ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4

Journal of Coastal Life Medicine

Assessment of Correlation of Predisposed Maternal Apprehension on their Children's Behavior in their Course of Sequential Visits to Dental Clinic- A Cross Sectional Study

Received: 11 February 2023, **Revised:** 13 March 2023, **Accepted:** 15 April 2023

Dr Lakshmi Thribhuvanan
Assistant Professor, DR DY PATIL VIDYAPEETH, DR DY PATIL DENTAL COLLEGE AND HOSPITAL, SANT TUKARAM NAGAR, PIMPRI, PUNE

Dr M.S.Saravanakumar
Professor and Head Of Department Of Pedodontics And Preventive Dentistry, Sri Venkateshwara Dental College, Chennai

Dr Anjana G
Professor and Head Of Department Of Pedodontics And Preventive Dentistry, Royal Dental College, Palakkad

Keywords
Modified Dental Anxiety Scale, Raghavendra, Madhuri, Sujata (RMS) Pictorial Scale, Dental Anxiety

Abstract
Background: Pediatric dental patients experiencing unidentified fear and anxiety towards dental care is considered as one of the most anticipatory and prevalent dental health concern. Parents especially mothers are known to transmit their inherent assumptions and concerned fear with regards to dental care to their wards. Hence this maternal influence is determined to have considerable effect on child's behavior in the dental clinical setting.

Methods: A cross sectional study was conducted in the department to determine the influence of maternal anxiety on their children during their subsequent visit to dental clinics. Hundred and Twenty subjects were identified along with their mothers and were recruited for the study. They were then provided with the Modified Dental Anxiety Scale Questionnaire (MDAS) and both the mothers and child's physiologic parameters were recorded during each visit. In a similar manner the child's level of anxiety were recorded using the Raghavendra, Madhuri, Sujata (RMS) Pictorial Scale (RMS-PS) along with their physiologic parameters.

Results: The obtained figures definitely suggests a clear association ($P < 0.05$) between the recorded scores (MDAS and RMS-PS) and measured variables (blood pressure and heart rate) of mothers and wards. There existed no significant variation with regard to oxygen saturation of both mothers and wards.

Conclusion: The anxiety levels pertinently persisting among mothers have a substantial association′ with the child″s level of anxiety and fear in dental environment

1. Introduction

The innate human emotion which is substantially evoked in various encounters during day to day activities is termed as anxiety. Henceforth it is also detailed as in "state of unpleasant confrontation related to consociate alarm of hazard from inner bounds or from explicate mastered proceeding of their existing domain.[1] Dental anxiety is defined as patient's response to any mode of stress that is exclusively specific to the dental situation. Dental anxiety can be described as a reliably unclear or doubtful feeling of unpleasantness convoyed by a foreseen premonition that reluctantly undesirable event or episode which concedes whereas dental fear is the foreboding awareness of menace or affront extorted by a perceptible antecedent.[2] It is ranked fourth among various common fears and holds ninth position among wide variety of other intense fears. This conformation of anxiety among patients during the process of the elucidated dental care is the undeniably the pronounced defiance which is being confronted by the dental professionals in their dental clinics.[2] This unavailing anxiety acts as hindrance in implementation of general clinical procedures which is scheduled as the recommended treatment plan for the patient. This will probably lead to patients denial in receiving the dental treatment finally increasing the severity of the existing clinical scenario. Delaying of this treatment due to dental anxiety will probably result in the requirement

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

of more invasive dental procedures requiring more specific patient cooperation and financial investments.3

Children are more susceptible to anxiety than adults, and the ideal cause of their anxiety is thought to have an influence from their peer group experiences and common parental threats of frightening dental environment. These contributing factors and environment makes the clinical as well as psychological management of child more difficult in the clinical setup. Therefore, it entirely relies on the dental personnel to work in an environment acceptable to children which would subtly reduce their unwarranted dental fear and anxiety towards dental treatment.3 Dental anxiety is defined to possess a highly significant multifactorial etiology. The most commonly and widely acclaimed risk and contributing elements which has invariable impact on anxiety experienced by children in dental scenario are parental income, pertaining history of dental treatment and oral care execution prevalent among them in determining the need for maintaining adequate oral health which would pave way for reducing the highly impacted dental anxiety among children.[3,4]

Mothers spend considerable amount of time with the children in their early stages of growth and development and hence it is an undeniable fact that the child's behavior and attitude will be highly influenced by mother's attitudes beliefs and behavior. Henceforth child's refusal manners was found to be attributed to frightened parents especially with apprehensive mothers.[4] The resulting scare and apprehension formerly fend off the child from seeking any sort of dental care modalities. The socioeconomic status of the family also plays highly definable and crucial role in determining the acceptance and modality of dental treatment needs. Dental caries not only affects overall health of the child but also affects the child psychological development, self-confidence and psychosocial development.[4] Dental caries is a disease with multi-factorial origin which traverses through multiple causative factors. Several recent studies conducted have explained the fact that anxious behaviors of adult towards receiving dental treatment could be probably due to the above acquired childhood fears from peers and family which high lightens the fact that the children should be handled in extreme care with a proper treatment strategy.[4]

Dental care fosters a sequence of successive implication for dentists, when it comes to dealing with delivering the adequate amount of dental care for children.[5] Dental anxiety have thus shown to be highly determining risk indicator to poor dental health and related periodontal status irrespective of age. Mothers are found to be more allied in taking care of their children and hence appears to spend comparatively more amount of time with their children.[10] The prevalence of early childhood caries have been also influenced by comparatively low level of maternal awareness and subsequent education received at their stage.[5] Apart from this improper psychological preparation of both the child and the parent will subsequently result in hindered chances of failures in determining and delivering the decided treatment strategy for the patient. Therefore accurate and definitive management of dental fear and anxiety thus defines a satisfactory clinical result resulting an improved oral health status. In addition to this such planned early management helps in ensuring positive attitude among pediatric patients as well as their parents towards receiving the definitive dental treatment without any subsiding delay thereby making it acceptable to both the child and their caregivers.[6,7]

2. Methodology

The formulated study was conducted in Royal Dental College, Palakkad, Department of Pediatric and Preventive Dentistry.[8]

Identification Of Study Population

Inclusion Criteria.[8]

- Children belonging to age of 9-12 years.[8]
- Children accompanied by their mothers to the department for the first time.
- Children who require restorative treatment, extractions and those indicated for full mouth prophylactic therapy.
- Children given at least two subsequent appointments for the mentioned procedures.

Exclusion criteria.[8]

- Children with an investigated history of unreformable rarity, advancing anomalies,

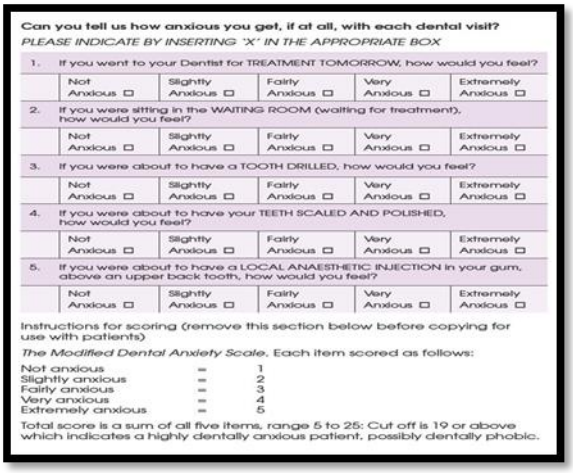
ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

systemic disorders or history of prolonged hospitalization or illness.[8]

- Children not integrated to the defined age category.[8]
- Children presenting with any previous dental care history and subsequent treatment.

One hundred twenty children aged 9-12 years reporting to the department Department of Pedodontics and Preventive Dentistry, Palakkad, Kerala, India with their mothers were randomly selected based on the mentioned inclusion criteria. This included 60 boys and 60 girls respectively. A brief patient profile was created based on child's sex, order of siblings, socioeconomic status and reason for the dental visit (Supplementary table). The children were considered to be included in a single age group of 9-12 years. The accompanying mothers of the children were then detailed about the procedures and the required accord was procured from them. The participants included in the study were guided to receive the mentioned therapeutic dental procedures. Prior to beginning with the child's clinical examinations the mothers physiological parameters including blood, pressure, heart rate and oxygen saturation were recorded using sphygmomanometer and pulse oximeter in two separate sessions 1. Before subjecting the child to clinical dental inspection and evaluation. 2. After subjecting the child to clinical dental inspection the mothers were given MDAS score cards to mark the mother's response during her first visit to the dental clinic with the child. The child's reply were also registered alternatively by measuring the defined physiological parameters thereby utilizing sphygmomanometer and pulse oximeter at two subsequent appointments. 1. Before subjecting the child to clinical dental inspection and evaluation. 2. After subjecting the child to clinical dental inspection and evaluation the child was given RMS-PS score cards to record their responses in both these sessions with respect to their first dental visit. Out of the total 120 children selected for the above study 60 of them were planned to be extracted due to severely destructed deciduous teeth structure, 40 of them were subjected to undergo conventional restorative procedures due to presence of nominal carious lesions and the remaining 20 children were instructed for prophylactic dental therapy. The Modified Dental Anxiety Score card consists of five sequentially arranged questions with having answers falling into options of "Not Anxious" to "Extremely Anxious" which is sequentially scored from 0-25 based on the response obtained. The Raghavendra, Madhuri, Sujata (RMS) Pictorial Scale (RMS-PS) comprises of a sequential arranged row of five faces ranging from very happy to very unhappy. The photographs included pictures defining to both genders of boys and girls thereby making it more relatable to the respective children. The children were then asked to choose the face they feel like about themselves at that moment. The RMS-PS scale was graded from 1-5 with 1 corresponding to scored by giving a value of one to the very happy face and five to the very unhappy face. A definitive comparative evaluation of the recorded physiologic parameters of mothers and their children were assessed during their first visit to the department.[7]

Figure 1. MDAS Questionnaire along with scores.[4]



Can you tell us how anxious you get, if at all, with each dental visit?

PLEASE INDICATE BY INSERTING 'X' IN THE APPROPRIATE BOX

1. If you went to your Dentist for TREATMENT TOMORROW, how would you feel?	Not Anxious ☐	Slightly Anxious ☐	Fairly Anxious ☐	Very Anxious ☐	Extremely Anxious ☐
2. If you were sitting in the WAITING ROOM (waiting for treatment), how would you feel?	Not Anxious ☐	Slightly Anxious ☐	Fairly Anxious ☐	Very Anxious ☐	Extremely Anxious ☐
3. If you were about to have a TOOTH DRILLED, how would you feel?	Not Anxious ☐	Slightly Anxious ☐	Fairly Anxious ☐	Very Anxious ☐	Extremely Anxious ☐
4. If you were about to have your TEETH SCALED AND POLISHED, how would you feel?	Not Anxious ☐	Slightly Anxious ☐	Fairly Anxious ☐	Very Anxious ☐	Extremely Anxious ☐
5. If you were about to have a LOCAL ANAESTHETIC INJECTION in your gum, above an upper back tooth, how would you feel?	Not Anxious ☐	Slightly Anxious ☐	Fairly Anxious ☐	Very Anxious ☐	Extremely Anxious ☐

Instructions for scoring (remove this section below before copying for use with patients)

The Modified Dental Anxiety Scale. Each item scored as follows:

Not anxious	=	1
Slightly anxious	=	2
Fairly anxious	=	3
Very anxious	=	4
Extremely anxious	=	5

Total score is a sum of all five items, range 5 to 25: Cut off is 19 or above which indicates a highly dentally anxious patient, possibly dentally phobic.

Figure 2. Interpretation of RMS-PS scores.

1= very happy (score 1)

2 = happy (score 2)

3 = indifferent (score 3)

4= unhappy (scores 4)

5= very unhappy (score 5)

SECOND VISIT

In the scheduled second visit the defined vital

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

parameters of mother namely blood pressure, heart rate and oxygen saturation were measured before and after subjecting their respective wards to determined treatment procedure.[8] These physiological parameters were assessed similar to the initial visit using sphygmomanometer and pulse oximeter.[13] The mothers were distributed with the MDAS questionnaire to record their responses.[8] Similarly the child's vital parameters i.e. blood pressure, heart rate and oxygen saturation were recorded using sphygmomanometer and pulse oximeter in a similar manner to the first visit. Similar to their first the children were given RMS-PS score cards prior and post their treatment procedures and were instructed to tick their responses.[7]

STATISTICAL ANALYSIS

Pearson's Correlation Coefficient was deployed to institute equivalence linking the corporal constants(blood pressure, heart rate and oxygen saturation levels), accompanying with anxiety scores of mothers and their wards.[8] A P-value equal or less than 0.05 was considered as statistically significant.

RESULTS

INTRODUCTORY VISIT TO DENTAL CLINIC

Table 1. Comparative evaluation of maternal and child's parameters during first clinical visit.[8]

MEASURED VARIABLES	Mother's variables before child's examination	Mother's variables after child's examination	Child's variables Before examination	Child's variables After examination
	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Systolic pressure	122±1.05	120±0.84	104±1.64	100±1.68
Diastolic pressure	84±1.03	80±0.84	68±1.03	66±1.03
Heart rate	72±1.13	72±1.11	102±0.96	100±1.03
Oxygen saturation	96±0.84	96±0.92	99±0.83	99±0.90
MDAS	11±0.53	11±0.48		
RMS-PS			3±0.51	2±0.48

INTRODUCTORY VISIT TO DENTAL CLINIC

Table 1. Comparative evaluation of maternal and child's parameters during first clinical visit.[8]

INFERENCES

The statistical analysis was estimated and analyzed with Pearson's Correlation coefficient thereby showing a significantly predominant positive correlation between the evaluated physiological and psychological parameters of both the parents and children. The P-Value for the study is 0.001, and the result is found to be significant at $P < 0.05$.[8]

SUCCEEDING VISIT TO DENTAL CLINIC AS PER SCHEDULED APPOINTMENT

Table 2. Comparative evaluation of maternal and child's parameters prior and post the treatment modalities in their children.[8]

Table 2. Comparative evaluation of maternal and child's parameters prior and post the treatment modalities in their children.[8]

MEASURED VARIABLES	Pre Extraction (n=60)		Post Extraction (n=60)		Pre Restoration(n=40)		Post Restoration (n=40)		Pre Oral Prophylaxis (n=20)		Post Oral Prophylaxis (n=20)	
	Mean±SD		Mean±SD		Mean±SD		Mean±SD		Mean±SD		Mean±SD	
	MATERNAL	CHILD	MATERNAL	CHILD	MATERNAL	CHILD	MATERNAL	CHILD	MATERNAL	CHILD	MATERNAL	CHILD
Systolic BP	126±1.00	106±1.03	124±1.05	104±1.13	126±1.03	104±1.02	124±1.01	102±1.12	120±1.89	102±1.14	120±1.96	100±1.23
Diastolic BP	94±0.94	70±0.96	80±0.84	66±0.99	86±0.94	68±0.94	84±1.03	66±0.98	82±0.96	68±1.03	80±1.03	66±0.94
Heart Rate	76±0.93	106±0.94	72±1.39	104±0.96	80±1.68	104±0.96	74±1.03	100±0.96	72±1.13	102±0.84	72±1.26	100±1.43
O_2 Saturation	96±1.02	99±0.51	96±1.05	99±0.51	96±1.03	99±0.50	96±1.02	99±0.51	96±1.04	99±0.48	96±1.02	99±0.46
MDAS Scores	13±0.48		12±0.48		12±0.51		11±0.50		11±0.48		10±0.48	
RMS-PS Scores	3±0.48		2±0.67		2±0.42		1±0.51		2±0.48		1±0.46	
P value	<0.001		<0.001		<0.001		<0.001		<0.001		<0.001	

Table 3. Pearson's correlation coefficient evaluation of every parameters.[8]

Table 3. Pearson's correlation coefficient evaluation of every parameters.[8]

MEASURED VARIABLES	INTRODUCTORY VISIT TO DENTAL CLINIC(R)	SUCCEEDING VISIT TO DENTAL CLINIC (R)	P VALUE
MDAS-RMS-PS	0.4287	0.5342	<0.0001
SYSTOLIC M-C	0.7303	0.8374	<0.0001
DIASTOLIC M-C	0.7279	0.8662	<0.0001
HEART RATE M-C	0.2704	0.4166	<0.0001
OXYGEN SATURATION M-C	0.1021	0.2559	<0.0001

3. Result:

Pearson's Correlation was used to determine the statistical analysis of the obtained values. The resultant determinant value exhibits a concomitant and conclusive association between maternal and offspring measured values during both the visits.[8] In the present study The P-Value is determined as 0.001, and resultant values in the study is found to be significant at $P < 0.05$.[8] The above resultant findings also establish the fact that mother child pair among those who were subjected to undergo extraction procedure for their wards exhibited an exhilarated spike in their physiologic parameters which substantially depicts the fact that the general fear among mothers on invasive procedures of extraction is transferred and reflected on the child's parameters in an inadvertent manner. The results also exhibit the fact that there existed a reflective correlation between RMS-PS scores of children and MDAS scores of mothers which still

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

substantiates the fact the evident influence of maternal anxiety on their children.[8]

The Pearson's Correlation coefficient displays that the systolic and diastolic blood pressure along with heart rate of the child and mother were depict ably associated signifying the fact that wards of extremely anxious mothers displayed higher physiologic parameters in both the subsequent visits.[8] These higher physiological parameters definitely correlated with the higher values displayed by their mothers. The results also signify the fact that unobstructed maternal anxiety and fear are gradually transferred to their wards. This however establishes the influence of maternal anxiety on child's behavior which thereby determines the treatment outcome and success of the definitive treatment plan designed for the child. The definitive clinical implication of the resultant correlation is that when a mother visit the dental department with her ward, subsequent measurement of their physiologic parameters as well as with the utilization of MDAS and RMS-PS scores will aid the dental surgeon's decisive approach on child's plane of association for his defined treatment plan.[8] Furthermore these values and score cards will act as an adjunct tool for the dentist in determining the behavioral modification techniques along with the appropriate treatment plan for the specific child.[(8,9)]

4. Discussion

Dental anxiety has been found to have an extremely authentic and dynamic influence on the dental health status of the individual.9 Further more recent studies have stated the fact that parental dental fear and anxiety especially maternal fear have considerable influence on child's dental fear and approach towards dental treatment. As a result of pertaining dental anxiety among the parents they themselves continue to maintain a considerably safe distance from acquiring any form of dental treatment as well as dentists. Similarly they also avoid taking their children for timely dental visits as well, subsequently this mode of anxiety and fear from parents especially from fearful mothers are gradually transferred to their wards. Recent studies have demonstrated the fact that mothers belonging to lower socio economical status demonstrated high levels of dental anxiety.[(10,11)]

Studies were done by Khawja SG et al. have concluded that there exists significant relationship between maternal anxiety and the evident increase in dental caries incidence among their children.[12] Apart from this studies also claimed that the education level of mothers also influences the requirement of maintaining the oral health needs of the child. It was found that mothers with comparatively higher level of education claimed to be more concerned about their child's oral health. Venham et al. in his research interventions have elaborated and justified that the child's subsequent visits to dental clinical settings is found to have a positive influence on child's attitude towards dental treatment.[13] The child's age is also an existent criteria which has found to have a considerable impact on child's dental anxiety levels.[14] It is however an established fact that the cognitive ability of the child however is found to increase with the developing child's age and understanding. The studies conducted by Taylor et.al determined the fact that there existed no considerable relationship between the child's age and dental anxiety which also declares the fact that the children in our study group was not classified depending on their age. [15]

This study when it came into gender perspective displayed results similar to Popescu SM et al which detailed the fact that irrespective of gender preferences the children showed some defineable levels of anxiety.[16] However contradictory to our study were the results obtained by Kleinknecht et al who justified that there existed a considerable mean difference on the basis of gender of children towards their perception of dental fear and concluded that boys displayed a cooperative and less tensed behavior than girls during any invasive treatment modalities.[17] However our study corresponds with the findings of Kleinknecht et.al who claimed that there existed no considerable correlation between gender and anxiety levels in the children.[17] Kyristy et al in his studies have established the fact that order of siblings never determined child's attitude within dental environment.[18]

The results obtained of the physiological parameters measured are findings of Koenigsberg et.al which were deduced that heart rate and blood pressure acted as one of the most reliable indicators of increased dental fear and anxiety irrespective of the age.[19] The first visit pressure acted as a reliable indicator of stress and anxiety.[20] The studies conducted by Beck and Weaver however had results contradicting our study, according to them dental anxiety had considerable influence on variation of heart rate but had no effect on blood pressure.[21] Our present study detailed that there existed

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

considerable variations in the heart rate and blood pressure values of both the mothers and their children under stressful or anxiety evoking dental conditions.[22,23]

According to Ilguy et.al she established in her study that MDAS questionnaire and scoring criteria is one of the most reliable scoring criteria in grading dental anxiety among mothers.[24] She also notified the fact that existent anxiety of mother towards receiving any modality of dental treatment had a undeniably evident relation in determining their ward's resultant attitude towards accepting dental treatment.[25] However this also brings into light one general fact that the mothers resultant replies to MDAS, determines exclusively their levels of anxiety towards the dental treatment and in mostly the child remains unaware of this except in certain undeniable circumstances where the mothers without their subtle awareness and probably without their indebted knowledge shifts this anxiety to wards by detailing unwarranted dental encounters thus finally implying the child's dental behavior. These results coincides with this study on the aspects that mothers dental anxiety scores explains to have a direct and sequential effects on the characteristic nature of their children while in a dental scenario.[26,27]

In our present study, the children who were subjected to undergo extraction procedure shown an ideally inconclusive increase in their heart rate similar to the findings of Guinot Jimeno et al.[28] The well defined and marked increase in pulse rate exemplifies the fact of increased adrenergic rush during anxiety evoking clinical scenario and environment. The The Raghavendra, Madhuri, Sujata (RMS) Pictorial Scale (RMS-PS) primarily is composed of a row of five faces which grades in sequential order of from very happy to very unhappy photographed as to represent a girl and a boy child repectively. The children involved in the study children were instructed to indicate their experience by correlating with the most suitable facial expression from the scale to which they could easily relate at that particular period of time. The RMS-PS scale is graded by denoting 1 to the most positive value of very happy face and 5 to the very unhappy face. The RMS-PS scale taking into consideration of its ease of understanding and interpretation from the depicted faces hence can be employed with children irrespective of their age as they can easily identify these faces evidently relatable to them at a glance.[7] Myers. et al and Sowjanya et al estimated that there exhibitted noticeable changes in the dental anxiety levels in children on frequent appointments to the clinical setup and it was also determined that alternative dental visits, in which he specific the fact that there existed well definitive association between the measured physiologic parameters and the obtained values of anxiety score cards during the dental scenario and environment.[29,30]

The oxygen saturation levels of mothers and their children showed no significantly marked difference. These levels were considerably similar to that of Prabhakar et. al who defined that oxygen saturation levels were not demarcatively affected by varying levels of anxiety among mothers and their wards in comparison to pulse rate and blood pressure values.[31] Though oxygen saturation is not considered as an important physiologic parameter determining anxiety levels it has been taken as very few studies have considered it as one of the measurable parameters and the pulse oximeter used in the present study records displays the definitive oxygen saturation levels.[32,33]

However a study which had a descriptive and detailed comparative evaluation of physiologic parameters i.e blood pressure, heart rate and oxygen saturation of both the mother and their child along with the application of MDAS and RMS-PS score criteria have not been conducted so far.[37] Hence any final decisions in relation to the treatment plan must not be compelled entirely based on acceptable oral detection only.[13,38] It should also confer a proper and adequate level of anxiety assessment of both the mother as well as the child which therefor had become an absolute requirement in the need for management of the child effectively and adequately within the dental clinical environment.[34,35]

5. Conclusion

This study signifies the findings that the dental anxiety levels among mothers have considerable influence on the anxiety levels in their children.[17,8] Maternal dental anxiety is found to act as an adjunct and concomitant factor in contributing to the development of child's perception of dental fear and anxiety towards receiving dental treatment.8 Hence logistical and determinant early diagnosis of maternal anxiety levels can act as an adjunctive clinical aid for the Pediatric dentist in devising the ideal behavioral management strategies and protocol for the child accordingly.[8] This study also evidently exhibits the findings that on subsequent

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

exposure to dental clinical environment the apprehended anxiety levels were found to decrease when compared to their initial dental visits. Hence the study concluded that there existed the subsequent interdependence allying the defined corporal constants of blood pressure and heart rate of children and mothers and also signified the clinical pertinence of MDAS and RMS-PS scales in measuring anxiety levels of mothers and children respectively.[8, 36]

KEY MESSAGES FROM STUDY

- Maternal dental anxiety will act as an adjunct factor influencing the child's attitude towards receiving dental treatment.
- RMS-PS scale is easily applicable and acceptable by children in determining their anxieties as it helps them to correlate better with themselves and current scenario.
- Measurement of physiological parameters will determine the levels of anxiety in both mothers and their off springs which will ideally help the dentist plan their treatment accordingly.
- MDAS scores are easily reliable scores which is comparatively simple to understand and can be employed in identifying anxiety levels in mothers at ease.
- The existent correlation between MDAS and RMS-PS is highly significant as it will employ the health care provider in adapting relaxation and calming techniques for both the mother and their ward to continue blissfully with further treatment ahead.

CONFLICTS OF INTEREST : Nil

SOURCES OF FUNDING : Nil

References

[1] Eitner S, Wichmann M, Paulsen A, Holst S. Dental anxiety--an epidemiological study on its clinical correlation and effects on oral health J Oral Rehabil. 2006;33:588–93.
[2] Pramila M, Murthy AK, Chandrakala B, Ranganath S. Dental fear in children and its relation to dental caries and gingival condition - A cross sectional study in Bangalore city, India Int J Clin Dent Sci. 2010;1:1–5.
[3] Padawe D, Chettiankandy TJ, Rathi GV, Sachdev SS, Takate VS, Yadav T. Effectivity of Binaural Beats in Reduction of Anxiety during Dental Treatment in Pediatric Patients. Global Journal of Medical, Pharmaceutical, and Biomedical Update. 2023 Feb 8;18.
[4] Harsha L, Jeevanandan G. A scale to assess child's dental anxiety. Int J Multidisciplinary Res Modern Educ 2017;3(1):301–303. DOI: 10.5281/zenodo.573166.
[5] Humphris GM, Morrison T, Lindsay SJ (1995) The modifed dental anxiety scale: validation and United Kingdom norms. Commun Dent Health
[6] Farhat-McHayleh N, Harfouche A, Souaid P (2009) Techniques for managing behaviour in pediatric dentistry: comparative study of live modelling and tell-show-do based on children's heart rates during treatment. J Can Dent Assoc 75:283
[7] Shetty RM, Khandelwal M, Rath S. RMS Pictorial Scale (RMS-PS): An innovative scale for the assessment of child's dental anxiety. Journal of Indian Society of Pedodontics and Preventive Dentistry. 2015 Jan 1;33(1):48.
[8] Thribhuvanan L, Saravanakumar MS, Anjana G. Influence of parental anxiety on children's behaviour during their visits to dental clinic: a short clinical study. Bulletin of the National Research Centre. 2021 Dec;45:1-8.
[9] Vilas-Boas ADM, Vieira JOS, Diniz MB. Child's behavior and its relationship with the level of maternal-child anxiety during dental care. Pesqui Bras Odontopediatria Clín Integr 2017;17(1):36-46.
[10] Verma N, Gupta A, Garg S, Dogra S, Joshi S, Vaid P Outcome of Conventional versus Digital Mode of Behaviour Modification With or Without Maternal Presence in Paediatric Dental Patients-A Pilot Study. Journal of Clinical & Diagnostic Research. 2022 Jun 1;16(6).
[11] Shim YS, Kim AH, Jeon EY, An SY. Dental fear & anxiety and dental pain in children and adolescents; a systemic review. J Dent Anesth Pain Med 2015; 15(2):53-61
[12] Khawja SG, Arora R, Shah AH, Wyne AH, Sharma A. Maternal dental anxiety and its effect on caries experience among children in Udaipur, India J Clin Diagn Res. 2015;9:42–5.
[13] Venham L, Bengston D, Cipes M. Children's response to sequential dental visits. J Dent Res 1977; 56:454-9.
[14] Howard KE, Freeman R. Reliability and validity of a faces versionof the modified child dentalanxiety scale. Int J Paediatr Dent2007;17:281–288.
[15] Best CH, Taylor NB: The physiological basis of medical practice. The Williams and Williams and Wilkins Co, Baltimore, pages: 127-205,1945.
[16] Popescu SM, Dascălu IT, Scrieciu M, Mercut V,

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

Moraru I, Tuculină MJ. Dental Anxiety and its association with behavioral factors in children. Curr Health Sci J 2014; 40(4):261-4.
[17] Kleinknecht RA, Klepac RK, Alexander LD. Origins and characteristics of fear of dentistry. J Am Dent Assoc. 1973;86(4):842–848
[18] Kyritsi MA, Dimou G, Lygidakis NA. Parental attitudes andperceptions affecting children's dental behaviour in Greek population: A clinical study. Eur Arch Pediatr Dent 2009;10:29-32
[19] Koenigsberg SR, Johnson R: Child behavior during three dental visits, J Dent Child, 33 - 36,1975.
[20] Sinha M, Christopher NC, et al. Evaluation of nonpharmacologic methods of pain and anxiety management for laceration repair in the pediatric emergency department. Pediatrics 2006;117:1162–1168. DOI: 10.1542/peds.2005-1100.
[21] Beck FM, Weaver JM: Blood pressure and heart rate responses to anticipated high stress dental treatment, J Dent Res, 60: 26 - 29,1981.
[22] Al-Namankany A, de Souza M, Ashley P. Evidence-based dentistry: analysis of dental anxiety scales for children. Br Dent J 2012;212(5):219–222. DOI: 10.1038/sj.bdj.2012.174.
[23] Krishnappa S, Srinath S, Vishwanath SK, et al. Evaluation of facial image scale and Venham picture test used to assess dental anxiety in children. J Indian Assoc Public Health Dent 2013;11(2):31–35
[24] Ilgüy D, Ilgüy M, Dinçer S, Bayirli G (2005) Reliability and validity of the Modified Dental Anxiety Scale in Turkish patients. J Int Med Res 33:252–259Return to ref 2005 in article
[25] Soares FC, Lima RA, Barros MVG, Colares V. Factors Associated with Dental Anxiety in Brazilian Children of 5 to 8 years. Brazilian Research in Pediatric Dentistry and Integrated Clinic. 2014;14(2):97-105
[26] Suprabha BS, Rao A, Choudhary S, Shenoy R. Child dental fear and behavior: the role of environmental factors in a hospital cohort. J Indian Soc Pedod Prev Dent 2011; 29(2):95-101
[27] Rajwar AS, Goswami M. Prevalence of dental fear and its causes using three measurement scales among children in New Delhi. J Indian Soc Pedod Prev Dent 2017; 35(2):128-33.
[28] Guinot Jimeno F, Mercadé Bellido M, Cuadros Fernández C, Lorente Rodríguez AI, Llopis Pérez J, Boj Quesada JR. Effect of audiovisual distraction on children's behavior anxiety and pain in the dental setting. Eur J Paediatr Dent. 2014;15(3):297-302.
[29] Myers DR, Kramer WS, et al. A study of the heart action of the child dental patient. ASDC J Dent Child 1972;39(2):99–106
[30] Sowjanya V, Tondon S, et al. Physiological response to dental anxiety in children. J Indian Soc Pedod Prevent Dent 1995;13:13–17.
[31] Prabhakar AR, Marwah N, Raju OS. A comparison between audio and audiovisual distraction techniques in managing anxious pediatric dental patients. Journal of Indian Society of Pedodontics and Preventive Dentistry. 2007 Oct 1;25(4):177.'
[32] Elicherla SR, Bandi S, Nuvvula S, subbareddy Challa R, Saikiran KV, Priyanka VJ. 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. Journal of dental anesthesia and pain medicine. 2019 Dec 1;19(6):369-78.
[33] Asl Aminabadi N, Erfanparast L, et al. The impact of virtual reality distraction on pain and anxiety during dental treatment in 4–6 year old children: a randomized controlled clinical trial. J Dent Res Dent Clin Dent Prospects
[34] 2012;6:117–124. DOI: 10.5681/joddd.2012.025.
[35] Navit S, Johri N, et al. Effectiveness and Comparison of Various Audio Distraction Aids in Management of Anxious Dental Paediatric Patients. J Clin Diagn Res 2015;9(12):ZC05–ZC09.
[36] Tiwari N, Tiwari S, Thakur R, et al. Evaluation of treatment related fear using a newly developed fear scale for children: "Fear assessment picture scale" and its association with physiological response. Contemp Clin Dent 2015;6(3):327–331