

Behavior Management Techniques Employed by Nigerian Dentists for their Child Patients

Técnicas de Manejo do Comportamento Utilizadas por Dentistas Nigerianos em Pacientes Infantis

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RESUMO

Objetivo: Determinar as diferentes técnicas de manejo do comportamento utilizadas por cirurgiões-dentistas nigerianos em seus pacientes infantis.

Método: Cento e cinquenta questionários foram enviados a cirurgiões-dentistas em diferentes regiões da Nigéria. As informações requisitadas incluíam dados do respondente, pós-graduação, técnicas de manejo do comportamento utilizadas e motivos para a escolha da técnica.

Resultados: Um total de 128 (85,3%) questionários foram devolvidos preenchidos, dos quais 53,2% eram de mulheres e 46,8% de homens, em relação à faixa etária, < 30 anos (25%), 30-39 anos (48,4%), 40-49 anos (19,5%) and 50 anos ou mais (7,1%). Trinta e cinco profissionais (27,3%) exercia a profissão em centros de saúde, 88 (68,8%) em hospitais escola e 5 (3,9%) em hospitais privados. A maioria (98,4%) atendia crianças e 29,6% classificaram seus pacientes como não cooperadores. A técnica mais utilizada foi a do “falar-mostrar-fazer” (73,4%) seguida pelo reforço positivo (35,9%), modelagem (31,2%), dessensibilização (18,7%), contenção (13,2%), sedação (11,7%) e “mão sobre a boca” (4,6%). Somente 3,2% utilizam anestesia geral. Os principais fatores influenciadores quando da escolha da técnica foram a idade da criança (78%), a conveniência do profissional (28%), disponibilidade de instalações (25,8%), e aceitação pelos pais/criança (18,8%). Apenas 25,8% avaliaram suas instalações como adequadas.

Conclusão: A técnica “falar-mostrar-fazer” é utilizada pela maioria dos profissionais. A melhoria das instalações poderia aumentar o número de cirurgiões-dentistas que utilizam técnicas farmacológicas de manejo comportamental.

ABSTRACT

Objective: To determine the different behavior management techniques employed by dentists in Nigeria for their child patients.

Method: One hundred and fifty questionnaires were hand delivered to dentists in different locations in Nigeria. Information required include respondent's bio data, years post graduation, behavior management techniques employed, and reasons for choice of technique.

Results: A total of 128 (85.3%) were returned completed, comprising 53.2% females and 46.8% males, in age groups, < 30 years (25%), 30-39 years (48.4%), 40-49 years (19.5%) and 50 years and above (7.1%). Thirty five (27.3%) practiced in health centers, 88 (68.8%) in teaching hospitals and 5 (3.9%) in private hospitals. Majority (98.4%) attended to child patients and 29.6% rated their patients as uncooperative. The most frequently used behavior management technique was “tell-show-do”. (73.4%) followed by positive reinforcements (35.9%), modeling (31.2%), desensitization (18.7%), restraints (13.2%), sedation (11.7%) and “hand over mouth” (4.6%). Only 3.2% used general anesthesia. The major factors influencing choice of behavior management technique was age of child (78%), convenience to dentists (28%), availability of facilities (25.8%), and acceptability by parents/child (18.8%). Only 25.8% rated their facilities as adequate.

Conclusion: The “tell-show-do” technique was practiced by majority of respondents in this study. Improvements of facilities may increase the number of dentists employing pharmacological methods of management.

DESCRITORES

Comportamento infantil; Comportamento e mecanismos comportamentais; Relações dentista-paciente.

KEYWORDS

Child behavior; Behavior and behavior mechanisms; Dentist-patient relations.

INTRODUCTION

Children and young adults, and indeed all patients, exhibit some form of anxiety or fear when about to receive dental care. However, effective behavior management techniques can help alleviate the patient's fear or anxiety, an integral part of any dental practice that incorporates the care of children.

Many factors have been proposed as contributory to children's anxiety about dental procedures. These include the dental clinic environment, equipments, past dental treatment experience and the attitude of dental staff. In order to achieve the cooperation of the potentially cooperative child during dental treatment, it is necessary to attempt to modify or influence the child's behavior pattern¹. Therefore various behavior management strategies are being practiced to address these causative factors. These include verbal and non-verbal communication, tell-show-do (TSD), distraction, presence or absence of parents in the surgery, modeling, audio visual aids, positive reinforcement, physical restraint, hand over mouth exercise (HOME), sedation and general anesthesia. Behavior management methods in pediatric dentistry were either directed to maintain the communication process or intended to extinguish inappropriate behavior². The use of many of these procedures has been highly controversial in the literature. As expected, the use of these methods depends on the practicing dentist's preference and experience, location of practice and acceptability by the child and parent. The study of dentists' management strategies and manner of use can contribute to the behavior of children in receiving care³, identifying the educational needs of the practitioner⁴, formulating causal models of the determinants of dentists' behavioral management choices⁵.

Reports on the use of many of these strategies by dentists in many parts of the world abound in the literature. This study was carried out to determine the behavior management techniques employed by dentists in Nigeria to aid their child patients to cope with dental treatment and to suggest ways in improving behavioral management strategies used in the dental clinic settings.

MATERIAL AND METHODS

One hundred and fifty questionnaires were hand delivered to dentists in different locations in Nigeria. Information required in the questionnaire include

respondent's biodata, years post graduation, behavior management techniques employed, and reasons for choice of technique, self rating of skill, rating of undergraduate training, rating of attitude to difficult patients, reaction to patient's behavior and rating of available facilities in respondent's practice setting. Respondents were grouped into age groups <30, 30-39, 40-49 and 50 years and above.

Data collected were analyzed using Epi info version 6 health statistical software. Descriptive statistics, chi square and t-test were used to compare respondents' age groups, gender and type of BMT at $p < 0.05$ level of significance.

RESULTS

A total of 128 (85.3% response rate) were returned completed, comprising 53.2% females and 46.8% males, in age groups, < 30 years (25%), 30 – 39 years (48.4%), 40 – 49 years (19.5%) and 50 years and above (7.1%). Thirty five (27.3%) practiced in health centers, 88 (68.8%) in teaching hospitals and 5 (3.9%) in private hospitals (Table 1).

Table 1. Demographic characteristics of respondents in the study.

Variable	n	%
Gender		
Female	68	53.1
Male	60	46.9
Age group (years)		
<30	33	25.8
30-39	62	48.4
40-49	25	19.5
50<	8	6.3
Practice setting		
Health Centre	35	27.3
Private practice	5	3.9
Teaching Hospital	88	68.8
Location of practice		
Rural	6	4.7
Urban	122	95.3
Total	128	100.0

Majority of the respondents (98.4%) attended to child patients. Forty-four (34.9%) of all the respondents rated the child patients they had treated as uncooperative with no significant difference across gender, age groups and number of years post graduation ($p=0.86, 0.93$ and 0.48 respectively) (Table 2).

Table 2. Respondents' rating of the child patients they had treated according to gender, age group and number of years postgraduation.

Variable	Rating of Child Behaviour				Total		
	Cooperative		Uncooperative		n	%	
Gender	n	%	n	%	n	%	
Female	44	65.7	23	34.3	67	53.2	Chi Sq 0.03 p 0.86
Male	38	64.4	21	35.6	59	46.8	
Age group (years)							
<30	22	66.7	11	33.3	33	26.2	
30-39	39	63.9	22	36.1	61	48.4	
40-49	15	62.5	9	37.5	24	19.1	Chi Sq 0.44 p 0.93
50<	6	75.0	2	25.0	8	6.3	
Number of years post graduation							
<5	30	73.2	11	26.8	41	32.5	
6-10	24	55.8	19	44.2	43	34.2	
11-15	9	64.2	5	35.8	14	11.1	
16-20	10	62.5	6	37.5	16	12.7	Chi Sq 3.48 p 0.48
>20	9	75.0	3	25.0	12	9.5	
Total	82	65.1	44	34.9	126	100.0	

Fifty-five (82.1%) of female dentists were tolerant of difficult behavior compared with 39 (66.1%) male dentists ($p=0.01$). Respondents' attitude was not influenced by

age groups and number of years post graduation ($p=0.43$ and 0.22 respectively), but was influenced by gender ($p=0.01$) (Table 3).

Table 3. Respondents' rating of their attitude to difficult behavior according to gender and age group and number of years post graduation.

Variable	Rating of Attitude						Total		
	At ease		Impatient		Tolerant		n	%	
Gender	n	%	n	%	n	%	n	%	
Female	9	13.4	3	4.5	55	82.1	67	53.2	Chi Sq 8.75 p 0.01*
Male	7	11.9	13	22.0	39	66.1	59	46.8	
Age group (years)									
<30	4	12.1	2	6.1	27	81.9	33	26.2	
30-39	7	11.5	12	19.7	42	68.8	61	48.4	
40-49	4	16.7	2	8.3	18	75.0	24	19.1	Chi Sq 5.92 p 0.43
50<	1	12.5	-	-	7	87.5	8	6.3	
Number of years post graduation									
<5	6	14.6	3	7.3	32	78.1	41	32.5	
6-10	3	7.0	6	14.0	34	79.0	43	34.2	
11-15	3	21.4	4	28.6	7	50.0	14	11.1	
16-20	3	18.75	3	18.75	10	62.5	16	12.7	Chi Sq 10.56 p 0.22
>20	1	8.3	-	-	11	91.7	12	9.5	
Total	16	12.7	16	12.7	94	74.6	126	100.0	

*Significant

Sixty (46.9%) rated their undergraduate training in behavior management as 'adequate', with significantly higher proportion of younger dentists responding 'adequate' training ($p=0.01$) (Table 4). One hundred and fifteen (91.3%) respondents would try to manage their child patient's behavior and this is significantly so among the younger age groups and recent graduates ($p=0.04$ and 0.03 respectively) (Table 5). Majority (64.3%) rated their skill at managing difficult behavior as 'fair', irrespective of gender, age group and number of years post graduation (Table 6).

The most frequently used behavior management technique was the "tell-show-do" (TSD)(73.4%) followed by positive reinforcements (35.9%), modeling by other children and/or parents (31.2%), desensitization (18.7%), restraints (13.2%), sedation (11.7%) and "hand over mouth exercise" (4.6%). Only 3.2% used general anesthesia (Figure 1). The major factors influencing choice of behavior management technique was age of child (78%), convenience to dentists (28%), availability of facilities (25.8%), acceptability by parents/child (18.8%) (Figure 2). Only 25.8% rated their facilities as adequate.

Table 4. Respondents' rating of undergraduate training in behavior management.

Variable	Rating of Undergraduate Training						Total		
	Adequate		Fair		Inadequate		n	%	
Age group (years)	n	%	n	%	n	%	n	%	
<30	22	66.7	11	33.3	-	-	33	25.8	
30-39	20	32.3	31	50.0	11	17.7	62	48.4	
40-49	13	52.0	7	28.0	5	20.0	25	19.5	Chi Sq 15.5 p 0.01*
50<	5	62.5	2	25.0	1	12.5	8	6.3	
Number of years post graduation									
<5	25	61.0	15	36.6	1	2.4	41	32.0	
6-10	16	36.4	19	43.1	9	20.5	44	34.4	
11-15	4	26.7	8	53.3	3	20.0	15	11.7	
16-20	7	43.75	6	37.5	3	18.75	16	12.5	Chi Sq 13.15 p 0.1
>20	8	66.7	3	25.0	1	8.3	12	9.4	
Total	60	46.9	51	39.8	17	13.3	128	100.0	

*Significant

Table 5. Respondents' rating of their reaction to children with difficult behavior.

Variable	Reaction to Difficult Behavior				Total		
	Try to manage behavior		Refer to another dentist		n	%	
Gender	n	%	n	%	n	%	
Female	63	94.0	4	6.0	67	53.2	Chi Sq 0.73 p 0.39
Male	52	88.1	7	11.9	59	46.8	
Age group (years)							
<30	33	100.0	-	-	33	26.2	
30-39	53	86.9	8	13.1	61	48.4	
40-49	23	95.8	1	4.2	24	19.1	Chi Sq 7.91 p 0.04*
50<	6	75.0	2	25.0	8	6.3	
Number of years post graduation							
<5	41	100.0	-	-	41	32.5	
6-10	37	86.0	6	14.0	43	34.2	
11-15	11	78.6	3	21.4	14	11.1	
16-20	16	100.0	-	-	16	12.7	Chi Sq 10.71 p 0.03*
>20	10	83.3	2	16.7	12	9.5	
Total	115	91.3	11	8.7	126	100.0	

*Significant

Table 6. Respondents' rating of skill in managing difficult behavior.

Variable	Self Rating of Skill						Total		
	Adequate		Fair		Inadequate		n	%	
Gender	n	%	n	%	n	%	n	%	
Female	24	25.8	43	64.2	-	-	67	53.2	Chi Sq 1.17 p 0.55
Male	20	33.9	38	64.4	1	1.7	59	46.8	
Age group (years)									
<30	12	36.4	21	63.6	-	-	33	26.2	
30-39	19	31.2	41	67.2	1	1.6	61	48.4	
40-49	9	37.5	15	62.5	-	-	24	19.1	Chi Sq 2.25 p 0.89
50<	4	50.0	4	50.0	-	-	8	6.3	
Number of years post graduation									
<5	16	39.0	25	61.0	-	-	41	32.5	
6-10	14	32.6	29	67.4	-	-	43	34.2	
11-15	4	28.6	10	71.4	-	-	14	11.1	
16-20	4	25.0	11	56.8	1	6.2	16	12.7	Chi Sq 9.21 p 0.32
>20	6	50.0	6	50.0	-	-	12	9.5	
Total	44	34.9	81	64.3	1	0.8	126	100.0	

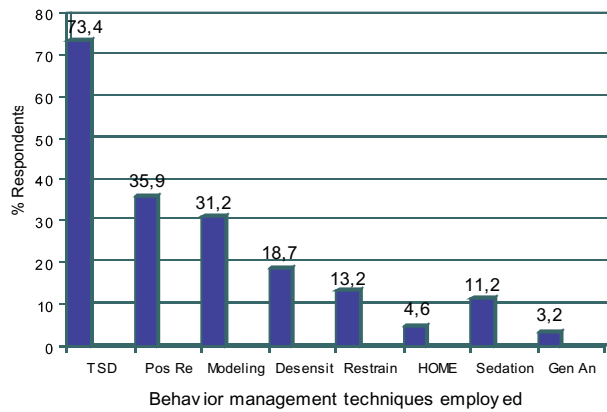


Figure 1. Behavior management techniques employed by respondents in the study.

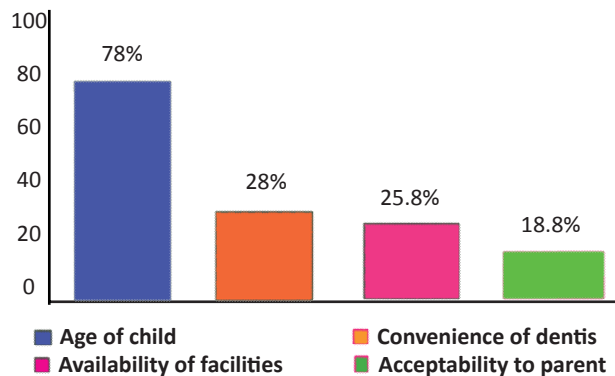


Figure 2. Factors influencing choice of behavior management techniques used by respondents.

DISCUSSION

The majority of respondents who participated in this study attended to children in their practices. There are less than 20 qualified practicing pediatric dentists in Nigeria (Nigerian Association of Paediatric Dentistry, NAPD, unpublished data, 2008), therefore most general dentists would also attend to child patients. Most of the respondents rated most of the child patients they had attended to as cooperative irrespective of gender and age group. Usually, with the basic BMT, almost all child patients will be able to receive dental care in the regular dental clinic setting. Studies have correlated child dental anxiety and age and reported that most are able to cope with dental situations at age 6-7 years^{6,7}. It was also reported that as many as 60% of anxious children can be treated by careful treatment planning and the use of behavioral management⁸.

While more females rated their attitude as tolerant of difficult behavior, age group and number of years post graduation did not influence attitude of respondents in this study. Previous studies have shown female dentists to be more empathic of fearful child patients than the

males⁴. However, younger dentists in this study would prefer to try and manage difficult behaviour than refer to another dentist compared with older dentists, irrespective of gender. This finding is similar to that of other authors which reported that younger groups of dentists tended to be more frequent users of behavioral strategies indicating changing educational background⁴. It was reported that changes in the undergraduate course play a role in shaping behavioral practices.

In this study many of the respondents rated their skill at managing difficult behavior as fair. In Nigeria, behavior management of child patients occupy a whole series of lectures which is widely taught in the undergraduate curriculum in pedodontics. Improvement in teaching and exposure to advanced behavior management techniques will improve practitioner's skill and confidence to manage difficult behavior.

The most widely used BMT among respondents in this study was "Tell-show-do", practiced by more than 70%, while the least practiced was Hand-over-mouth exercise (HOME) and general anesthesia. This finding is similar to that reported on pediatric dentists in the United Kingdom^{9,10}. It was reported that very few pediatric dentists endorse or use HOME and restraint as techniques for the control of non-cooperative children. The use of restraint was seen as appropriate only for use on certain populations such as those with physical and mental disabilities and the elderly⁹. It was observed from this study that none of the respondents used audiovisual aids to manage difficult behavior. This may be due to non availability of audiovisual facilities in most clinics. Two types of model are recognized - live and symbolic models. In live modeling, the child watches sibling, parent or peer receive treatment, while in symbolic modeling, the model is a puppet or video which is shown undergoing treatment¹¹. Both live and symbolic models may be useful to encourage the child to adopt actively the coping strategies and non anxious behavior exhibited by the models¹². The efficacy of the different modeling interventions is influenced by the previous dental treatment experiences of the child¹³. The choice of technique by the dentist will therefore depend on the individual child, the procedure to be carried out and clinic situation.

The age of the patient had the greatest influence on the choice of BMT of respondents in this study. Only 18.8% considered the parents' acceptability of their choice of technique. However, the decision about the treatment the patient will undergo is not up to the dentist alone¹⁴. It is essential to reach a consensus with the child's family and clarify the advantages, disadvantages and possible risks to the patient before the procedure^{15,16}.

Some authors have reported that majority of parents favored TSD, positive reinforcement, voice control and mouth props over physical restraint, sedation and HOME with the least acceptable methods being general anesthesia and papoose board¹⁷. Some other parents did not view papoose board and HOME as justifiable in the management of their children¹⁸. In Saudi Arabia, parental separation, physical restraint, HOME and voice control were least acceptable by parents¹. As expected, the most acceptable techniques are those which expose the patient to less risk. Establishing a dialogue with the parents is the first step towards a good relationship between the health care professional and the patient and family¹⁵. Dental fear and anxiety contribute to difficult behavior and may prevent a child from receiving care or completing a dental procedure. This may negatively affect a child's oral health related quality of life, social and emotional well being¹⁹. Provision of better facilities and support staff may increase the use of more advanced techniques which will make dental treatment more acceptable to child patients. So also is good psychological understanding and care for child patients, effective BMT and an empathic attitude and atmosphere which would form the basis for successful dental treatment for all child patients²⁰.

CONCLUSION

It is concluded that most respondents in this study favored TSD, positive reinforcement, modeling and desensitization over restraint, HOME, sedation and general anesthesia. The age of the patient was also a major factor in the choice of technique.

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