

SURVEY

Knowledge, Attitude, and Practices of Dental Surgeons in managing Child Patients

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ABSTRACT

The aim of the study was to evaluate the knowledge, attitude, and practices of dental surgeons in the city of Karachi providing treatment to pediatric patients. A cross-sectional study was conducted to evaluate the knowledge, attitude, and practices of dental surgeons in the city of Karachi providing treatment to pediatric patients. A cluster-sampling technique was used and 200 dental surgeons from six different dental institutions were selected. A self-constructed questionnaire was distributed to the dental surgeons that comprised 20 closed-ended questions. The data was entered and analyzed for frequency and percentages by using Statistical Package for the Social Sciences (SPSS) version 19. The results showed that 76 (38%) dental surgeons took the responsibility of managing pediatric patient when given; 68 (34%) dental surgeons allowed the parents in the clinic; 111 (55.5%) dental surgeons are of the view that colorful and fun environment in dental clinic make the child at ease; 59 (29.5%) always demonstrate the dental procedure to the child to eradicate imaginary fears; 94 (47.0%) dental surgeons preferred the child to be treated in general anesthesia (GA) to avoid difficult behavior of the child; 135 (67.5%) dental surgeons did not show syringe needle or any instrument to the child. All the members of dental profession must be aware of patient perceptions, preferences, and fear to meet patient's needs. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent practice in pediatric dentistry.

Keywords: Attitude and practices, Behavioral techniques, Pediatric patients.

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INTRODUCTION

Dental surgeons are expected to diagnose and manage effectively childhood dental diseases that are within the knowledge and skills acquired during dental education.¹ Safe and effective treatment provided often requires modifying the child's behavior.² Pediatric dentistry is considered to be the most needed and yet neglected area of all the services performed by the dental surgeons.³ The auxiliary staff, as well as the clinical team, should be welcoming and friendly.⁴ Communication with the children should be age-specific, and the dental team should develop a specialized vocabulary.⁵ A child's future attitude toward dentistry may be determined by a series of successful experiences in a pleasant dental environment. Dental surgeons should be encouraged to increase and update their clinical skills and knowledge in behavior guidance techniques by reading dental literature, observing video presentations, or attending continuing education programs.⁶ The establishment of good relationship between dentist and the child has been shown to increase the success of treatment in terms of the child's cooperation during the treatment or advice for prevention.⁷ Parents exert a significant influence on their child's behavior, especially if they had previous negative dental experiences.⁸⁻¹⁰ An anxious or fearful parent may affect the child's behavior negatively.^{8,9,11} Educating the parent before the child's first appointment is important, and effective communication with more demanding parents represents an opportunity for the dental surgeon to carefully review behavior and treatment options and together decide what is in the child's best interests.¹² Dental surgeons have the same opinion that good communication is important amongst the dentist, patient, and parent in building trust and confidence.^{12,13} Communication skills of the dental surgeons play an important role in behavior guidance and the health professionals may be inattentive to communication style, but parents/patients are very attentive to it.¹⁴ Dental surgeons behaviors reported to correlate with low parent satisfaction include rushing through appointments, not taking time to explain the procedures, barring parents from the examination room, and generally being impatient.¹⁵ Dental surgeons behavior of vocalizing, directing, empathizing, persuading, giving the patient a feeling of control, and operant conditioning have

been reported as efficacious responses to uncooperative patient behaviors.¹⁶ The most common emotional upsets seen during dental treatment are anxiety and fear, which might originate from a previous traumatic experience in the dental office or during hospitalization for other reasons.¹⁷ Dental anxiety and fear of dental treatment in children are considered to be the main reason for management problems and avoidance of dental care. These problems sometimes require replacement of conventional treatment with more complicated alternatives, such as sedation or general anesthesia (GA).¹⁸ Children who have positive interactions with their dentist will be more likely to visit the dentist and will have better dental health.¹⁹ Moreover, pediatric dentistry demands the use of diagnostic aids as well as correct interpretation of findings both in emergency and in routine problems.²⁰ Various barriers including developmental delay, physical/mental disability, and acute or chronic disease all are potential reasons for noncompliance and may hinder the achievement of a successful outcome. To alleviate these barriers, the dental surgeon should become a teacher and the methods should include active listening and observation of child's body language.²¹ Shortcoming of most of the dental surgeons when treating children is their lack of knowledge, clinical skill, or attention to the vital performance of providing and assuring profound local anesthesia. Most of the dental surgeons felt uncomfortable with their clinical skills and avoid giving children local anesthesia. For this vision to become reality, many more dental professionals will need to be aware of and skilled in the communication management methods advocated by the American Academy of Pediatric Dentistry.²²

Therefore, the aim of the study was to evaluate the knowledge, attitude, and practices of dental surgeons in the city of Karachi providing treatment to pediatric patients.

MATERIALS AND METHODS

Study Design

A cross-sectional study was conducted in May 2014 to February 2015 to evaluate the knowledge, attitude, and practices of dental surgeons in the city of Karachi providing treatment to pediatric patients.

Ethical Approval

The study was approved by the Ethical Committee, Baqai Medical University.

Sampling Technique

A cluster-sampling technique was used and 200 dental surgeons from six different dental institutions were selected. A self-constructed questionnaire (Fig. 1) was distributed to

the dental surgeons that comprised 20 closed-ended questions, including the parental influence, communication with the child, decorations and accouterments depicting definite settings, importance of demonstrating a child about treatment, sedative procedures, and various barriers that hinder the dental treatment.

Inclusion Criteria

Dental surgeons with the clinical experience of 3 years and above currently working in dental institutes of Karachi.

Exclusion Criteria

Clinical experience below 3 years. Currently not working in a dental institution.

Statistical Analysis

The data was entered and analyzed for frequency and percentages by using Statistical Package for the Social Sciences (SPSS) version 19.0.

RESULTS

The present study comprised 200 dental surgeons of experience level 3 years and above. Table 1 shows the descriptive analysis of the knowledge, attitude, and practices of dental surgeons providing treatment to pediatric patient. Results showed that 76 (38%) dental surgeons took the responsibility of managing pediatric patient when given; 68 (34%) dental surgeons allowed the parents in the clinic as a spectator to encourage and assure the child to work in a satisfactory manner; 111 (55.5%) dental surgeons are of the view that colorful and fun environment in dental clinic makes the child at ease, while 67 (33.5%) dental surgeons think that having a handy music system/video will provide comfort to frightened children; 59 (29.5%) always demonstrate the dental procedure to the child to eradicate imaginary fears; 102 (51%) preferred not to inform the child that the dental procedure could involve pain. Table 2 shows behavior attributes of dentists toward pediatric patients; 109 (54.5%) dental surgeons preferred to treat the child without anesthesia to prevent from unpredictable behavior of child; 94 (47.0%) dental surgeons preferred the child to be treated in GA to avoid difficult behavior of the child; 135 (67.5%) dental surgeons did not show syringe needle or any instrument to the child as a good policy to carry out the treatment; 105 (52.5%) praised the good behavior of child to acknowledge exemplary conduct in a child. Table 3 shows sedation techniques used by dental surgeons on pediatric patient. Of dental surgeons, 76 (38.0%) occasionally allow the parents to take part in treatment verbally to approach the psychological

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Do you take the responsibility of working on child when needed?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>11. Do you use sentences to encourage the child not to be a coward?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>2. Do you allow the parent in the clinic while the dental treatment is being performed?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>12. Do you allow the parent to talk to his/her child while the child receives dental treatment?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>3. Do you think keeping office decorations and accoutrements attractive to children and play any role in treatment?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>13. Do you ever modify your voice volume, tone, or pace to direct the child's behavior?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>4. Do you think playing video or music to direct the child's focus away from the dental treatment?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>14. Do you allow the child to speak since he/she may interfere with the treatment?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>5. Do you demonstrate the procedure to child patient what is to be done?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>15. Do you allow the patient to stop the treatment when discomfort is felt?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>6. Do you aware the child that dentistry may involve pain?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>16. If a child is quiet during the treatment, is it acceptable for you not to speak?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>7. Is it acceptable for you to treat the child without anesthesia?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>17. Do you place your hand over the mouth of a hysterical or out-of-control child to achieve silence?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>8. Do you prefer the child to be treated under general anesthesia in a hospital to avoid awareness of the dental experience?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>18. Do you immobilize the child by yourself, the dental staff, and/or a parent when needed?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>9. Do you use nitrous oxide inhalation or drugs to sedate the child?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>19. Do you praise the child when he/she does something is asked to do?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |
| <p>10. Do you show the needle of a syringe and dental instruments to a child?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never | <p>20. Do you promise the child any complimentary gift if he/she cooperates with you?</p> <ul style="list-style-type: none"> • Always • Often • Sometimes • Never |

Fig. 1: Questionnaire

Table 1: Descriptive analysis of the knowledge, attitude, and practices of dental surgeons providing treatment to pediatric patients

Questionnaire	Mean	Standard deviation
Responsibility of managing child patient	2.09	0.939
Allow parent in clinic	2.17	1.020
Keep office decor	1.65	0.838
Talking and playing video or music to distract the child	2.24	1.085
Demonstrate procedure	2.32	1.078
Aware child of pain	3.14	1.059
Treat without anesthesia	3.34	0.841
Prefer GA for treatment	3.34	0.816
Nitrous oxide inhalation to sedate	3.06	0.671
Don't show needle of syringe	3.46	0.907
Encourage child not to be coward	1.85	1.060
Allow parent to interrupt	2.46	1.031
Modify voice, tone to direct child behavior	2.22	1.018
Allow child to speak	2.48	0.997
Patient to stop treatment on discomfort	1.93	1.010
Stop hysterical child by hand on mouth	3.49	0.845
Immobilize the child	2.91	0.920
Praise the child	1.68	0.934
Give complimentary gifts	2.46	2.288

Table 3: Sedation techniques used by dental surgeons on pediatric patient

Questionnaire	Frequency and percentages			
	Always	Often	Sometimes	Never
Who aware the child about involvement of pain	25 (12.5%)	25 (12.5%)	48 (24%)	102 (51%)
Who treat the child without anesthesia	7 (3.5%)	27 (13.5%)	57 (28.5%)	109 (54.5%)
Who prefer the child to be treated in GA	9 (4.5%)	34 (17%)	94 (47%)	63 (31.5%)
Who use nitrous oxide inhalation to sedate the child	14 (7.0%)	15 (7.5%)	36 (18%)	140 (70%)
Who do not show needle of syringe/ instrument to child	14 (7.0%)	15 (7.5%)	36 (18%)	135 (67.5%)

management of the patient; 61 (30.5%) tended to modify their voice, tone to direct child's behavior; 80 (40%) gave the child an opportunity to participate in the procedures; 94 (47.0%) of dental surgeons deferred the treatment when discomfort is felt; 69 (34.5%) dental surgeons chose not to engage the child in a conversation if he is not willing or showing interest; 136 (68%) dental surgeons never placed their hand on the mouth of a screaming spoiled child; 90 (45%) dental surgeons immobilize the child by their self and avoid any auxiliary help; 116 (58%) dentists praise

Table 2: Behavior attributes of dentists toward pediatric patients

Questionnaire	Frequency/percentages			
	Always	Often	Sometimes	Never
Dental surgeons that manage pediatric patients	73(36.5%)	44(22%)	76(38%)	7(3.5%)
Dental surgeons that allow parents in dental clinic	68(34%)	50(25%)	61(30.5%)	21(10.5%)
Dental surgeons keep off decor attractive	111(55.5%)	56(28%)	26(13%)	7(3.5%)
Talking and playing video or music to distract the child	67(33.5%)	50(25%)	51(25.5%)	32(16%)
Dental surgeons who demonstrate the procedure to child	59(29.5%)	54(27%)	52(26%)	35(17.5%)
Dental surgeons who encourages child not to be coward	105(52.5%)	44(22%)	27(13.5%)	24(12%)

Table 4: Different treatment modalities by dental surgeons

Questionnaire	Frequency and percentages			
	Always	Often	Sometimes	Never
Who modify their tone to direct child's behavior	61(30.5%)	59(29.5%)	55(27.5%)	25(12.5%)
Who allow child to speak during treatment	44(22%)	46(23%)	80(40%)	30(15%)
Who stop treatment when discomfort is felt	94(47.0%)	41(20.5%)	50(25%)	15(7.5%)
Who do not speak if child is quiet	42(21%)	43(21.5%)	69(34.5%)	46(23%)
Who place hand-over-mouth of hysterical child	7(3.5%)	25(12.5%)	32(16%)	136(68%)
Who immobilize the child by themselves	20(10%)	34(17%)	90(45%)	56(28%)
Who praise child when obeys command	116(58%)	45(22%)	26(13%)	13(6.5%)
Who promise complimentary gifts	58(29.0%)	52(26%)	57(28.5%)	32(16%)

the child if he obeys a command in a determined way; 58 (29%) dental surgeons promised to gift or reward a child to attain his maximum cooperation. Table 4 shows treatment modalities by different dental surgeons.

DISCUSSION

Results showed that 76 (38%) of the dental surgeons took the responsibility of managing pediatric patients in

dental clinics. The present survey done was one of the first kind to assess the behavior and attitudes of dental surgeons in Pakistan toward managing and treating pediatric patients. The findings from this survey that 38% of the dental surgeons provide treatment to children is not encouraging. Dental surgeons may simply be reluctant to see children so young because they perceive them to be difficult to examine. Further, they may not know what to do if, during the examination, it is discovered that the child will require further treatment. Educational programs should be planned for dental surgeons to improve their knowledge and skills in providing treatment to children.²² A survey done in Saudi Arabia reported that 85% of the dental surgeons treat children which is encouraging.²³ Another study conducted by Seale and Casamassimo²⁴ reported that more than 90% of dental surgeons provide treatment to children younger than 4 years of age.

Pain management during dental procedures is essential for successful behavior guidance and enhancing positive dental attitudes for future appointments. Listening to the child and observing their behavior at first sign of distress would help in diagnosing the situation and facilitate proper behavior guidance techniques.²⁵ Children perceive and react to painful stimuli differently from each other and under the age of 4 years are more sensitive to painful stimuli and are not able to communicate as well as older children and teens.^{21,26} Observing behavior and listening to children during treatment are essential in any evaluation of pain. Facial expressions, crying, complaining, and body movement are important diagnostic criteria.^{25,27-30} The present study reported that 25 (12.5%) dental surgeons developed trust and explained the child about the nature of pain perception during dental procedures.

Parental accompaniment can significantly affect the atmosphere surrounding the dental visit and dental treatment and may sometimes enhance and sometimes hinder the progress of the child's treatment.⁷ The present study results showed that 68 (34%) of the dental surgeons allowed parents in dental clinic. Levy and Domoto³¹ reported that 88% of dental surgeons and auxiliary staff allowed parents in the dental clinics. A survey done by the Association of Pedodontic Diplomats,³² nearly 90% of the dental surgeons allowed parents in the dental clinic. Another study³³ reported that 35% of general dentists and 87% of pediatric dental surgeons allowed parents in the operatory.

Behavior guidance is a clinical art form and a skill built on a foundation of science with the goals to establish communication, alleviate fear and anxiety, deliver quality dental care, build a trusting relationship between dentist, child, and parent, promote the child's positive attitude to

dental health.² The most popular technique for managing children was tell-show-do and was reported by 213(93%) dental surgeons as their most commonly used behavioral management strategy followed by 149(69%) reported voice control. The technique dentists were least comfortable with was hand-over-mouth; 7(3%) dental surgeons reported feeling uncomfortable with hand-over mouth techniques, followed by 5(2%) with the papoose board.³⁴⁻³⁶ The present study results reported that 67(33.5%) of the dental surgeons used distraction technique followed by 61(30.5%) used voice control technique, 59(29.5%) tell-show-do technique, 20(10%) used papoose board, and 7(3.5%) used hand-over-mouth technique.

Dental surgeons make every effort to reduce or eliminate pain and anxiety experienced by children, but also to improve patient manageability and satisfaction.³⁷ Klassen et al³⁸ considered whether music could help control pediatric pain and anxiety. Filcheck et al³⁹ found no differences in disruptive behaviors between music therapy and placebo overall, or by level of disruptiveness, there was a significant difference among the uncooperative children with respect to disruptive behaviors, crying and complaining, and physical restraint required. The present study reported that 67 (33.5%) dental surgeons play music/video to distract the child's focus away from dental treatment.

Most children can be managed effectively using the techniques outlined in basic behavior guidance and these techniques should form the foundation for all of the management activities provided by the dental surgeon. The advanced behavior guidance techniques commonly used and taught in advanced pediatric dental training programs include protective stabilization, sedation, and GA.¹⁸ The sedation of children is different from the sedation of adults; sedation in children often is administered to control behavior to allow the safe completion of the dental procedure. A child's ability to control his or her own behavior to cooperate for a procedure depends both on his or her chronologic and developmental age.⁴⁰

Nitrous oxide (N₂O) is an attractive agent for pediatric procedural sedation because it provides rapid onset and offset of sedation. Most research has used 50% N₂O, and there have been concerns regarding the variability of the sedation provided.^{41,42} A study done by Sarah et al reported that only 12 (6%) of the dental surgeons preferred to use nitrous oxide as a behavioral management technique.⁴³ Another study results reported that 159 (73%) of the dental surgeons were totally comfortable with nitrous oxide sedation technique.⁷ The present study results showed that 14 (7%) dental surgeons preferred to use nitrous oxide to sedate children.

Despite the risk of adverse events of GA, dental treatment performed in a hospital is generally considered

safe.⁴⁴ Pediatric dentists reported a favorable attitude toward dental treatment under GA, and many reported an increasing interest in utilizing this modality more frequently in their dental practices.⁴⁵ Comprehensive dental care under GA is often more efficient and cost effective than repeated dental visits for restorative care utilizing other sedation methods.⁴⁶ Dental restorations performed under GA, especially for the treatment of early childhood caries, are reported to have greater quality and durability than restorations placed under conscious sedation.^{47,48} Kain et al⁴⁹ showed greater compliance during anesthetic induction. A study done by Manal et al reported that more than 50% of the general dentists and 60% of the pediatric dental surgeons reported the use of GA.⁵⁰ In the survey by McKnight-Hanes et al,³⁵ 60% of the pediatric dentists used GA in oral rehabilitation. It is likely that the differences are due to the fact that more than 60% of the dental surgeons were working in hospitals where facilities were usually provided for the utilization of GA. A study done by Crossley and Joshi⁷ reported that 98(45%) dental surgeons performed treatment under GA. The present study results showed that 9(4.5%) of the dental surgeons preferred the child to be treated in GA. Klingberg and Broberg⁵¹ reported that children and adolescents were expected to experience mild fear and anxiety during their dental treatment. Fear may be observed in children, adults, and the elderly, and it is suggested that young children and females are more likely to suffer from needle phobia.⁵² The present study results showed that 14(7%) of the dental surgeons showed needle to children during treatment.

CONCLUSION

All the members of dental profession must be aware of patients' perceptions, preferences, and fear to meet patient's needs. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent practice in pediatric dentistry.

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