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Self-Reported Level of Satisfaction with Training and Confidence in the Use of Behaviour Management Techniques among Dental Students and Interns

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Abstract

Background: *Knowledge and practice of behavioral management techniques is essential in the efficient delivery of oral health care in children. This study evaluated self-reported satisfaction with training in behavior management techniques and confidence with use of these techniques among final year dental students and dental interns.*

Methods: *This was a descriptive cross-sectional study of final year dental students and dental interns of University of Benin Teaching Hospital and the Dental Centre of Central hospital, Benin. It was a questionnaire based study and involved 48 study participants. Descriptive analysis was done using SPSS, version 21.0.*

Results: *Majority (97.9%) of participants affirmed to receiving training on behavior management techniques with more than half of them (58%) reporting that they were satisfied with the level of training received. Majority (64.6%) reported that they were not at all confident using the pharmacological methods of behavior management in children. Smiling face and friendly environment were the non-pharmacological behavior guidance techniques in which the highest proportion of respondents were extremely confident employing while managing the pediatric dental patient. Confidence in the use of pharmacological behavior management methods between the students and interns was statistically significant (p= 0.026).*

Conclusion: *The training of dental students in behavior management techniques should be reviewed and should include practical, hands-on training and clinical demonstrations of the various methods at the chairside.*

Keywords: *Behaviour management techniques, training, level of confidence, paediatric dental patient.*

Introduction

Good behavior guidance techniques are essential for provision of effective delivery of oral health care among children and adolescents. (1) Good behavior does not imply just the behavior necessary to complete a given task, but includes creating a long-term interest on the patient's part for on-going prevention and improved dental health in the future. (2) Dental management of children often begins with an evaluation of behavior and how this can be guided for favorable outcomes. (3)

Dental treatment is seen by children as a painful event. A significant percentage of children do not co-operate in the dental chair hence causing an obstacle to delivery of quality dental care (2, 4) Oftentimes, their negative responses to a dental visit to the clinic is due to fear of the unknown or anxiety displayed in an uncooperative behavior (4,5). Also, some parents who have had past negative dental experiences tend to project this on the child and these children will tend to be uncooperative in the clinic. (6, 7) This is why it is essential to manage any uncooperative behavior in order to instill a positive attitude towards future oral health care (3, 6, 8).

Behavior guidance techniques consist of the non-phar macologic and pharmacologic approach (9) Know ledge and use of these methods are key to managing children in the dental clinic. The behavior displayed

by children seen in the dental clinic range from those who are lacking in cooperative ability, the potentially cooperative ones and the uncooperative children to children who are cooperative. Ability and confidence in the use of behavior guidance techniques cannot be overemphasized especially among dental students and interns who see these patients as part of their curriculum of training in pediatric dentistry.

This study was designed therefore to assess the perceived level of training on behavior guidance techniques and satisfaction with the training as well as evaluate the self- reported level of confidence in the use of behavior management techniques among dental students and interns.

Methods

This was a descriptive cross-sectional study of final year dental students of the University of Benin and dental interns of the University of Benin Teaching Hospital and Central Hospital, Benin-city. The data collection tool was a self-administered questionnaire which consisted of 3 sections. The first section sought information on the socio-demographic characteristics of the respondents. The second section elicited the type of training received by the respondents on behavior management techniques and the respondents' perceived satisfaction with the level of training received. The third section tried to find out the respondents' level of confidence in using the behavior management techniques.

Two questions assessed the training received on behavior management techniques and type of training received (theoretical, clinical or laboratory). Each question required a "yes" or "no" answer. A score of 1 was given for every yes answer and a score of 0 for every no answer. One question assessed the respondents' satisfaction with training received on a 5 point Likert's scale. A score of 1 was awarded to very dissatisfied, a score of 2 to dissatisfied, a score of 3 to unsure, a score of 4 to satisfied and a score of 5 to very satisfied.

Twenty-eight questions assessed the level of confidence in using the behavior management techniques. A 5 point likert scale was used to assess their confidence levels. A score of 1 equals no confidence at all in use of the technique, a score of 2 = slight confidence, 3 = somewhat confident, 4 = moderately confident while a score of 5 = extremely confident. For the purpose of analysis, the 5 point likert scale was combined into 3 categories as follows: not at all confident, somewhat confident (slight confidence, somewhat confidence and moderate confidence) and extremely confident.

The questionnaires were administered to the students during one of their lectures and the interns during a departmental seminar. The questionnaires were collected after being filled by the students and the interns within the hour of administration. Written informed consent was obtained from the study participants.

All data were subjected to statistical analysis in the form of frequencies, percentages, cross tabulations using Statistical Package of Social Science (SPSS) version 21.0 by IBM. Pearson's coefficient correlation analysis was done to establish relationship between various variables with the significant level set at 5%.

Results

There were forty-eight respondents in this study comprising of 33 final year Dental students and 15 interns. Thirty-five were males and thirteen females. More than half (52.1%) of the respondents were in the 25-30 years' age group (Table 1)

Table 1. *socio-demographic characteristics of respondents*

Status	Number of respondents	Percent
Final year students	33	68.7
Interns	15	37.3
Total	48	100.0
Sex		
Male	35	72.9
Female	13	27.1
Total	48	100.0
Age group		
20-25	14	29.2
26-30	25	52.1
>30	9	18.8
Total	48	100.0

Majority (97.9%) of the respondents affirmed to receiving training on behavioral guidance techniques, with 93.6% affirming to have received theoretical form of training, 61.7% claiming to have received clinical form of training on patients and only 6.3% affirming to have received practical/laboratory training on phantom heads (Table 2)

Table 2: *Distribution of training received by respondents on behavior guidance techniques*

Received training	Number of respondents	Percent
Yes	47	97.9
No	1	2.1
Total	48	100.0
Type of training		
Theoretical Yes No Total	 44 4 48	 93.6 8.4 100.0
Clinical Yes No Total	 29 19 48	 61.7 39.6 100.0
Phantom head Yes No	 3 45	 6.3 93.7
Total	48	100.0

Figure 1 depicts the level of satisfaction with training on behavioral guidance techniques for the child dental patient. More than half (58%) were satisfied with their level of training.

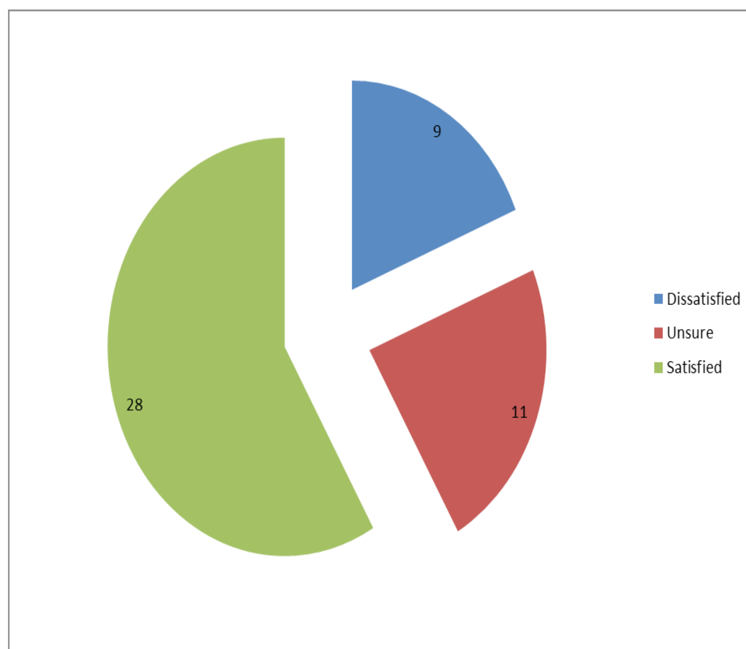

Figure 1. *Satisfaction with training on behavior guidance techniques*

Most of the respondents were not at all confident with using the pharmacological behavioral guidance methods with Nitrous Oxide being the technique in which the highest proportion of respondents were not at all confident using (Table 3).

Table 3. *level of confidence of respondents with use of pharmacological behavior guidance techniques*

Behavior guidance technique	Level of confidence		
	Not at all confident %	Somewhat confident %	Extremely confident %
Nitrous Oxide	64.6	54.2	-
Oral Sedation	37.5	58.4	4.2
Intravenous Sedation	56.5	37.0	6.5
General Anesthesia	58.7	34.7	6.5
Premedication	44.7	49.0	6.4
Conscious sedation	45.8	47.9	6.3

Smiling face, Modelling, tell show do, Friendly environment, Enhancing control, Positive reinforce ment and behavior shaping were the non-pharma cological behavior guidance techniques in which the highest proportion of respondents were somewhat confident and extremely confident employing while managing the pediatric dental patient. Happy smiling face and friendly environment accounted for the non-pharmacological behavior guidance techniques in which the highest proportion of respondents were extremely confident using (Table 4).

Table 4. *level of confidence of respondents with use of non-pharmacological behavior guidance techniques*

Behavior guidance technique	Level of confidence		
	Not at all confident %	Somewhat confident %	Extremely confident %
Hand Over Mouth	18.8	77.2	12.5
Parental leverage	2.1	83.3	14.6
Aversive technique	12.5	75.0	12.5
Tell Show Do	8.5	61.7	29.8
Voice control	4.1	75.5	20.4
Modelling	4.2	60.5	35.4
Papoose-board	22.9	64.7	12.5
Pedi-wrap	28.3	65.2	6.5
Molt prop	18.8	75.1	6.3
Padded blade	32.6	60.9	6.5
Human restraint	10.9	73.9	15.2
Non padded blade	30.4	65.2	4.3
Bite block	21.3	65.9	12.8
Friendly environment	34.6	61.1	38.8
Smiling face	-	59.1	40.8
Enhancing control	-	59.6	34.0
Negative reinforcement	6.4	76.1	10.9
Systemic Desensitization	8.7	71.7	19.6
Distraction	6.1	71.4	22.4
Positive reinforcement	-	69.4	30.6
Behavioral. shaping	-	69.4	30.6

There was no statistically significant association between the age and sex of the respondents and the level of confidence reported while using the pharmacological and non-pharmacological behavior guidance techniques in the child dental patient.

Table 5 depicts the association between status of the respondents and confidence level with the use of pharmacological behavior guidance techniques. Majority (69.7%) of the final year dental students were not at all confident with the use of nitrous oxide and this was statistically significant (p = 0.026). There was no statistically significant association between status of respondents and level of confidence with using the non-pharmacological behavior guidance techniques.

Table 5. *Association between status of respondent and confidence level with using pharmacological behavior guidance techniques*

Status		**Level of confidence**	
NO **p= 0.026**	Not at all confident n (%)	Somewhat confident n (%)	Extremely confident n (%)
Final year	23 (69.7)	10 (30.3)	0 (0.0)
Interns	8 (53.3)	7 (46.6)	0 (0.0)
Total	31 (64.6)	17 (35.5)	0 (0.0)
Oral sedation **p=0.208**			
Final year	14 (42.4)	18 (54.5)	1 (3.0)
Interns	5 (33.3)	9 (60.0)	1 (6.7)
Total	19 (39.6)	27 (56.2)	2 (4.2)
IV sedation **p = 0.334**			
Final year	22 (66.7)	10 (30.3)	1 (3.0)
Interns	6 (30.0)	12 (60.0)	2 (10.0)
Total	28 (58.3)	17 (35.4)	3 (6.3)
GA **p = 0.674**			
Final year	22 (66.7)	9 (27.3)	2 (6.1)
Interns	7 (46.7)	7 (46.6)	1 (6.7)
Total	29 (60.4)	16 (33.3)	3 (6.3)
Premed. **p = 0.566**			
Final year	17 (51.5)	15 (45.4)	1 (3.0)
Interns	5 (33.3)	8 (53.3)	2 (13.3)
Total	22 (45.8)	23 (47.9)	3 (6.3)
Consc. Sedation **p = 0.526**			
Final year	17 (51.5)	15 (45.4)	1 (3.0)
Interns	5 (33.3)	8 (53.3)	2 (13.3)
Total	22 (45.8)	23 (47.9)	3 (6.3)

Discussion

Behavior guidance techniques both non- pharma cological and pharmacological are used to assuage anxiety, foster a positive dental attitude and perform quality oral health care safely and efficiently for infants, children, adolescents and persons with special care needs [3]. In managing a child in the dental clinic, consideration is given to the use of various behavior management techniques available in order to ensure a successful treatment outcome. In the teaching hospital setting, patients are often seen first by the dental students and interns who are on clinical postings to

the clinic. They evaluate behavior of these patients and institute the first behavior management technique as appropriate before such patients are reviewed by the registrars and consultants. It is thus imperative that the students and interns are equipped with the skills to manage behavior displayed by children in the dental setting as many are reported to be fearful at their first visits (4, 5).

Dental practitioners are expected to recognize and effectively treat childhood dental diseases that are within the knowledge and skills acquired during their professional education [3]. It is noteworthy that majority of the participants affirmed to have theoretical training on behavior management techniques and over 50% had received clinical training. A finding similar to earlier reports by Oredugba and Sanu (10) that training in behavior management has improved over time.

In the present study, 6.3% claimed to have received practical training on phantom heads. The majority rely on demonstrations done in the clinic by their senior colleagues. This is in agreement with a previous report by Folayan and Idehen (11) who observed that training has a role to play in use of behavior management techniques when managing a child dental patient. This may also explain why in the current study, 22.9% of the participants are unsure of the level of satisfaction with training received. There is need to improve on the teaching and demonstrations of these techniques as practitioners have been encouraged to utilize behavior guidance techniques that are consistent with their level of professional education and clinical experience [13]. Use of video demonstrations of the various techniques and clinical demonstration on phantom heads have also been advocated (11).

Selection of behavioral management technique to be used must be tailored to the needs of the individual patient and the skills of the practitioner [3]. Majority of the study participants were not confident using the pharmacological behavior management techniques. This may be because they do not think they are skilled enough to use these techniques. Though Nitrous Oxide has been reported to be the most frequently used sedation procedure with the child dental patient [8] it was the technique in which the highest proportion of respondents were not at all confident using. This is explained by the fact that they have not had adequate training in the use of pharmacological techniques especially as these techniques involve the use of pharmacological agents and can only be administered by adequately trained personnel.

Approaches for behavioral management have changed considerably with an increased emphasis on communication and empathic skills [13]. A high level of confidence was reported with the use of the non-pharmacological methods among the respondents in this study, with Smiling face, Modelling, tell show do, Friendly environment, Enhancing control, Positive reinforcement and Behavior shaping being the techniques in which the highest proportion of respondents were confident and extremely confident using. These techniques can be used for any patient and do not have any contraindications.

A happy, smiling face and friendly environment are behavior management techniques that are not dependent on the child and can be used without much experience hence its use among the participants.

Modelling involves the use of patients of same age and gender who are receiving treatment and behaving appropriately. It is widely used in the study setting because, culturally, in our environment, a well behaved child is often used as a standard to instill good behavior in a badly behaved child. A child is told that if she/he misbehaves, he/she brings shame and dishonor to the family. This may have contributed to the increased confidence associated with use of this technique. Furthermore, assessing another parallel aged child or elder sibling having dental treatment fruitfully is thought to be an encouraging influence on an anxious child [1].

Tell-Show-Do is a fundamental principle used in pediatric dentistry whereby the child is introduced gradually to the instrument and/or procedure [1], It involves verbal explanations of procedures in phrases appropriate to the developmental level of the patient (tell); demonstrations for the patient of the visual, auditory, olfactory, and tactile aspects of the procedure in a carefully defined, nonthreatening setting (show); and then, without deviating from the explanation and demonstration, completion of the procedure (do) [3]. The tell-show-do technique is used with communication skills (verbal and nonverbal) and positive reinforcement [1,12,14]. The objectives of tell-show-do are to: teach the

patient important aspects of the dental visit and familiarize the patient with the dental setting, and shape the patient's response to procedures through desensitization and well-described expectations [3]. This may have influenced the acceptability of this technique and boost their confidence to its use. Israeli dentists have been reported to use "Tell Show Do" and material reinforcement more than any other behavior management strategy [16]. In like manner, tell show do was the most common behavior management technique used by dentists in India [8,17].

A number of dental procedures require reasonably composite behaviors and actions from patients that have to be explained and learned. For the child dental patient, this requires definite series of clear steps towards model behavior, a process known as behavior shaping [1]. In the process of establishing this desirable patient behavior, it is essential to give appropriate feedback, hence, positive reinforcement rewards desired behaviors thereby strengthening the likelihood of recurrence of those behaviors [3]. This is most simply accomplished by selective reinforcement, which is the strength of a pattern of behavior, mounting the probability of that behavior being exhibited again in the future [1]. The objective of positive reinforcement and descriptive praise is to reinforce desired behavior [15,18-20]. Giving the above benefits of these techniques, this may have endeared the respondents to these techniques.

The other non-pharmacologic behavioral management seems not to be popular among the respondents. This may be because techniques such as "hand over mouth" have witnessed a marked reduction in its use [21].

The behavior of the dentist and staff members are the primary tools used to guide the behavior of the pediatric patient [3]. A previous study [13] reported no statistically significant association between socio-demographics and profile characteristics with the use of behavior management techniques. This is similar to findings of this study where there was no statistically significant association between the age and sex of the respondents and the level of confidence reported while using the pharmacological and non-pharmacological behavior guidance techniques in the child dental patient.

Clinical experience tends to play a role in the level of confidence exhibited with use of Nitrous Oxide. Therefore, it is important that young dentists be adequately trained in the use of pharmacological behavior management techniques as they may encounter patients who are unable to cooperate due to lack of psychological or emotional maturity and/or mental, physical or medical disability in the course of their practice life.

Conclusion

The participants in the study reported satisfaction with training on behavior management techniques, however, this did not translate to significant confidence when using these methods while treating a child patient in the clinic. The training of dental students in behavior management techniques should be reviewed and should include practical, hands-on training and clinical demonstrations of the various methods at the chair-side.

Recommendations

Training in behavior guidance techniques should be more intensive. This is vital to the delivery of dental care in children and should include not just theoretical training but practical demonstrations. The different methods should be demonstrated in the clinic while students are on rotation. Films showing the demonstrations of the various techniques can also be used for teaching and discussion in the clinic.

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