Submitted: 12 October, 2022 Accepted: 29 December, 2022 Published: 03 July, 2023 DOI:10.22514/jocpd.2023.033

ORIGINAL RESEARCH

Journal of Clinical Pediatric Dentistry

Assessment of parental acceptance towards different non-pharmacological behaviour management techniques in pediatric dental care—a cross-sectional study

Rizwan Qureshi[1], Azhar Iqbal[2], Mahnoor Khan[1], Alzarea K. Bader[3], Muhammad Nadeem Baig[4], Krishna Rao[4], Gharam Radhi A. Alanazi[5], Tymma Ayub[1], Sehar Rizwan[1], Muhammad Musa Cheema[1], Saqib Sarfarz[1], Rakhi Issrani[4,*], Osama Khattak[2]

[1]Department of Operative Dentistry, Rawal Institute of Health Sciences, 45551 Islamabad, Pakistan
[2]Department of Conservative Dentistry, College of Dentistry, Jouf University, 72388 Sakaka, Kingdom of Saudi Arabia
[3]Department of Prosthetic Dental Sciences, College of Dentistry, Jouf University, 72388 Sakaka, Kingdom of Saudi Arabia
[4]Department of Preventive Dentistry, College of Dentistry, Jouf University, 72388 Sakaka, Kingdom of Saudi Arabia
[5]College of Dentistry, Jouf University, 72388 Sakaka, Kingdom of Saudi Arabia

***Correspondence**
dr.rakhi.issrani@jodent.org
(Rakhi Issrani)

Abstract

It is imperative to manage children with empathy and concern for their well-being in order to carry out any dental procedure smoothly. Owing to the inherent fear of dental operatory, behaviour management of children is an important aspect of pediatric dental care. Many techniques are available to help manage the behaviour of children. It is, however important to educate parents about these techniques and to get their cooperation for these techniques to be used on their children.This study aimed to familiarize the parents with non-pharmacological behavior management techniques and to determine the parental acceptance of such techniques in children seeking dental treatment in specialty care dental units. A total of 303 parents were evaluated through online questionnaires in this research. They were shown videos of randomly selected non-pharmacologic behaviour management techniques including tell-show-do, positive reinforcement, modelling and voice control. Parents were asked to watch the videos and give their response on seven-items inquiring about their acceptance levels regarding the respective techniques. The responses were recorded on a Likert scales ranging from strongly disagree to strongly agree. According to parental acceptance score (PAS), positive reinforcement was the most accepted technique whereas voice control was the least acceptable technique. Majority of the parents were more receptive towards those techniques that involved a healthy and friendly communication between a dentist and the pediatric patient such as, positive reinforcement, tell show do and modelling. Most significantly the people having low socio-economic status (SES) in Pakistan were more acceptable of voice control than people with high SES.

Keywords

Behaviour management; Dental care; Pediatric; Parental acceptance

1. Introduction

Behavior management is a mainstay of effective treatment in pediatric patients. The level of cooperation and compliance with instructions from the treating pediatrician directly influence the quality of any dental procedure performed [1]. Dental anxiety and fear have been reported to be the two major barriers preventing patients from accessing dental health service and are intimately related to general anxiety/fear, sensory over-responsivity, and oral health behaviors and outcomes. It is important to be aware of these factors as they may add to the problems faced in the dental clinic [2]. A recent systematic review had suggested a global pediatric dental anxiety rate of 23.9% and the reported prevalence for preschool children was found to be as high as 36.5%, while that for school going children was reported to be 25.8% [3].

Keeping anxious pediatric patients calm and efficiently managing dental needs for such children is reported to be a highly challenging task [3]. Moreover, dental anxiety leads to high unmet dental needs among children, negatively impacting the oral health related quality of life. The pain and discomfort associated with inability to provide appropriate treatment leads to children taking days off from school, affecting their studies and social grooming as well [4].

Managing dental anxiety in the clinical setting involves pharmacological and non-pharmacological interventions [5]. Pharmacological methods are found to be more aggressive including general anesthesia, chairside sedation and relative analgesia. However, non-pharmacological behavioral management techniques involve strategies that aim to cognitively

modify the patient's behavior [5].

The American Association of Pediatric Dentistry (AAPD) defined behavioural management as "a continuum of interaction involving the dentist and dentist team and the patient, directed toward communication and education while ensuring the safety of both oral health professionals and the child, during the delivery of medically necessary care" [6].

Several different behavioral management techniques (BMT) have been advocated in literature. In order for the dentist to employ any BMT on a child, obtaining written informed consent from the parents is mandatory. Thus, it is of utmost importance that the parents understand the merits of using these techniques and the complications of pharmacological interventions that would have to be used if the child cannot be managed through BMT [7].

Parental attitude towards their child's conduct at the dental office may be influenced in several ways. Thus, a positive experience on a dental chair is the stepping stone for achieving successful oral health care. Early precautionary measures can lead to better oral health and fewer chances of dental disease. Thus, less treatment needs arise leading to less chances of emotionally traumatic dental experiences [7].

One of the reasons of parental reluctance to bring their children for routine dental check-ups is economic hardships. Parents are unable to afford multiple visits to dentist owing to the loss of days at work. It leads to failure of getting an opportunity to know about the simple techniques available for timely pediatric dental care [7]. Havelka *et al*. [8] examined the effect of parental social status in acceptance of behavioral management techniques and found that parents from high socio-economic differences had higher acceptances rates than their counterparts from low socio-economic strata.

The choice of BMT is not made by the dentist alone. The consent of the child and parents is equally important [9]. Past dental experiences of parents may influence the child's behavior adversely affecting the attitude and response of children towards dental treatments [10].

Parental attitudes and acceptance rates may vary in different cultures. There is no published study in Pakistan reporting the parental acceptance of different BMTs. Therefore, the present study aimed to educate and assess the parental acceptance regarding tell-show-do, positive reinforcement, voice control and modelling BMTs.

2. Null hypothesis

There is no significant difference between parental acceptances of various non-pharmacological behavior management techniques.

3. Materials and methods

3.1 Study design

This was a cross-sectional, questionnaire-based study.

3.2 Study duration

Data was collected during the month of July 2021 to October 2021.

The sample size was 303 participants which were calculated by using World Health Organization sample size calculator with confidence level of 95%.

3.3 Data collection

Parents of children aged below 13 years of age visiting Rawal Institute of Health Sciences RIHS were asked to participate in the study. Google Forms were shared with the participants on social media platforms mostly Facebook and WhatsApp. Printed hard copies of the questionnaires were also sent to different offices of Islamabad. The participants were selected using convenience sampling. Those parents who consented to participate in this study were shown the videos on mobile phones and were asked to fill out the questionnaires after obtaining a written informed consent. The parents were shown videos of randomly selected non-pharmacologic behaviour management techniques namely tell-show-do, positive reinforcement, modelling and voice control.

The questionnaire was divided into two sections. "Section A" inquired about parental acceptance regarding the four different BMTs and "Section B" gathered recipient information. Before asking about the parent's acceptance of each BMT, a video displaying the technique was uploaded to the Google Forms page. Since the videos already present online regarding different BMT were subject to copyright, we made our own videos for each BMT. In order to validate the videos, they were shown to two specialists. Modifications were made to the videos in light of the suggestions made by the specialists. The language for each video was kept as Urdu since this is the national language of Pakistan. The duration of each video was about 40 seconds.

After seeing the video, the participants were asked to give their responses on eight-items inquiring about their acceptance levels regarding the respective technique. The responses were recorded on a Likert scale ranging from "Strongly Disagree" to "Strongly Agree". These eight items were taken from a validated instrument by the thesis submitted in partial fulfilment of the requirement for the degree of Master of Teaching and learning in the University of Canterbury by Lawrence Walker 2009 [11].

3.4 Statistical analysis

Data was entered and analyzed by using Statistical Package for the Social Sciences (SPSS) version 20.0 (IBM Corp., Armonk, NY, USA). Frequencies and percentages were described for categorical variables, such as gender, monthly income and location. Mean and standard deviation were described for numerical variables, such as parental acceptance score (PAS). Independent sample t-test was used to compare the PAS between the two genders. In order to compare the PAS between different SES, one-way Analysis of Variance (ANOVA) was applied. In case of any significant result, inter-mean group differences were analyzed by conducting the post-hoc Tukey analysis. The level of statistical significance was set at $p \leq 0.05$.

4. Results

A total of 303 parents participated in the study. Out of these participants, there were 165 (54.5%) females and 138 (45.5%) males. The majority of the participants were either from Islamabad (n = 127, 41.9%) or Lahore (n = 67, 22.1%). Most of the parents (n = 90, 29.7%) belonged to the group of 20–30 years. The monthly income for majority of the participants (n = 125, 41.4%) was less than Rs. 50,000. The characteristics of the participants have been illustrated in (Table 1).

PAS were calculated by adding the individual responses for the seven items, thereby having a maximum score of 35. Positive reinforcement had the greatest PAS (27.17 ± 4.71), followed by tell-show-do (27.01 ± 4.54), modelling (26.76 ± 5.94) and voice control (23.47 ± 7.16).

There was no difference in the PAS for any of the techniques between male and female parents (Table 2). The higher SES was found to have a significantly lower PAS as compared to the lower SES (Table 3).

The inter-group mean differences were calculated for Voice Control since the ANOVA calculated significant results for the PAS of Voice Control (p-value = 0.006). The PAS for Voice Control was significantly greater for low SES as compared to the high SES (p-value = 0.004) (Fig. 1).

TABLE 1. Frequency of participants' characteristics (n = 303).

Characteristic	Frequency (%)
Gender	
Male	138 (45.5)
Female	165 (54.5)
Location	
Islamabad	127 (41.9)
Lahore	67 (22.1)
Karachi	32 (10.6)
Gujrat	32 (10.6)
Quetta	23 (7.6)
Peshawar	22 (7.3)
Parent's age (years)	
20–30	90 (29.7)
31–40	86 (28.4)
41–50	51 (16.8)
More than 50	76 (25.1)
Monthly income	
Less than Rs. 50,000	125 (41.4)
Rs. 50,000–100,000	94 (31.1)
More than Rs. 100,000	83 (27.5)

5. Discussion

For children dental anxiety is the primary hurdle in not seeking dental care. It needs to be addressed efficiently as the famous axiom goes "a stich in time saves nine". An in-depth assessment can make the difference between a pleasant and a nerve-racking experience for the children as well as their parents at a dental clinic. The present study provided the parents with an opportunity to familiarize themselves with special tools available to cater for the specific needs of their children [12].

The success of any pediatric dental treatment is contingent on the child's cooperation level. Behavior management plays a key role in successful management of pediatric cases. Most of the parents are unaware of the presence of non-pharmacological techniques offered for this purpose and when confronted with such a situation find it difficult to make well informed decisions. Therefore, dentists treating pediatric patients should increase the cooperation level of the patients by applying various behavior guidance techniques [12].

In this study, positive reinforcement has been widely accepted by the parents because of the praise and rewards granted to their children associated with this technique and the result is in agreement with the study carried out by Peretz B *et al*. [13]. Tell-show-do was the next most accepted technique in this study. Since the dentist explains each step to the children and shows them in a way that makes them more comfortable. Similar findings were noted in a recent study conducted by Shukla H *et al*. [12] and Seangpadsa K *et al*. [14].

Voice control was the least accepted technique in this study. Parents may not be quite comfortable with a dentist talking to their child in a loud tone and thus, the reported less acceptance levels. Same results could be seen in the study conducted by Acharya *et al*. [15].

Interestingly, the parents of low SES had significantly higher PAS for voice control as compared to their counterparts from high SES (p-value = 0.004). This suggests that parents from low SES are willing to let the dentist use Voice Control as long as their child's treatment is completed probably from the fear of losing days at work. On the other hand, parents from the high SES would rather have the dentist use other BMTs for treating their child.

The strength of the study is that a diverse group among the Pakistani population was included from all walks of life. It was tailored according to the understanding of the local population and customized videos were made. The limitations of this study are that it was conducted on a relatively small sample and also hard copies were circulated among the parents of Islamabad only. Future studies should focus on encompassing a wider area, so that a more representative sample of Pakistan may be included. It is recommended that educational level of parents may also be taken into account that may have an impact on choice and understanding of various BMTs.

6. Conclusions

Non-pharmacological BMTs were generally found to be well accepted by parents and they preferred more positive approaches demonstrated to them beforehand. However, they were not very comfortable with voice control being used on their children. The most significant finding of the study was that parents from the higher SES reported a greater hesitancy towards the use of voice control for their children as compared to the parents from low SES probably due to inability to afford multiple visits to the dentist.

TABLE 2. PAS for gender and socio-economic class.

Behavior management techniques	Gender		*p*-value	Socio-economic status			*p*-value
	Male (Mean ±SD)	Female (Mean ± SD)		Low (Mean ± SD)	Middle (Mean ± SD)	High (Mean ± SD)	
Tell-show-do	27.26 ± 4.31	26.80 ± 4.65	0.399	26.94 ± 4.52	27.54 ± 4.18	26.58 ± 4.80	0.364
Positive reinforcement	27.22 ± 4.93	27.06 ± 27.06	0.783	27.10 ± 4.68	27.03 ± 5.32	27.30 ± 4.18	0.930
Modelling	26.72 ± 5.49	26.71 ± 5.39	0.809	27.32 ± 4.73	26.88 ± 5.71	25.64 ± 5.98	0.088
Voice control	23.05 ± 7.28	23.66 ± 7.00	0.456	24.67 ± 6.32	23.48 ± 7.31	21.44 ± 7.64	0.006*

** Statistically Significant, SD: Standard Deviation.*

TABLE 3. Difference of Voice Control PAS between different socio-economic classes (n = 303).

Reference class	Comparison class	Mean difference	*p*-value
Low SES	Middle SES	1.18 + 0.96	0.434
	High SES	3.23 + 0.99	0.004*
Middle SES	High SES	2.04 + 1.06	0.131

**Statistically Significant. SES: socio-economic status.*

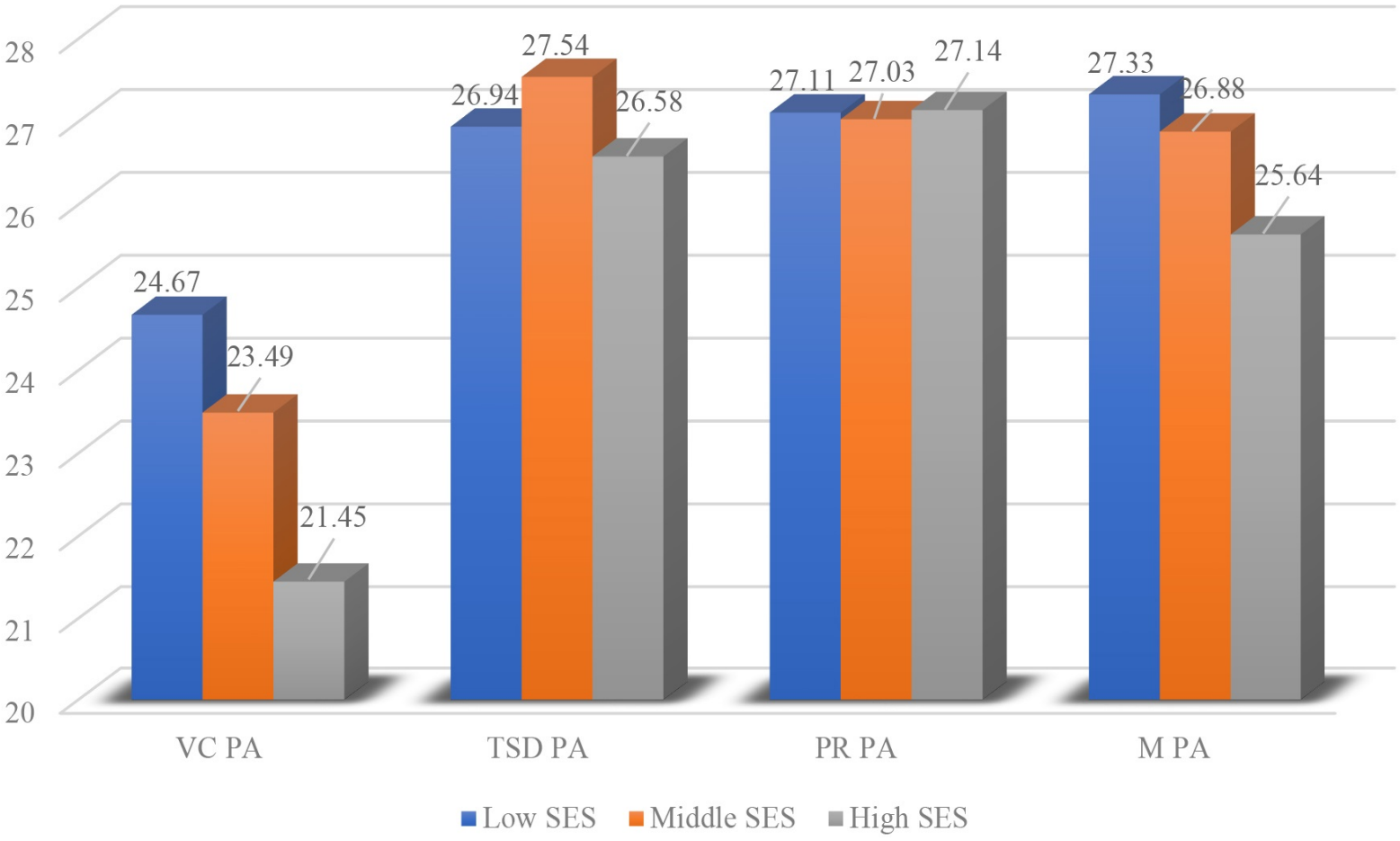

FIGURE 1. PAS for different socio-economic classes. SES: socio-economic status.

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available on reasonable request from the corresponding author.

AUTHOR CONTRIBUTIONS

RQ, AI, MK, TA and SR—designed the research study. MK, TA, SR, MMC and SS—performed the research. RQ, RI and OK—analyzed the data. RQ, AKB, MNB, KR and GRAA—wrote the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was initiated after approval of the ethical review committee of RIHS, Islamabad, Pakistan (approval no. RIHS/009/21). An informed consent was obtained from the parents who were willing to participate in the study.

ACKNOWLEDGMENT

Not applicable.

FUNDING

This research received no external funding.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

[1] American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. Pediatric Dentistry. 2017; 39: 246–259.

[2] Stein Duker LI, Grager M, Giffin W, Hikita N, Polido JC. The relationship between dental fear and anxiety, general anxiety/fear, sensory over-responsivity, and oral health behaviors and outcomes: a conceptual model. International Journal of Environmental Research and Public Health. 2022; 19: 2380.

[3] Desai SP, Shah PP, Jajoo SS, Smita PS. Assessment of parental attitude toward different behavior management techniques used in pediatric dentistry. Journal of Indian Society of Pedodontics and Preventive Dentistry. 2019; 37: 350–359.

[4] Janus M, Reid-Westoby C, Lee C, Brownell M, Maguire JL. Association between severe unaddressed dental needs and developmental health at school entry in Canada: a cross-sectional study. BMC Pediatrics. 2019; 19: 481.

[5] Murphy MG, Fields HW Jr, Machen JB. Parental acceptance of pediatric dentistry behavior management techniques. Pediatric Dentistry. 1984; 6: 193–198.

[6] Armfield JM, Stewart JF, Spencer AJ. The vicious cycle of dental fear: exploring the interplay between oral health, service utilization and dental fear. BMC Oral Health. 2007; 7: 1.

[7] Lawrence SM, McTigue DJ, Wilson S, Odom JG, Waggoner WF, Fields HW Jr. Parental attitudes toward behavior management techniques used in pediatric dentistry. Pediatric Dentistry. 1991; 13: 151–155.

[8] Havelka C, McTigue D, Wilson S, Odom J. The influence of social status and prior explanation on parental attitudes toward behavior management techniques. Pediatric Dentistry. 1992; 14: 376–381.

[9] Al Zoubi L, Schmoeckel J, Mustafa Ali M, Splieth CH. Parental acceptance of advanced behaviour management techniques in pediatric dentistry in families with different cultural background. European Archives of Paediatric Dentistry. 2021; 22: 707–713.

[10] Boka V, Arapostathis K, Vretos N, Kotsanos N. Parental acceptance of behaviour-management techniques used in pediatric dentistry and its relation to parental dental anxiety and experience. European Archives of Paediatric Dentistry. 2014; 15: 333–339.

[11] Walker LE. Changing behaviour using video self modelling: its training applications and perceptions in New Zealand settings [master's thesis]. University of Canterbury. 2009.

[12] Shukla H, Kulkarni S, Wasnik MB, Rojekar N, Bhattad D, Kolekar P. Acceptance of parents for behavior management technique with reference to previous dental expertise and dental anxiety. International Journal of Clinical Pediatric Dentistry. 2021; 14: S193–S198.

[13] Peretz B, Kharouba J, Blumer S. Pattern of parental acceptance of management techniques used in pediatric dentistry. Journal of Clinical Pediatric Dentistry. 2013; 38: 27–30.

[14] Seangpadsa K, Smutkeeree A, Leelataweewud P. Parental acceptance of behavior management techniques for preschool children in dental practice: revisited. Journal of the Indian Society of Pedodontics and Preventive Dentistry. 2020; 38: 274–279.

[15] Acharya S. Parental acceptance of various behaviour management techniques used in pediatric dentistry: a pilot study in Odisha, India. Pesquisa Brasileira em Odontopediatria e Clinica Integrada. 2017; 17: 1–6. (In Portuguese)

How to cite this article: Rizwan Qureshi, Azhar Iqbal, Mahnoor Khan, Alzarea K. Bader, Muhammed Nadeem Baig, Krishna Rao, *et al*. Assessment of parental acceptance towards different non-pharmacological behaviour management techniques in pediatric dental care—a cross-sectional study. Journal of Clinical Pediatric Dentistry. 2023; 47(4): 35-39. doi: 10.22514/jocpd.2023.033.