.

Key words: Behaviour management; Dental anxiety; Paediatric patients; Parental absence or presence .

Introduction

Dentists have several hassles about dental treatments of anxious children and adolescents. Especially pediatric dentists should be known about dental, physiological, mental and emotional development of children and adolescents.¹ A disruption in any of these developmental processes can cause anxiety and make dental treatments impossible.² Dental anxiety is a situation of disquiet that harmful applications are going to occurring during the dental treatments. In contrast to this, fear is occurred against to menacing situations as a normal emotional answer.³ Dental anxiety has been recognized as a prevalent situation that mostly observed in childhood and adolescence and is reported in 20–50% of cases. This situation is considered a behavioural disorder of variable nature, ranging from fear or phobia of relatively painful dental applications such as injections to a general anxiety often associated with the dental clinic environment.^{3,4} Researchers have reported that children with high dental anxiety have more decayed, missing and filled teeth.⁵ Behaviour management problems in dental practice are occur as results of dental anxiety, phobia or fear.⁶ This has led to the acceptance of dental anxiety as a negative factor with significant effects on oral health. It is difficult for dentists to distinguish

between phobia and fear, and these statuses are therefore referred to as dental anxiety.⁷

When the planning to dental treatments of children and adolescents, dental anxiety and fear are the most important components for the understanding of the patients' cooperation and behaviour to dental applications.⁶ Studies about that dental anxiety showed that the parental anxiety can affect to children behaviour against to dental treatments.^{8,9} According to cooperation capability of children can be categorised as cooperative, potentially cooperative and lacking of cooperative ability.¹⁰ Existing non-pharmacological techniques for behaviour management can be used for children who cooperative and potentially cooperative except for children who has a lacking of cooperative ability. Terms of lacking of cooperative ability used for children who are young to communication and has particular or total disabilities.^{11,12}

Parents who have a dental anxiety affect to their children negatively. Because of that reason dentists choose to absence or presence of parents in dental clinic when apply to behaviour management techniques to children according to anxiety situation of parents.¹³ Although, absence of parents technique is suitable for children who are four years and older without separation anxiety from parents, it

is not suitable technique for children with disabilities of intellectual and emotional.¹¹ Research about that dental anxiety is based on questionnaires, which are considered the most reliable methods for assessing anxiety in children who have the cognitive ability to self-express their emotions on a scale.^{14–16} The Aberer Children Dental Anxiety Scale (ACDAS) includes cognitive questions and is a valid scale for the measurement of dental anxiety in children over 6 years of age.¹¹ In Turkey, limited studies examined the dental anxiety of parent presence or absence children who between 6 to 9 years old.^{9,17} Because of that reason, studies on the Turkish pediatric patients using a scale including that cognitive questions and Turkish validity has been proven are required to better understand these situations to assist pediatric dentists for behaviour management.¹⁸ The aim of this study was to investigate the effect of parents' presence and absence on children dental anxiety in 6–9 years old Turkish children.

Material and Methods

Study Design and Ethical Considerations

The Helsinki Declaration conducted the study, which was approved by the Institutional Ethical Board of Mehmet Akif Ersoy University (No. GO2023/335).

Determination of Sample Size and Study Design

The significance level for the sample size in the study was regulated to show an effect size of 0.83 with a power of 0.05 and 95%. The number of samples (n) was calculated as 116. However, it was decided that the total number of samples (n) would be 140 with 20% data loss foreseen.

According to American Society of Anaesthesiologists (ASA), ASA1 and ASA2 healthy children who 6–9 years old without any learning and physical disabilities, children who don't need to emergency dental applications, children who can speak and understand Turkish, anxious children who have dental caries that involved only dentine and enamel and were included to this study.^{12,18} Children with any disabilities that physical and mental or without parental consent were excluded from this study. 140 anxious children invited to the study, but 10 children who need to emergency dental treatment were excluded from current study. The study was conducted with the participation of 130 anxious children who met the inclusion criteria.

Collection of Data and Study Procedure

The ACDAS that including three parts as evaluation of child, dental, cognitive and 19 questions was used as a cognitive scale for this study. In the dental part of ACDAS including 13 questions, the children answered these questions using with three types of facial expressions for to show how they felt. All the answers were scored with scale of 1–3. The total scores were ranging between 13 and 39. Children who have score of 26 and above were classified as anxious. The child evaluation and cognitive parts of ACDAS were answered by the pediatric dentist and child's legal guardians. These scores of ACDAS were accepted for master scores (Table 1). Children were examined by the pediatric dentist as only clinical and radiographical without any dental treatment on first visit.

It has been reported that parents may be asked to accompany or not accompany their children during dental treatment. Parents of children who met the inclusion criteria signed informed consent form of this study. In addition to this, ACDAS were applied to all participants for determination of dental anxiety.

All participants were recorded, and their appointments were made by the dental assistant. 130 participants who met the crite-

ria were randomly divided into two groups as absence of parents (PA) (n=65) and presence of parents (PP) (n=65) on the second visit. Parents of PA group were declared to wait in to lobby and not to come in the clinic until they called by the dental assistants. In contrast to this, parents of PP group were declared to participate their children and stay silently during dental treatments. Children in the PA and PP groups were treated with topical anaesthesia (cotton with lidocaine %10 spray) followed by buccal infiltration local anaesthesia (articaine hydrochloride %4) for caries removing of one of the mandibular primary molars. The primary molars of children were restored with compomer resin with using the rubber dam. All children were directed by same pediatric dentist with non-pharmacological behaviour management techniques during the dental treatments such as tell-show-do. At the end of dental treatment on second visit, all participants in PA and PP groups completed to ACDAS for the second time.

Statistical Analysis

All data were analysed with SPSS 22.0 (SPSS for Windows, SPSS Inc, Chicago, IL) and GraphPad Prism software 7.0 for Windows (Graph-Pad Software, San Diego, California, USA). The sample size of the study was calculated with G-Power (version 3.1.9.7, Heinrich-Heine-Universität Düsseldorf, Germany). Calculation of the normality of the data was using with Kolmogorov-Smirnov test and followed by parametric tests. All data showed normal distribution. Standard deviation (SD) and mean values were shown with numerical variables. Categorical variables were shown with percentages. Two sample t-test were performed for comparing the differences between mean ACDAS score of PA and PP groups and comparing the differences between mean ACDAS score of girls and boys.

Results

The descriptive analysis of participants shown in Table 2. The minimum and maximum ages of children were 6 and 9 respectively and mean age was 6.9 ± 1.18 years. The mean ACDAS score of girls and boys on first visit were 28.01 ± 1.69 and 28.15 ± 1.79 respectively. When comparing the mean ACDAS score of girls and boys, there were no significant differences ($p = 0.659$). The statistical analysis of mean ACDAS score of both groups shown in Table 3. There were no significant differences between mean ACDAS score of PA and PP groups on first visit ($p = 0.079$). The mean score of ACDAS in PA was significantly lower than the PP group on second visit ($p < 0.001$). The mean ACDAS score of PP in first and second visit was 28.01 ± 1.21 and 29.07 ± 1.98 respectively. The ACDAS score of PP on first visit was significantly lower than ACDAS score of PP on second visit ($p < 0.001$). The mean ACDAS score of PA on first and second visit were 28.52 ± 1.96 and 26.23 ± 1.82 respectively. When comparing the mean ACDAS score of PA group on first and second visit, mean ACDAS score of PA group on second visit significantly lower than first visit ($p < 0.001$). The mean ACDAS score of girls and boys on second visit were 27.55 ± 2.33 and 27.76 ± 2.44 respectively. There were no significant differences between mean ACDAS score of boys and girls on second visit ($p = 0.618$). Like these results, there were no significant differences between mean ACDAS score of both genders on first and second visit (p value for girls $p = 0.187$, p value for boys $p = 0.329$) (Table 4).

Discussion

The children who included in this study were 6–9 years old. The main reason of the selection of these ages was based on previous studies about that dental anxiety.^{19–21} These studies have reported that the level of dental anxiety in children increases, especially between the ages of 6–9. Children between the ages of 6 and 9 show

Table 1. The Abeer Children Dental Anxiety Scale (ACDAS)

| A. DENTAL PART OF ACDAS How Do You Feel about | Happy (Score 1) # | OK (Score 2) # | Scared (score 3) # |
|--|-------------------|----------------|--------------------|
| 1. Sitting in the waiting room? | | | |
| 2. A dentist wearing a mask on his face? | | | |
| 3. Laying flat on the dental chair? | | | |
| 4. A dentist checking your teeth with a mirror? | | | |
| 5. Having a strange taste in your mouth? (from filling material or gloves) | | | |
| 6. Having a “pinch” feeling in your gum? | | | |
| 7. The feeling of numbness (fat lip or tongue)? | | | |
| 8. A dentist cleaning your teeth by buzzy electric arm that is spraying water? | | | |
| 9. The sounds that you hear at the dentist? | | | |
| 10. The smell at the dentist? | | | |
| 11. Having a tooth taken off? | | | |
| 12. Wearing a small rubbery mask on your nose to breath special gas to help you feel comfortable during treatment? | | | |
| 13. Having a “pinch” feeling on the back of your hand? | | | |
| B. THE COGNITIVE PART | | | |
| 14. Do you feel shy at the dentist? | 1. Yes | 2. No | |
| 15. Do you feel shy because of the way your teeth look? | 1. Yes | 2. No | |
| 16. Are you worried about losing control at the dentist? | 1. Yes | 2. No | |
| C. THE CHILD ASSESSMENT | | | |
| <i>For legal guardian:</i> | | | |
| 17. Has your child previous dental treatment? | 1. Yes | 2. No | |
| 18. How do you expect your child’s behaviour today? | 1. Happy | 2. Ok | 3. Scared |
| <i>For Operator:</i> | | | |
| 19. At the end of this visit, what is your rating for child’s behaviour? | 1. Happy | 2. Ok | 3. Scared |

Adapted from Al-Namankany et al. ¹².

Table 2. Descriptive analysis of participants

| Variables | |
|--------------------------------------|-----------|
| Gender, n (%) | |
| Girls | 70 (53.8) |
| Boys | 60 (46.2) |
| Total | 130 (100) |
| Age, mean± SD | 6.9±1,18 |
| Parents absence group, n (%) | |
| Girls | 36 (55.3) |
| Boys | 29 (44.7) |
| Total | 65 (100) |
| Parents presence group, n (%) | |
| Girls | 34 (52.3) |
| Boys | 31 (47.7) |
| Total | 65 (100) |

Abbreviation: SD, standard deviation

Table 3. Comparison of average ACDAS score of groups in first and second visits

| | Score of First Visit, (mean± SD) | Score of Second Visit, (mean± SD) | *p-Value |
|------------------------|----------------------------------|-----------------------------------|----------|
| Parents Absence Group | 28.52±1.96 | 26.23±1.82 | <0.001 |
| Parents Presence Group | 28.01±1.21 | 29.07±1.98 | <0.001 |
| #p-Value | 0.079 | <0.001 | |

Abbreviation: SD, standard deviation

*p-value of two sample t-test of intragroups in first and second visits

#p-value of two sample t-test of intergroups in first and second visits

a rapid development in mental skills and can more effectively describe their good or bad experiences and emotions. ²² The younger children don’t have any cognitive ability about describing their good or bad experience and emotions. ²³

The ACDAS that has been tested reliability and validity in Turkish was selected for this study. ¹⁸ This scale allows to evaluate the emotional and physical behaviours of children for promote to better

Table 4. Analysis of average ACDAS score of genders in first and second visits

| | Score of First Visit, (mean± SD) | Score of Second Visit, (mean± SD) | *p-Value |
|----------|----------------------------------|-----------------------------------|----------|
| Female | 28.01±1.69 | 27.55±2.33 | 0.187 |
| Male | 28.15±1.79 | 27.76±2.44 | 0.329 |
| #p-Value | 0.659 | 0.618 | |

Abbreviation: SD, standard deviation

*p-value of two sample t-test of intra-genders in first and second visits

#p-value of two sample t-test of inter-genders in first and second visits

understanding of dental anxiety. The most important advantage of this scale is that it allows the child to answer questions with choosing one of three faces. In addition to this, the ACDAS as a scale can evaluate to anxiety with answers of child, dentist and parents or legal guardians. ¹¹

Presence or absence of parents have been discussed in previous studies and it has been reported that this situation will provide benefits before treatment and has no advantage over other behaviour management techniques during treatment. ²⁴⁻²⁶ Additionally, the presence or absence of parents as a behaviour management technique is recommended to be applied by pediatric dentists. ²⁴ In according to results of current study, children whose parents were absent in dental clinic were more motivated for dental treatments. The reason for this may be that behaviour management techniques are applied by a pediatric dentist who is an expert in this field. To eliminate the effect of complex factors, parents of PA group were declared to wait in to lobby before the dental treatment and not to come in the clinic until they called by the dental assistants. The application of parents absence and presence accompanying behaviour management techniques (tell-show-do) were made correlatively previous studies. ^{11,24,26}

Ahuja et al. ²⁷ showed that there are no significant differences between parent absence and presence technique when performing the dental treatments on children. In addition to this, authors reported that anxious parents may affect negatively to anxiety level of their children during dental treatments. ^{8,9} Cox et al. ²⁸ reported

that the anxiety level of children who in the parent absence group significantly lower than the children who in the parent presence group during the dental treatments. The results of current study show that the anxiety levels of children whose parents are not in the clinic were statistically significantly lower than children whose parents are in the clinic and were like the results of this previous study ($p < 0.001$).²⁸ A limited number of studies have been found on this subject on Turkish population.^{9,17} However, there were studies investigating the effect of parents' attitudes on children's dental anxiety. While some of these studies reported that parents' anxiety negatively affected children, others reported that parents' anxiety had no effect on children.^{29–31} Yigit et al.⁹ reported that parents, especially those with dental anxiety, who were in the clinic during dental procedures negatively affected their children compliance with treatment. Parents who have dental anxiety may affect to their children negatively with frightening words and behaviours during dental procedures. Pediatric dentists are aware of this situation and may prefer that anxious parents not be in the clinic during treatment. However, when pediatric patients who younger than 4 years are being treated, the presence of parents in the clinic silently and not being active can affect children's compliance with treatment positively.³¹ Parents especially mothers generally want to stay in dental clinic with their children during the procedures.³² Because of that reason, when choosing participants, most of parents who are interviewed for current study didn't accept include to current study. When the differences between genders were evaluated, the difference between dental anxiety of girls and boys in all groups on first and second visit were like the results of previous studies about this subject (p value for girls $p = 0.187$, p value for boys $p = 0.329$).^{11,24,33}

The current study has a salient positive aspect. Dental anxiety of children was evaluated with cognitive scale that to measure anxiety by answer of children, parents and dentist. According to the limitations of current study, children's previous dental experience who include in the study were not evaluated. This situation may relate with anxiety and negative behaviour of children in dental clinic. However, all participants of this study had dental anxiety. The main objective of this study was to evaluate the effect parental absence and presence on dental anxiety of children, but dental anxiety of parents was not evaluated in this study. The next step may be adding the part of that including the evaluating the parental dental anxiety part to further studies.

Conclusion

It is important for any clinician caring for children especially pediatric dentists to understand when to use parents absence–presence technique effectively because it appears to have an important role in completing the required service. Parental absence or presence could be efficient procedure for to increase the motivation and cooperation of children towards dental practices. In the lights of results of current study, using of parents absence–presence technique in children who 6–9 years old is efficient method for developing to behaviours of children during the dental procedures such as composite restorations under local anaesthesia.

Author Contributions

H.T. conceived the ideas; H.T. collected data; H.T. analysed the data; H.T. led the writing; H.T. writing and editing of the final manuscript.

Conflict of Interest

The author declares no conflict of interest concerning the authorship and publication of this article.

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