Cumhuriyet Dental Journal: 2018; 21(4)
Doi: 10.7126/cumudj. 466826 *RESEARCH ARTICLES*

KNOWLEDGE, ATTITUDE AND PRACTICES OF ORAL AND MAXILLOFACIAL SURGEONS REGARDING BEHAVIOR GUIDANCE TECHNIQUES FOR MANAGING CHILD PATIENTS

Ağız, Diş ve Çene Cerrahisi Uzmanlarının Çocuk Hastalarda Uygulanan Davranış Yönlendirme Tekniklerine İlişkin Bilgi, Tutum ve Uygulamaları

Aydın KESKINRUZGAR[1], Ayse OZCAN KUCUK[2], Ebru DELIKAN[3]

Makale Kodu/Article Code *: 466826*

Makale Gönderilme Tarihi *: 03.10.2018*

Kabul Tarihi *:27.11.2018*

ABSTRACT

Objectives: The aim of this study was to evaluate the knowledge, attitude, and practices of oral and maxillofacial surgeons regarding behavior guidance techniques that reduced fear and anxiety for children.

Materials and Methods: In this cross-sectional study, the participants were oral and maxillofacial surgeons who treat pediatric dental patients in the private and public clinics in Turkey. The questionnaires were applied through an electronic form via a website. The results were evaluated using IBM SPSS Statistics 22 for statistical analysis. A p-value of <0.05 was accepted as statistically significant.

Results: 60% of the participants were specialist trainees, 9% were doctoral students, 16% were oral and maxillofacial surgeons and 15% were lecturers in the department of oral and maxillofacial surgery of various universities. 45% of the participants said they could always take responsibility of working on a pediatric patient, while 33% of them stated that they frequently treated child patients, and 22% of them sometimes took this responsibility. 55% of the participants said they had been trained in behavior guidance techniques for children. The result showed that 93% of the surgeons used tell-show-do, 69% used voice control, 27% used nonverbal communication, 73% used positive reinforcement, 61% utilized distraction techniques, 59% used presence-absence of parents, 15% used hand-over-mouth, 36% used sedation, 36% used restrain/protective stabilization, 46% used general anesthesia, and 2% had used hypnosis method.

Conclusion: This study showed that the oral and maxillofacial surgeons working in public and private clinics have a high awareness of behavior guidance techniques while the level of this awareness varies among surgeons according to age, gender, workplace, work experience, and training.

Keywords: Behavioral guidance techniques, awareness, pediatric patients, oral and maxillofacial surgeon

ÖZ

Amaç: Bu çalışmanın amacı, kamu ve özel kliniklerde çocuk hastalara tedavi hizmeti veren ağız, diş ve çene cerrahlarının korku ve kaygıyı azaltan davranış yönlendirme tekniklerine ilişkin bilgi, tutum ve uygulamalarını değerlendirmektir.

Gereç ve Yöntemler: Bu kesitsel çalışmada, katılımcılar Türkiye'deki özel ve kamu kliniklerinde çocuk hastaları tedavi hizmeti veren ağız ve çene cerrahlarıdır. Anketler bir web sitesi üzerinden elektronik form aracılığıyla uygulandı. Çalışmada elde edilen bulgular IBM SPSS Statistics 22 (IBM SPSS, Türkiye) programı kullanılarak değerlendirildi. Anlamlılık p<0,05 düzeyinde değerlendirildi.

Bulgular: Katılımcıların %60'ı uzmanlık öğrencisi, %9'u doktora öğrencisi, %16'sı ağız diş ve çene cerrahı, %15'i üniversitede ağız diş ve çene cerrahisi bölümünde öğretim üyesiydi. Hekimlerin %45'i her zaman çocuk hastada çalışma sorumluluğunu alabildiğini söylerken, %33'ü sık sık, %22'si bu sorumluluğu bazen aldığını belirtti. Katılımcıların %55'i çocuklarda davranış yönlendirme teknikleri hakkında eğitim aldığını belirtti. Katılımcıların kullandıkları davranış yönlendirme teknikleri sorulduğunda, %93'ünün anlat-göster-uygula, %69'unun ses kontrolü, %27'sinin sözsüz iletişim, %73'ünün pozitif destekleme, %61'inin ilgiyi dağıtma, %59'unun ebeveyn varlığı-yokluğu, %15'inin ağzın elle örtülmesi, %36'sının çocuğun sabitlenmesi, %36'sının sedasyon, %46'sının genel anestezi ve %2'sinin hipnoz yöntemini kullandığı tespit edildi.

Sonuç: Bu çalışmanın sonuçları, çene cerrahlarının davranış yönlendirme teknikleri konusundaki farkındalığının yüksek olduğunu ve bu farkındalığın yaş, cinsiyet, çalışma yeri, çalışma deneyimi ve eğitime göre bireysel farklılık oluşturduğunu göstermektedir.

Anahtar kelimeler: Davranış yönlendirme teknikleri, farkındalık, pediatrik hasta, ağız diş ve çene cerrahı

[1] Adıyaman University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Adıyaman, Turkey
[2] Mersin University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Mersin, Turkey
[3] Mersin University, Faculty of Dentistry, Department of Pediatric Dentistry, Mersin, Turkey

INTRODUCTION

Dental procedures, such as tooth extraction or treatment, cause a great deal of fear and anxiety among the majority of child patients. Especially, painful dental procedures cause anxiety and worsen children's behavior.[1] For this reason, children who have had previous tooth extraction feel more pain, fear, and discomfort. These emotions can cause serious difficulties during the procedure by resulting in non-collaborative behaviors during subsequent dental appointments.[1,2]

On the other hand, it has been shown that as children become more familiar and experienced with dental procedures, they adapt and cooperate more easily. The experience gained in previous dental appointments helps the child get accustomed to dental procedures and identify the non-threatening aspects of dental appointments.[3] In addition, in some children, the choice of the dentist's persuasive approach can affect the behavior of the child positively, enabling cooperation between the physician and the child.

Oral and maxillofacial surgeons are expected to manage pediatric surgical procedures effectively with the knowledge and skills they acquire during dental school education. However, ensuring safe and effective treatment during dental procedures often requires changing the behavior of the child. The purpose of guiding behaviors during treatment of children is to provide an environment that will facilitate the child's acceptance of treatment, especially in cases of frightening and anxiety-causing procedures such as tooth extraction. Providing these conditions depends on the practitioner's experience and skills in using appropriate behavior guidance techniques.[4,5] Behavioral guidance techniques include communication, fear and anxiety relief, providing quality dental care, establishing a reliable relationship between the dentist, the child and the parent, and to encourage the child to positively approach the dental treatment.[6]

The aim of this study was to evaluate the knowledge, attitude, and practices of oral and maxillofacial surgeons regarding behavior guidance techniques that reduced fear and anxiety for children.

MATERIALS AND METHODS

The study protocol was approved by the Mersin University Non-invasive Clinical Research Ethics Committee (2018/48). This cross-sectional study was performed between January 1 and July 1, 2018, and the participants were oral and maxillofacial surgeons who treat pediatric dental patients in the oral and maxillofacial surgery clinics in Turkey. The questionnaires were applied through an electronic form via a website and the participants were informed about the study at the beginning of the survey.

Oral and maxillofacial surgeons working at the universities, Oral and Dental Health Centers (ODHCs), private practices or private clinics providing pediatric treatment services, or specialist or doctoral students studying in this field were included in the study.

Surveys were prepared as electronic forms. In order to prevent non-specialists from participating in the survey, 211 oral and maxillofacial surgeons, who were contacted through e-mail, were asked to fill in the surveys.

The results were evaluated using IBM SPSS Statistics 22 (SPSS IBM, Turkey) for statistical analysis. Chi-square test, Fisher's Exact Chi-square test, Continuity (Yates) correction and Fisher Freeman Halton test were used to compare qualitative data as well as the descriptive statistical methods (frequency). A p-value of <0.05 was accepted as statistically significant.

RESULTS

100 out of 211 oral and maxillofacial surgeons answered the questionnaire. The participation rate was 48%. 27% of the oral and maxillofacial surgeons participating in the survey were

female and 73% were male. 60% of the participants were specialist trainees, 9% were doctoral students, 16% were oral and maxillofacial surgeons, and 15% were lecturers in the department of oral and maxillofacial surgery of various universities. 68% of the participants were between the ages of 23-30, 25% between the ages of 31-40, and 7% between the ages of 41-50. 87% of the participants had a work experience of 1-5 years, 8% had 5-10 years, and 5% had 10 or more years. 87% were working in the faculty of dentistry of different universities, 7% were in private practice or clinics, and 6% were working in ODHCs (Table 1).

Table 1: Demographics distribution of participants

		n	%
Sex	Female	27	27
	Male	73	73
Title	Specialist students at the university	60	60
	Doctoral students at the university	9	9
	Oral and maxillofacial surgeon	16	16
	Lecturer at the university	15	15
Age	20-30	68	68
	31-40	25	25
	41-50	7	7
Working experience	1-5 years	87	87
	5-10 years	8	8
	10 years and over	5	5
Type of practice	Private practices or private clinics	7	7
	Oral and Dental Health Centers	6	6
	Faculties of Dentistry	87	87

45% of the participants said they could always take responsibility of working on a pediatric patient, while 33% of them stated that they frequently treated child patients, and 22% of them sometimes took this responsibility. 55% of the participants said they had been trained in behavior management techniques for children.

While 79% of oral and maxillofacial surgeons thought that they needed family permission to conduct behavioral guidance, 25% of them stated that they always used behavior guidance techniques for child patients.

When we asked about the behavior guidance techniques used by the surgeons, they used; 93% used tell-show-do, 69% used voice control, 27% used nonverbal communication, 73% used positive reinforcement, 61% utilized distraction techniques, 59% used presence-absence of parents, 15% used hand-over-mouth, 36% used sedation and restrain/protective stabilization, 46% used general anesthesia, and 2% had used hypnosis method.

98% of the respondents gave a "no" answer when asked "Are all of the behavior management techniques appropriate for every child?" question. When asked, "Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?" 7% of the respondents answered “always”, 17% stated “often”, 33% said “sometimes”, 43% responded “never”.

When the participants were asked "Do you allow the child to talk or ask questions during treatment?", 19% answered “always”, 53% said “often”, 27% stated “sometimes”, 1% responded as “never”.

When asked "Do you stop the treatment when the child feels uncomfortable?", 23% of the respondents answered “always”, 41% responded “often”, and 36% said “sometimes”.

When they were asked "Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?", 5% answered “always”, 27% “often”, 58% “sometimes”, 10% responded “never” (Table 2).

Table 2: The distribution of responses to the survey questions

		n	%
Taking the responsibility of working in a child patient when needed	Always	45	45
	Often	33	33
	Sometimes	22	22
	Never	0	0
Training in behavioral guidance techniques in children	Yes	55	55
	No	45	45
Purpose in behavioral guidance techniques;	To increase child's alignment	11	11
	To establish and strengthen surgeon-child relationship	22	22
	Efficient and short-term treatment	6	6
	Reduce worry	1	1
	All	60	60
The need to get family approval to conduct behavioral guidance	Yes	79	79
	No	21	21
Use of behavior guidance techniques in children	Always	25	25
	Often	30	30
	Sometimes	44	44
	Never	1	1
Used behavior guidance techniques for child patients	Tell-show-do	93	93
	Voice control	69	69
	Nonverbal communication	27	27
	Positive reinforcement	73	73
	Distraction techniques	61	61
	Presence-absence of parents	59	59
	Hand-over-mouth	15	15
	Restrain/protective stabilization	36	36
	Hypnosis	2	2
	Sedation	36	36
	General anesthesia	46	46
	None	0	0
Are all of the behavior management techniques appropriate for every child?	Yes	2	2
	No	98	98
Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?	Always	7	7
	Often	17	17
	Sometimes	33	33
	Never	43	43
Do you allow the child to talk or ask questions during treatment?	Always	19	19
	Often	53	53
	Sometimes	27	27
	Never	1	1
Do you stop the treatment when the child feels uncomfortable?	Always	23	23
	Often	41	41
	Sometimes	36	36
Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?	Always	5	5
	Often	27	27
	Sometimes	58	58
	Never	10	10

There was no statistically significant difference in the frequency of dentists for taking responsibility of pediatric dental patients with regards to gender (p>0.05). Although more female dentists (70.4% of female participants) stated that they received education on behavioral guidance techniques in children compared to male surgeons (49.3% of male participants), the difference was not statistically significant (p>0.05). There was no statistically significant difference between male and female participants with respect to the belief that family members should obtain permission from the family to conduct behavioral guidance (p>0.05). On the other hand, there was a statistically significant difference between the frequency of use of behavior guidance techniques in children with respect to gender (p=0.001), where the female surgeons were significantly more likely to use behavior guidance techniques (51.9%) than males (15.1%).

The rate of use of voice control by female physicians (88.9%) was significantly higher than that of males (61.6%) (p=0.018). The rate of use of parental presence/absence by female surgeons (92.6%) was also significantly higher than that of males (46.6%) (p=0.000). Nevertheless, there was no statistically significant difference in the rates of use of other behavior-orienting techniques between the participants with different genders (p>0.05).

There was a statistically significant difference between the frequencies of "not talking at all if the child patient is quiet and cooperative" (p=0.008), where the rate of the male dentists who prefer to not talk often (23.3%) was significantly higher than that of females (0%) (Table 3).

Table 3: Assessment of responses to questionnaires according to sex

		Female n (%)	Male n (%)	P
Taking the responsibility of working in a child patient when needed	Always	13 (48.1%)	32 (43.8%)	[1]0.253
	Often	11 (40.7%)	22 (30.1%)	
	Sometimes	3 (11.1%)	19 (26%)	
Training in behavioral guidance techniques in children	Yes	19 (70.4%)	36 (49.3%)	[2]0.098
	No	8 (29.6%)	37 (50.7%)	
Purpose in behavioral guidance techniques;	Increase your child's alignment	1(3.7%)	10 (13.7%)	[3]0.161
	To establish and strengthen surgeon-child relationship	3 (11.1%)	19 (26%)	
	Efficient and short-term treatment	2 (7.4%)	4 (5.5%)	
	Reduce worry	0 (0%)	1 (1.4%)	
	All	21 (77%.8)	39 (53.4%)	
The need to get family approval to conduct behavioral guidance	Yes	20 (74.1%)	59 (80.8%)	[2]0.646
	No	7 (25.9%)	14 (19.2%)	
Use of behavior guidance techniques in children	Always	14 (51.9%)	11 (15.1%)	[3]0.001*
	Often	7 (25.9%)	23 (31.5%)	
	Sometimes	6 (22.2%)	38 (52.1%)	
	Never	0 (0%)	1 (1.4%)	
Used behavior guidance techniques for child patients	Tell-show-do	27 (100%)	66 (90.4%)	[4]0.185
	Voice control	24 (88.9%)	45 (61.6%)	[2]0.018*
	Nonverbal communication	11 (40.7%)	16 (21.9%)	[2]0.103
	Positive reinforcement	24 (88.9%)	49 (67.1%)	[2]0.054
	Distraction techniques	18 (66.7%)	43 (58.9%)	[2]0.634
	Presence-absence of parents	25 (92.6%)	34 (46.6%)	[2]0.000*
	Hand-over-mouth	6 (22.2%)	9 (12.3%)	[4]0.224
	Restrain/protective stabilization	10 (37%)	26 (35.6%)	[2]1.000
	Hypnosis	1 (3.7%)	1 (1.4%)	[4]0.469
	Sedation	7 (25.9%)	29 (39.7%)	[2]0.298
	General anesthesia	14 (51.9%)	32 (43.8%)	[2]0.625
Are all of the behavior management techniques appropriate for every child?	Yes	1 (3.7%)	1 (1.4%)	[4]0.469
	No	26 (96.3%)	72 (98.6%)	
Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?	Always	3 (11.1%)	4 (5.5%)	[3]0.008*
	Often	0 (0%)	17 (23.3%)	
	Sometimes	8 (29.6%)	25 (34.2%)	
	Never	16 (59.3%)	27 (37%)	
Do you allow the child to talk or ask questions during treatment?	Always	7 (25.9 %)	12 (16.4%)	[3]0.171
	Often	10 (37%)	43 (58.9%)	
	Sometimes	10 (37%)	17 (23.3%)	
	Never	0 (0%)	1 (1.4%)	
Do you stop the treatment when the child feels uncomfortable?	Always	9 (33.3%)	14 (19.2%)	[1]0.321
	Often	10 (37%)	31 (42.5%)	
	Sometimes	8 (29.6%)	28 (38.4%)	
Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?	Always	1 (3.7%)	4 (5.5%)	[1]0.472
	Often	6 (22.2%)	21 (28.8%)	
	Sometimes	19 (70.4%)	39 (53.4%)	
	Never	1 (3.7%)	9 (12.3%)	

[1]Chi-square test [2]Continuity (yates) correction [3]Fisher Freeman Halton Test [4]Fisher Exact Test [*]p<0.05

There was a statistically significant difference (p=0.012) between participants from different age groups with respect to the rate of receiving education in behavior guidance techniques for children. 85.7% of the surgeons between the

ages of 41-50, 60.3% of the surgeons between the ages of 23-30, and 32% of the surgeons between the ages of 31-40 received an education on these techniques. There were also statistically significant differences (p=0.000, p=0.042, p=0.001) in using the voice control, distraction and use of hand over mouth technique with respect to age (Table 4).

Table 4: Assessment of responses to questionnaires according to age

		23-30 years n (%)	31-40 years n (%)	41-50 years n (%)	p
Taking the responsibility of working in a child patient when needed	Always	31 (45.6%)	10 (40%)	4 (57.1%)	[1]0.504
	Often	23 (33.8%)	7 (28%)	3 (42.9%)	
	Sometimes	14 (20.6%)	8 (32%)	0 (0%)	
Training in behavioral guidance techniques in children	Yes	41 (60.3%)	8 (32%)	6 (85.7%)	[1]0.012*
	No	27 (39.7%)	17 (68%)	1 (14.3%)	
Purpose in behavioral guidance techniques;	Increase your child's alignment	9 (13.2%)	1 (4%)	1 (14.3%)	[2]0.207
	To establish and strengthen surgeon-child relationship	14 (20.6%)	8 (32%)	0 (0%)	
	Efficient and short-term treatment	6 (8.8%)	0 (0%)	0 (0%)	
	Reduce worry	0 (0%)	1 (4%)	0 (0%)	
	All	39 (57.4%)	15 (60%)	6 (85.7%)	
The need to get family approval to conduct behavioral guidance	Yes	51 (75%)	22 (88%)	6 (85.7%)	[2]0.356
	No	17 (25%)	3 (12%)	1 (14.3%)	
Use of behavior guidance techniques in children	Always	20 (29.4%)	2 (8%)	3 (42.9%)	[2]0.218
	Often	19 (27.9%)	8 (32%)	3 (42.9%)	
	Sometimes	28 (41.2%)	15 (60%)	1 (14.3%)	
	Never	1 (1.5%)	0 (0%)	0 (0%)	
Used behavior guidance techniques for child patients	Tell-show-do	65 (95.6%)	21 (84%)	7 (100%)	[1]0.137
	Voice control	53 (77.9%)	9 (36%)	7 (100%)	[1]0.00*
	Nonverbal communication	18 (26.5%)	5 (20%)	4 (57.1%)	[2]0.145
	Positive reinforcement	52 (76.5%)	16 (64%)	5 (71.4%)	[2]0.484
	Distraction techniques	37 (54.4%)	17 (68%)	7 (100%)	[1]0.04*
	Presence-absence of parents	40 (58.8%)	13 (52%)	6 (85.7%)	[1]0.310
	Hand-over-mouth	8 (11.8%)	2 (8%)	5 (71.4%)	[1]0.00*
	Restrain/protective stabilization	25 (36.8%)	10 (40%)	1 (14.3%)	[1]0.515
	Hypnosis	1 (1.5%)	1 (4%)	0 (0%)	[1]0.540
	Sedation	25 (36.8%)	9 (36%)	2 (28.6%)	[1]1.000
	General anesthesia	31 (45.6%)	14 (56%)	1 (14.3%)	[1]0.165
Are all of the behavior management techniques appropriate for every child?	Yes	2 (2.9%)	0 (0%)	0 (0%)	[1]1.000
	No	66 (97.1%)	25 (100%)	7 (100%)	
Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?	Always	5 (7.4%)	2 (8%)	0 (0%)	[2]0.749
	Often	13 (19.1%)	4 (16%)	0 (0%)	
	Sometimes	22 (32.4%)	9 (36%)	2 (28.6%)	
	Never	28 (41.2%)	10 (40%)	5 (71.4%)	
Do you allow the child to talk or ask questions during treatment?	Always	11 (16.2%)	6 (24%)	2 (28.6%)	[2]0.672
	Often	36 (52.9%)	12 (48%)	5 (71.4%)	
	Sometimes	20 (29.4%)	7 (28%)	0 (0%)	
	Never	1 (1.5%)	0 (0%)	0 (0%)	
Do you stop the treatment when the child feels uncomfortable?	Always	13 (19.1%)	9 (36%)	1 (14.3%)	[2]0.432
	Often	29 (42.6%)	8 (32%)	4 (57.1%)	
	Sometimes	26 (38.2%)	8 (32%)	2 (28.6%)	
Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?	Always	4 (5.9%)	1 (4%)	0 (0%)	[2]0.857
	Often	18 (26.5%)	7 (28%)	2 (28.6%)	
	Sometimes	40 (58.8%)	13 (52%)	5 (71.4%)	
	Never	6 (8.8%)	4 (16%)	0 (0%)	

[1]Fisher Freeman Halton Test *[2]Chi-square test * p<0.05*

Regarding the frequency of use of behavioral guidance techniques and the rates of use of these techniques in child patients, there was no statistically significant difference between the groups of surgeons with different working experience (p>0.05) (Table 5).

Table 5: Assessment of responses to questionnaires according to working experience

		1-5 years n (%)	5-10 years n (%)	10 years and over n (%)	p
Taking the responsibility of working in a child patient when needed	Always	38 (43.7%)	6 (75%)	1 (20%)	[1]0.119
	Often	30 (34.5%)	0 (0%)	3 (60%)	
	Sometimes	19 (21.8%)	2 (25%)	1 (20%)	
Training in behavioral guidance techniques in children	Yes	48 (55.2%)	6 (75%)	1 (20%)	[1]0.201
	No	39 (44.8%)	2 (25%)	4 (80%)	
Purpose in behavioral guidance techniques;	Increase your child's alignment	10 (11.5%)	0 (0%)	1 (20%)	[2]0.876
	To establish and strengthen surgeon-child relationship	18 (20.7%)	2 (25%)	2 (40%)	
	Efficient and short-term treatment	6 (6.9%)	0 (0%)	0 (0%)	
	Reduce worry	1 (1.1%)	0 (0%)	0 (0%)	
	All	52 (59.8%)	6 (75%)	2 (40%)	
The need to get family approval to conduct behavioral guidance	Yes	68 (78.2%)	6 (75%)	5 (100%)	[1]0.731
	No	19 (21.8%)	2 (25%)	0 (0%)	
Use of behavior guidance techniques in children	Always	22 (25.3%)	2 (25%)	1 (20%)	[2]0.884
	Often	24 (27.6%)	4 (50%)	2 (40%)	
	Sometimes	40 (46%)	2 (25%)	2 (40%)	
	Never	1 (1.1%)	0 (0%)	0 (0%)	
Used behavior guidance techniques for child patients	Tell-show-do	81 (93.1%)	7 (87.5%)	5 (100%)	[1]0.635
	Voice control	63 (72.4%)	3 (37.5%)	3 (60%)	[1]0.083
	Nonverbal communication	23 (26.4%)	3 (37.5%)	1 (20%)	[1]0.875
	Positive reinforcement	66 (75.9%)	4 (50%)	3 (60%)	[1]0.228
	Distraction techniques	55 (63.2%)	2 (25%)	4 (80%)	[1]0.069
	Presence-absence of parents	53 (60.9%)	4 (50%)	2 (40%)	[1]0.536
	Hand-over-mouth	38 (43.7%)	6 (75%)	1 (20%)	[1]0.448
	Restrain/protective stabilization	30 (34.5%)	0 (0%)	3 (60%)	[1]0.082
	Hypnosis	19 (21.8%)	2 (25%)	1 (20%)	[1]0.104
	Sedation	48 (55.2%)	6 (75%)	1 (20%)	[1]0.293
	General anesthesia	39 (44.8%)	2 (25%)	4 (80%)	[1]0.253
Are all of the behavior management techniques appropriate for every child?	Yes	10 (11.5%)	0 (0%)	1 (20%)	[1]1.000
	No	18 (20.7%)	2 (25%)	2 (40%)	
Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?	Always	6 (6.9%)	0 (0%)	0 (0%)	[2]0.328
	Often	1 (1.1%)	0 (0%)	0 (0%)	
	Sometimes	52 (59.8%)	6 (75%)	2 (40%)	
	Never	68 (78.2%)	6 (75%)	5 (100%)	
Do you allow the child to talk or ask questions during treatment?	Always	19 (21.8%)	2 (25%)	0 (0%)	[2]0.572
	Often	22 (25.3%)	2 (25%)	1 (20%)	
	Sometimes	24 (27.6%)	4 (50%)	2 (40%)	
	Never	40 (46%)	2 (25%)	2 (40%)	
Do you stop the treatment when the child feels uncomfortable?	Always	1 (1.1%)	0 (0%)	0 (0%)	[2]0.766
	Often	81 (93.1%)	7 (87.5%)	5 (100%)	
	Sometimes	63 (72.4%)	3 (37.5%)	3 (60%)	
Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?	Always	23 (26.4%)	3 (37.5%)	1 (20%)	[2]0.920
	Often	66 (75.9%)	4 (50%)	3 (60%)	
	Sometimes	55 (63.2%)	2 (25%)	4 (80%)	
	Never	53 (60.9%)	4 (50%)	2 (40%)	

[1]Fisher Freeman Halton Test *[2]Chi-square test * p<0.05*

There was a statistically significant difference (p=0.01) between the participants from different institutions with respect to using the behavioral guidance techniques in children. 59.8% of university-affiliated surgeons and 42.9% of private practitioners or clinicians had been trained, however, the surgeons working in the ODHCs did not receive training.

There was a statistically significant difference between the frequencies of using tell-show-do technique among the participants who were employed at different institutions (p=0.005). While 96.6% of university-affiliated surgeons used this technique, 71.4% of those working in private practice and 66.7% of those working in ODHCs used this technique.

The frequencies of using the voice control techniques among surgeons employed in different institution types were statistically significantly different (p=0.005), where 73.6% of surgeon working in university, 66.7% of surgeons working in ODHCs, and 14.3% of the employees in private practice used this technique.

There was also a statistically significant difference between the frequencies of using the distraction technique between surgeons from different institutions (p=0.012). 83.3% of surgeons working in ODHC and 63.2% of surgeon working in university used this technique, while only 14.3% of those working in private practice utilized this technique.

In terms of the frequency of use of parental presence/absence technique, there was also a statistically significant difference between physicians from different institutions (p=0.045); While 66.7% of surgeons working in ODHCs and 62.1% of university employees were using this technique, only 14.3% of those working in private practice stated that they use this technique.

There was a statistically significant difference between the frequency of using the sedation technique by surgeons working in different types of institutions (p=0.004); where 85.7% of the employees in the private practice and 34.5% of the university employees used this technique, but none of the surgeons working in ODHCs used this technique (Table 6).

Table 6: Assessment of responses to questionnaires according to type of practice

		Private practices or private clinics	Oral and Dental Health Centers	Faculties of Dentistry	p
		n (%)	n (%)	n (%)	
Taking the responsibility of working in a child patient when needed	Always	3 (42.9%)	3 (50%)	39 (44.8%)	[1]0.830
	Often	2 (28.6%)	1 (16.7%)	30 (34.5%)	
	Sometimes	2 (28.6%)	2 (33.3%)	18 (20.7%)	
Training in behavioral guidance techniques in children	Yes	3 (42.9%)	0 (0%)	52 (59.8%)	[1]0.010*
	No	4 (57.1%)	6 (100%)	35 (40.2%)	
Purpose in behavioral guidance techniques;	Increase your child's alignment	1 (14.3%)	0 (0%)	10 (11.5%)	[2]0.020*
	To establish and strengthen surgeon-child relationship	3 (42.9%)	2 (33.3%)	17 (19.5%)	
	Efficient and short-term treatment	0 (0%)	0 (0%)	6 (6.9%)	
	Reduce worry	1 (14.3%)	0 (0%)	0 (0%)	
	All	2 (28.6%)	4 (66.7%)	54 (62.1%)	
The need to get family approval to conduct behavioral guidance	Yes	5 (71.4%)	5 (83.3%)	69 (79.3%)	[1]0.856
	No	2 (28.6%)	1 (16.7%)	18 (20.7%)	
Use of behavior guidance techniques in children	Always	0 (0%)	1 (16.7%)	24 (27.6%)	[2]0.794
	Often	3 (42.9%)	2 (33.3%)	25 (28.7%)	
	Sometimes	4 (57.1%)	3 (50%)	37 (42.5%)	
	Never	0 (0%)	0 (0%)	1 (1.1%)	
Used behavior guidance techniques for child patients	Tell-show-do	5 (71.4%)	4 (66.7%)	84 (96.6%)	[1]0.005*
	Voice control	1 (14.3%)	4 (66.7%)	64 (73.6%)	[1]0.005*
	Nonverbal communication	1 (14.3%)	3 (50%)	23 (26.4%)	[1]0.364
	Positive reinforcement	5 (71.4%)	5 (83.3%)	63 (72.4%)	[1]1.000
	Distraction techniques	1 (14.3%)	5 (83.3%)	55 (63.2%)	[1]0.012*
	Presence-absence of parents	1 (14.3%)	4 (66.7%)	54 (62.1%)	[1]0.045*
	Hand-over-mouth	1 (14.3%)	0 (0%)	14 (16.1%)	[1]0.830
	Restrain/protective stabilization	4 (57.1%)	2 (33.3%)	30 (34.5%)	[1]0.468
	Hypnosis	0 (0%)	1 (16.7%)	1 (1.1%)	[1]0.121
	Sedation	6 (85.7%)	0 (0%)	30 (34.5%)	[1]0.004*
	General anesthesia	6 (85.7%)	3 (50%)	37 (42.5%)	[1]0.093
Are all of the behavior management techniques appropriate for every child?	Yes	0 (0%)	0 (0%)	2 (2.3%)	[1]1.000
	No	7 (100%)	6 (100%)	85 (97.7%)	
Would you prefer not to talk at all if the child is quiet and cooperative during the treatment?	Always	0 (0%)	0 (0%)	7 (8%)	[2]0.464
	Often	2 (28.6%)	1 (16.7%)	14 (16.1%)	
	Sometimes	3 (42.9%)	4 (66.7%)	26 (29.9%)	
	Never	2 (28.6%)	1 (16.7%)	40 (46%)	
Do you allow the child to talk or ask questions during treatment?	Always	0 (0%)	0 (0%)	19 (21.8%)	[2]0.001*
	Often	6 (85.7%)	2 (33.3%)	45 (51.7%)	
	Sometimes	1 (14.3%)	3 (50%)	23 (26.4%)	
	Never	0 (0%)	1 (16.7%)	0 (0%)	
Do you stop the treatment when the child feels uncomfortable?	Always	0 (0%)	1 (16.7%)	22 (25.3%)	[2]0.413
	Often	5 (71.4%)	3 (50%)	33 (37.9%)	
	Sometimes	2 (28.6%)	2 (33.3%)	32 (36.8%)	
Do you prefer to give a gift or a prize if the child behaves in a cooperative manner during treatment?	Always	1 (14.3%)	1 (16.7%)	3 (3.4%)	[2]0.012*
	Often	5 (71.4%)	1 (16.7%)	21 (24.1%)	
	Sometimes	1 (14.3%)	2 (33.3%)	55 (63.2%)	
	Never	0 (0%)	2 (33.3%)	8 (9.2%)	

*[1]Fisher Freeman Halton Test [2]Chi-square test * p<0.05*

DISCUSSION

It is quite difficult to examine and treat child patients. For this reason, oral and maxillofacial surgeons may be reluctant to treat or take responsibility for young child patients. A survey conducted in Pakistan showed that 36.5% of dental surgeons always, 22% often, 38% sometimes and 3.5% never take responsibility for the treatment of pediatric patients (5). Findings from our study showed that 45% of surgeons always, 33% often, and 22% sometimes took this responsibility. We did not observe any surgeon who did not treat pediatric patients. The present study is the first study evaluating the knowledge, attitude, and practices of oral and maxillofacial surgeon regarding behavior guidance techniques in Turkey.

This study shows that the vast majority of the surgeons working in the oral and maxillofacial clinics in Turkey (99%), and 79% of all oral and maxillofacial surgeons always use behavior guidance techniques. Similarly, Ajlouni *et al.*[7] have reported that 85% of Jordanian pediatric dentists always use the behavior guidance techniques.

Use of the behavior guidance techniques is an integral part of the pediatric dentistry practice.[8] In our study, 25% of the oral and maxillofacial surgeon working in maxillofacial surgery clinics used behavioral guidance techniques in children at all times and the most frequently used behavioral guidance techniques were tell-show-do (93%), positive support (73%), voice control (69%), distraction (61%) and parental presence/absence (59%). McKnight-Han *et al.*[9] showed that 96% of general dentists used tell-show-do and 88% used voice control, while 100% of pediatric dentists used tell-show-do and 98% of them used voice control. Sharath *et al.*[10] and Grewal *et al.*[11] reported that the most commonly used behavioral guidance technique in India is tell-show-do. In the study conducted by Wali and colleagues,[4] the most popular techniques that

dental surgeons used to manage children were stated to be distraction (33.5%), voice control (30.5%), and tell-show-do (29.5%). In the same study, 34% of the dental surgeons reported that they allowed the parents of the pediatric patients in their clinic during treatment.[4] In one study conducted in Israel, Peretz *et al.*[12] reported that dentists use tell-show-do and material reinforcement techniques more often than other behavior guidance techniques. Hypnosis (6%) was reported to be the least used method in the same study.[12] Hypnosis (2%) was also found to be the least used method in our study.

In the present study, there was a statistically significant difference between surgeons from different age groups with respect to control by voice, distracting, and using hand covering technique. In previously published studies, no significant difference was found between different age groups regarding any of the behavioral guidance techniques.[13,14]

We also determined that the pharmacological methods were also preferred by surgeons as behavior guidance techniques and that 36% of the surgeons used sedation and 46% used general anesthesia. There was no significant difference in sedation or general anesthesia use between male and female surgeons. Peretz *et al.*[12] observed that the use of general anesthesia was significantly more prevalent among male dentists than among females, and there was no significant difference between male and female dentists in terms of sedation use.

Wright *et al.*[15] reported that young dentists tend to use behavior guidance techniques more often than older dentists. In our study, it was observed that pediatric patients were treated mostly by young and university-affiliated surgeons (ages 23-30), and the behavioral methods were also used more often by younger (23-30 years), less experienced and university-affiliated surgeons. The use of behavioral guidance techniques by younger and less experienced surgeons can be explained by the positive changes in the curriculum in the faculties of dentistry that has taken place over time and the availability of more course opportunities. The more frequent use of behavior guidance techniques by university-affiliated surgeons is considered to be due to the fact that the vast majority of the participants were working at universities and that the pediatric patients are frequently referred to university hospitals due to the presence of pediatric dental clinics.

In line with the previous studies,[15,16] we found that the rate of behavior guidance technique use among female surgeons was statistically significantly higher than males. On the contrary to our work, Kawia *et al.*[5] reported that male surgeons used these techniques more than females.

CONCLUSION

In general, the results of this study show that the oral and maxillofacial surgeons working in public and private clinics have a high awareness of behavior guidance techniques while the level of this awareness varies among surgeons according to age, gender, workplace, work experience, and training. Training programs should be planned for the oral and maxillofacial surgeons to improve their knowledge and skills in providing treatment for children.

Conflict of Interests

The authors declare that there are no conflicts of interest regarding the publication of this paper.

REFERENCES

1. Cademartori MG, Martins P, Romano AR, Goettems ML. Behavioral changes during dental appointments in children having tooth extractions. J Indian Soc Pedod Prev Dent 2017;35:223-228.

2. Baier K, Milgrom P, Russell S, Mancl L, Yoshida T. Children's fear and behavior in private pediatric dentistry practices. Pediatr Dent 2004;26:316-321.

3. Howitt JW, Stricker G. Sequential changes in response to dental procedures. J Dent Res 1970;49(5):1074-1077.

4. Wali A, Siddiqui TM, Khan R, Batool K. Knowledge, Attitude, and Practices of Dental Surgeons in managing Child Patients. Int J Clin Pediatr Dent 2016;9:372-378.

5. Kawia HM, Mbawalla HS, Kahabuka FK. Application of Behavior Management Techniques for Paediatric Dental Patients by Tanzanian Dental Practitioners. Open Dent J 2015;9:455-461.

6. Boka V, Arapostathis K, Vretos N, Kotsanos N. Parental acceptance of Behavior-management techniques used in pediatric dentistry and its relation to parental dental anxiety and experience. Eur Arch Paediatr Dent 2014;15:333-339.

7. Ajlouni O, Al-Moherat F, Habahbeh R, Nsour H, Tbeshat J. Behavior management techniques among Jordanian pediatric dentists. J Royal Med Services 2010;17:62-66.

8. Carr KR, Wilson S, Nimer S, Thornton JB Jr. Behavior management techniques among pediatric dentists practicing in the southeastern United States. Pediatr Dent 1999;21:347-353.

9. McKnight-Hanes C, Myers DR, Dushku JC, Davis HC. The use of behavior management techniques by dentists across practitioner type, age, and geographic region. Pediatr Dent 1993:15:267-271.

10. Sharath A, Rekka P, Muthu MS, Rathna Prabhu V, Sivakumar N. Children's behavior pattern and behavior management techniques used in a structured postgraduate dental program. J Indian Soc Pedod Prev Dent 2009;27: 22-26.

11. Grewal N. Implementation of behavior management techniques: how well accepted they are today. J Indian Soc Pedod Prev Dent 2003;21:70-74.

12. Peretz B, Glaicher H, Ram D. Child-management techniques. Are there differences in the way female and male pediatric dentists in Israel practice? Braz Dent J 2003;14:82-86.

13. Lawrence SM, Dennis MS, McTigue, Wilson S, Waggoner WF, Fields HW Jr. Parental attitudes toward behavior management techniques used in pediatric dentistry. Pediatr Dent 1991;13:151-155.

14. Daghamin S, Balharith M, Alhazmi S, AlObaidi F, Kakti A. Behavior Management Techniques in Pediatric Dentistry: How Well are they Accepted? Acad J Ped Neonatol 2017;5:555722. DOI: 10.19080/AJPN.2017.05.555722.

15. Wright FA, Giebartowski JE, McMurray NE. A national survey of dentists' management of children with anxiety or behavior problems. Aust Dent J 1991;36:378-383.

16. Adair S, Schafer T. Age and gender differences in the use of behavior management techniques by pediatric dentists. Pediatrics 2007;29:403-408.

Corresponding Author

Ayse OZCAN-KUCUK, DDS, MDS

Mersin University

Faculty of Dentistry

Department of Oral and Maxillofacial Surgery

Mersin, 33343, Turkey

Phone : +90 324 361 00 37

Fax : +90 324 361 03 69

E-mail : ayseozcan89@hotmail.com