Parental presence versus absence in the dental operatory: a technique to manage the uncooperative child dental patient

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ABSTRACT. Aim Societal changes have led to an increased parental presence in paediatric dental surgeries. The aim of this study was to assess the deliberate use of a parental presence/absence (PPA) intervention as a behavioural technique to manage very uncooperative children. Study design This is a retrospective study of the PPA technique in a Greek paediatric dental practice. Methods Practice patient records were examined over a six year period, during which time Frankl behaviour ratings were made for each patient. At the initial dental visit, 85 otherwise normal healthy children were found to be very uncooperative (Frankl score of definitely negative); 46 female and 39 male, mean age 4.6±1.5 yrs (range 2.7-8.8). Their parents stepped out of the operatory and returned after the child became cooperative. These children were compared with 85 randomly selected cooperative children, matched for age and gender. Statistics A one sample binomial test was used to assess the technique’s success, while \( \chi^2 \) and t-tests were used for between group comparisons of proportions and means, respectively. Results Seventy-four out of the 85 initially uncooperative children displayed Frankl positive behaviour as the initial appointment progressed, while 6 children remained uncooperative during the first appointment but were cooperative at following visits. The total technique success was 80/85 (94%, \( p<0.001 \)). The two groups differed significantly with regards to control in caries scores (frequency 77.6% with 12.2 ± 11.8 dmfs as opposed to 54.1% with 6.7±5.7 dmfs), and in parent’s awareness of patient dental needs or symptoms (76 vs 52). There was no significant difference between groups with regards to completing the treatment planned (63/80 vs 75/85). There was no significant difference in the proportion of returning children who displayed uncooperative behaviour in subsequent visits. Conclusions The PPA technique can be successful in gaining the cooperation of children displaying very negative behaviour, thus minimising the need for other more aversive techniques.

KEYWORDS: Behaviour management techniques, Uncooperative child dental patient, Parental presence.

Introduction

Dental fear is the main cause leading to dental behaviour management problems (DBMP) in paediatric dentistry. Children’s fear is related to conditioning experiences and/or to personality factors such as shyness and negative emotionality [reviewed in Klaassen et al., 2003] or having a so-called ‘strong-willed’ temperament [Forehand and Long, 1999]. The paediatric dentist is likely to encounter such children quite frequently. For example, a study of 421 child patients seen in 21 private paediatric dental practices in Washington State, USA, found that dental fear and uncooperative behaviour occurred in 20% and 21% of the patients, respectively [Baier et al., 2004].

When at least some verbal communication exists between the dentist and fearful patient, overcoming DBMP may be achieved through various behaviour management techniques, such as ‘tell-show-do’ or teaching a form of control such as raising the left hand to signal the dentist to stop [Chapman and Kirby-Turner, 1999; AAPD, 2003]. However, when the child’s behaviour has deteriorated to the point where verbal communication is no longer possible, these techniques cannot be used.

A number of reports in the literature, summarised by Fenlon et al. [1993], have explored the effect of having
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the parents in or out of the dental surgery. While some authors favour parental presence for the very young child’s first visit, others find no preference for presence or absence for the school-aged child, while still others favour the parent’s absence. Some studies have used random assignment (parental presence vs. absence) to explore this question. Fenlon et al. [1993] studied children aged 4-12 years at their initial visit for examination and prophylaxis. Although there was a trend for children to behave less cooperatively when separated from their parents, this was not significant. The younger children behaved significantly more negatively than the older ones. Marzo et al. [2003] studied 3-8 year olds at their first dental visit, also for dental examination and prophylaxis only. In this sample, children whose parents were out of the operatory were significantly more likely to be cooperative. It should be noted that the children in both studies received only examination and prophylaxis; that is, nonpainful treatment. On the other hand, Pfefferle et al. [1982] studied the behaviour of 3-5 year old children who were cooperative at their initial dental appointments and at two follow-up appointments for restorations. In this sample, parental presence or absence was not significantly related to the children’s behaviour. As this study excluded children who were not cooperative at their initial visit, it is not known how these children might have responded to the experimental condition.

Despite the mixed evidence regarding the usefulness of parental presence or absence in improving patient cooperation, there is a clear trend for parents these days to be increasingly present, especially those of younger child patients [Kamp, 1992; Arathi and Ashwini, 1999; Crossley and Joshi, 2002; Adair et al., 2004]. It is evident that the dental profession is adapting to this change, and dentists who previously had routinely excluded parents are now more likely to include them [Marcum et al., 1995]. Possible reasons why parents are increasingly present include: younger children are being seen [McWhorter et al., 2001], dentists are utilizing more preventive approaches to prevent and control child dental disease, requiring increased parental involvement [Goepferd and Garcia-Godoy, 2004], and parents themselves are increasingly requesting that they be present [Peretz and Zadik, 1998; Crossley and Joshi, 2002].

Fearful patients may find their parent’s presence reassuring, and therefore may be more likely to communicate with the dentist. However, if a child becomes uncooperative, the parent’s presence and attempts to soothe the child may reinforce the maladaptive behaviour. It is for this reason that parents of uncooperative children may be asked to leave the surgery. Following the establishment of communication, the parent is invited in again. Thus, contrary to children’s prior learned behaviour that the parent approaches when the child cries (reinforcing the crying), the parent’s presence is used to the dentist’s advantage by becoming a reward and positive reinforcement to the child’s improved cooperation. Informal discussions suggest that this parental presence/absence (PPA) technique may be in widespread use in paediatric dentistry, but it has attracted little formal attention and is not listed among other behaviour management techniques [AAPD, 2003].

Given that parents are increasingly present in the surgery, it might be helpful for dentists to capitalize on that presence. This paper describes the deliberate use of PPA to improve child cooperation in one dental practice. The aim of this study was to assess the relative success of the technique, as well as certain child parameters associated with its use, in anticipation of a prospective study in which use of the technique could be compared with a control condition.

Materials and methods

Sample. The records of patients were reviewed over six consecutive calendar years (1998-2003) in a part time private paediatric dental practice of an academic paediatric dentist (NK), located in the city of Thessaloniki, Northern Greece. A considerable number of patients with behaviour management problems are referred to this practice by general dentists. In this practice, Frankl ratings of patient cooperation [Frankl et al., 1962] were routinely made and recorded for all normal children seen at about 3 year of age or older. The Frankl scale rates children as displaying either definitely negative (score = 1), negative (score = 2), positive (score = 3) or definitely positive (score = 4) behaviour. These ratings were made for each aspect of a child’s dental treatment.

No invasive techniques (such as physical restraint or hand over mouth) were used in this practice during the time of the study. A total of 1,510 child patients were seen for initial visits during this period, of whom 86 (5.5%) displayed clearly uncooperative behaviour (Frankl ratings of 1, or definitely negative) during their first visit and subsequently received the PPA technique. There were 46 girls and 40 boys of mean age 4.6±1.5 years (range 2.7-8.8 years) in this uncooperative group. All healthy children exhibiting cooperative behaviour (Frankl ratings of 3 or 4) at the first visit from the remaining pool of patients were
stratified by age and gender and a random sample was drawn to age/sex/race match the subject characteristics of the uncooperative group as closely as possible. The control group consisted of 85 children (45 girls and 40 boys), mean age 4.7±1.3 years (range 2.6-8.4 years).

Data collection. Data were extracted from patients’ dental records. The data included age, sex, reason for dental visit, caries experience (clinical recording of dmfs, DMFS), whether or not the treatment plan was completed, patient behaviour during segments of each session, and response to the first subsequent recall appointment notification card.

Behaviour rating. As noted above, Frankl ratings were routinely made for each dental procedure. For the needs of the present study, the Frankl ratings made for the treatment segments performed after the parents returned to the operator during the first dental visit, were assessed as well as the ratings made at the child’s subsequent visits.

Technique application. At the beginning of each appointment, the parent was always asked to initially remain in the surgery as a silent observer, allowed to hold their child’s hand if required. The parent and child were both informed, in an empathic way, that the parent might be asked to leave the room if the child became uncooperative, and remain outside until the child became cooperative again. The message was worded to age-appropriate level as follows [Rayman, 1987]: «We welcome parents in, but I expect you to help me; if there is anything bothering you, please raise your left hand to make me stop it» [thus offering control]. «If instead you cry without letting us know why, we are very sorry to ask your mum to wait outside until you raise your hand. This is because children cry more when mum is near».

Following this explanation of the technique, the parent was asked to give oral consent. If negative behaviour occurred, the parent was then asked to leave the surgery. The operator tried to establish communication to the child by sending calm, short messages to the child, such as: «Would you like your mum/dad in?», asked in between a child’s bouts of crying. The defiant child’s attention was attracted and communication to the child by sending calm, short messages to the child, such as: «Would you like your mum/dad in?», asked in between a child’s bouts of crying. The defiant child’s attention was attracted and

Statistical analysis. Data analyses were computed with SPSS Version 10 for Windows. Chi-square (χ²) was used to compare proportions (reasons for attendance, visual evidence of caries, response to recalls, treatment completion and behaviour at subsequent appointments) and a two-sample t-test was used to compare mean dmfs values between the two groups. A one sample binomial test was used to compare the proportion of children in the DBMP sample whose behaviour improved and those whose behaviour remained negative. The observed significance level (p value) of the non-parametric tests (χ², binomial) was computed by Fisher’s exact method. A level of significance of 0.05 was employed in all tests.

Results
The parents of the 86 patients of the PPA group had been asked to give oral consent and all consented. However, the mother of one boy subsequently refused to leave the surgery when requested; therefore, this child was excluded from the study. As a result, data were computed for the remaining 85 children in the uncooperative group, and 85 children in the control group. Among the uncooperative group, 82 returned to the dentist between 2 and 9 times according to their treatment plan, while the remaining 3 remained uncooperative in the only session they were seen and were thus included in the ‘failed’ cases.

There were no significant age or gender differences between the two groups. With regards to the reasons for attendance, 76 (89.4%) patients and/or their parents of the PPA group were aware of dental needs (decayed teeth, pain, oedema, dental trauma), while only 9 (10.6%) had come for check ups. The comparable values for the control group were 52 (61.2%) and 33 (38.8%), respectively. These differences were statistically significant (χ²=18.214, df=1, p<0.001). Caries was clinically recorded, prior to radiographic examination, in 66 (77.6%) patients of the PPA group, with these children having a mean dmfs of 12.2 (±11.8). In the control group, 46 (54.1%) had caries evident before radiographs (mean dmfs = 6.7 ±5.7). Both caries frequency and dmfs values were significantly higher in the uncooperative group (χ²=10.468, df=1, p=0.002 and t = 3.278, df=110, p=0.002 respectively).

Seventy-four out of the 85 PPA children, who had presented initially with Frankl 1 (definitely negative) ratings, responded to the technique by displaying positive behaviour as the initial visit progressed. Six additional children remained negative during the first
session, but were positive at the following visits. Two children remained negative during both the initial and follow-up visits, while three remained uncooperative during the first visit and subsequently did not return. Thus, the PPA technique had a successful outcome in 80 out of 85 (94%) initially uncooperative children, which was statistically significant by the binomial test ($p < 0.001$).

Treatment plans were completed for 63 (78.8%) of the 80 initially uncooperative patients in whom the technique was proved effective, compared with 75 (88.2%) of the 85 control group patients. This difference was not statistically significant ($\chi^2=2.709$, df=1, $p=0.140$).

Overall, 82 out of 85 children in the PPA group returned for at least one additional appointment during the course of the study, as did 79 out of 85 in the control group. The difference was not statistically significant ($\chi^2=3.109$, df=1, $p>0.05$). Nineteen children in the PPA group and 9 in the control group received a Frankl score of 1 or 2 (negative) in at least one treatment segment in the additional appointments. This difference was not significant ($\chi^2=3.874$, df=1, $p>0.05$).

Regarding response to recalls, 49 (61.2%) out of the 80 patients who responded to the technique and 62 (72.9%) out of the 85 control patients paid at least one recall visit within a year. This difference was not significant ($\chi^2=2.559$, df=1, $p=0.150$). Behaviour rating at first recall examination did not differ between the two groups, positive/negative ratio being 46/3 and 57/5 for PPA and control patients respectively ($\chi^2=0.001$, df=1, $p>0.05$).

**Discussion**

In this retrospective study, 94% of roughly 3-8 year olds who displayed very uncooperative Frankl 1 (definitely negative) behaviour during their first dental visit, altered their behaviour to cooperative after the PPA technique was applied.

These results are similar to those reported recently by Arnrup et al. [2003], who recorded success with approximately 90% of the uncooperative children referred for treatment; however, their behavioural management techniques were supplemented by the use of nitrous oxide/oxygen inhalation sedation in 63% of the cases.

Varpio and Wellfelt [1991] studied fearful children, and were able to treat about half of them with behavioural management alone; another 25% required sedation, while the remaining required treatment under general anaesthesia.

In terms of overall success, the PPA technique appears to yield results similar to other methods. Most notable, however, is that the PPA technique was able to result in cooperation without the use of psychopharmacological agents.

Children who undergo more stressful or painful dental procedures can be expected to show, on average, more negative behaviour as measured by the Frankl scale. In this study, children in the PPA group were more likely to present for dental needs, as opposed for check ups, indicating that their treatment plans were more likely to include heavier restorative or other invasive procedures, compared with those in the control group.

From this it could be surmised that the appointments following the first one would also be more likely to include such painful or stressful procedures for the children in the PPA group. Nevertheless, the PPA children did not display significantly more negative behaviour in subsequent appointments, compared with the control children, and measured both at all subsequent appointments throughout carrying out the treatment plan and also at the first recall visit. This indicated that the communication gains made by the formerly uncooperative children were carried over into successive appointments, consistent with learning theory.

The primary drawback of the study is that it was not a controlled experiment. While the technique appears promising, it is not known whether it is the technique itself, or other non-specific factors, such as the manner in which the dentist delivered it, which contribute to its success.

**Conclusion**

This retrospective study described how an empathic application of a PPA technique was successful in achieving the cooperation of initially very uncooperative child patients in a Greek paediatric dental practice.

In most cases, the cooperation was evident by the end of the first appointment. In addition, the majority of children remained cooperative in subsequent appointments, despite the likelihood that they underwent stressful or painful dental procedures. Future studies should examine the technique’s efficacy using a prospective controlled design.

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References