

Basic behavior guidance techniques: A survey of members of the Spanish Society of Paediatric Dentistry

Cristina Segarra-Ortells, Ana María Leyda-Menéndez, Marta Ribelles-Llop, María José Gavara-Navarro, Laura Marqués-Martínez

Department of Dentistry, Faculty of Health Sciences, CEU-Cardenal Herrera University, Alfara del Patriarca, Spain

ABSTRACT

Background: Over the last 20–30 years social trends, educational and parenting patterns, and the ethical and legal factors guiding them have led to the reevaluation and even abandonment of some traditionally used behavior guidance techniques (BGTs). **Aims:** To profile the professionals providing specialized pediatric treatments in Spain and understand changes in their preferences and use of basic BGTs, and the evolution of these preferences. **Settings and Design:** A cross-sectional, descriptive, and correlational study was designed. **Methods:** One hundred and twenty-six dentists completed a previously validated survey. **Statistical Analysis:** Descriptive statistics and Chi-square tests were performed to analyze the questionnaire data. **Results:** The most common BGTs were “Tell/Show/Do” (98%) and positive reinforcement (92.1%), and the most abandoned BGT was: “hand-over-mouth” (15%), because it was rejected by parents and because of potential legal problems and psychological consequences for the patients. Of note, 37% of the professionals allowed the patient’s parents to be present during the treatment. **Conclusions:** There has been a notable decrease in the use of certain BGTs in Spain, especially hand-over-mouth and voice control, because they are becoming less socially acceptable as the way society relates to and educates children changes.

KEYWORDS: Behavior guide, parenting patterns, pediatric dentist,

Introduction

Since the beginning of the 20th century, several classic behavioral guidance techniques (BGTs) have been described. However, social evolution has meant that some which were valid in the past are no longer accepted by parents because they are considered aversive and so professionals tend to use them less.^[1,2]

Address for correspondence:

Dr. Cristina Segarra-Ortells,
CEU Cardenal Herrera University, C/ Santiago Ramón y Cajal,
S/N. 46115, Alfara del Patriarca, Valencia, Spain.
E-mail: cristina.segarra@uchceu.es

Access this article online

Quick response code 	Website: www.jisppd.com
	DOI: 10.4103/JISPPD.JISPPD_355_20

These changes have been studied in other Western countries but no studies from Spain have been published on this topic. The objective of this work was to record the profile of the Spanish Society of Paediatric Dentistry (SEOP) members, and to understand changes in their preferences when choosing basic BGTs in recent decades.

Methods

This was a cross-sectional, descriptive, and correlational study which was approved by the Research and Ethics Committee and follows the STROBE check list for

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Segarra-Ortells C, Leyda-Menéndez AM, Ribelles-Llop M, Gavara-Navarro MJ, Marqués-Martínez L. Basic behavior guidance techniques: A survey of members of the Spanish Society of Paediatric Dentistry. *J Indian Soc Pedod Prev Dent* 2021;39:132-7.

Submitted: 10-Sep-2020 **Revised:** 22-Mar-2021
Accepted: 02-Apr-2021 **Published:** 30-Jul-2021

cross-sectional studies. The selectable population were all dentists who were active members of the SEOP at the time of the survey. This association is the only one in Spain ascribed to the General Council of Dentists that represents this Pediatric Dentistry (PD) specialty. Its associate members constitute a very representative group of the professionals who currently care for the oral health of babies, children, and adolescents in Spain.

Through a nonprobabilistic convenience sampling, all members of the SEOP who met the following inclusion criteria were selected: (1) an active professional; (2) voluntarily and anonymously agreed to complete the survey; and (3) correctly and completely completed the questionnaire. The information was collected using a survey instrument that consisted of questions divided into five categories: sociological data, academic training, professional practice characteristics, and use of basic BGTs. The response formats were multiple-choice questions in which either only one response could be chosen or a fully-open answer given.

The survey was validated according to the following process: first, it was evaluated by a committee of ten experts in the field of PD. They all filled in the survey, indicated if any of the questions were difficult to understand, inadequate, or ambiguous, and provided suggestions they thought could improve it. Next, the corrected questionnaire was sent to a statistical specialist to review it so that optimal analysis of the data could be achieved, and finally, a pilot study was carried out with 15 pediatric dentists (these data were not included in the database used in this work). The pilot study aimed to test the ability of professionals to correctly understand and answer the survey. After this step, some changes were introduced into the survey's text. Thus, the final version of this instrument was created.

The collection of the surveys was carried out in two ways: (1) in person and (2) by telephone. Face-to-face collection was undertaken in May 2015 at the 37th Annual Meeting of the SEOP, which was attended by 350 professionals, of whom 150 were active members. On the 1st day of this meeting, all of its attendees received the survey. The conference attendees were informed about the objectives of this research survey, the prerequisite requirements for its completion, and the voluntary and anonymous nature of its participation. Only 46 professionals returned properly completed surveys, representing a response rate of 30.66%.

For telephone data collection, we used the freely-accessible directory of associated professionals which is available on the SEOP website as a database. Each member was contacted and asked for an e-mail address to which the questionnaire and all the information regarding the investigation could be sent. We also reiterated both the voluntary nature of their

participation and the anonymity and confidentiality of the data provided, with the added stipulation that they had not previously completed the survey. We telephoned all 483 professionals who appeared in the directory: 245 responded to the call and 80 sent us completed surveys (36%). The final sample comprised 126 surveyed dentists, thus implying that the overall survey response rate was 26.08%. Figure 1 shows the outline of the study procedures.

Statistical analysis

The statistical analysis was performed using the IBM SPSS Statistics Statistical Package (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY, USA). For the descriptive analysis, the absolute frequency (N), mean values, standard deviation (SD), minimum and maximum, and 25th, 50th, and 75th percentiles were calculated. The confidence level was set to 95% and so the experimental *P* value was compared with a significance level of 5%.

To verify the normality of the data distribution, the Kolmogorov-Smirnov test was applied and the Levene test was used to verify homoscedasticity. The relationship between (1) the use of different BGTs, (2) the presence or not of patients' parents in the room, (3) the feeling of having the support of the patients' parents and the professional's gender was tested using the Chi-square test. The same test was used to relate the minimum age of the patients treated and the percentage of pediatric population treated in the practices of the professionals surveyed.

Results

The sample used in this study consisted of a total of 126 active dentists who were members of the SEOP; they were aged between 25 and 60 years and their average age was 37.18 years plus or minus a SD of 9.74 years. Table 1 shows the distribution of the sample in relation to age, gender, years in professional practice, courses and conference attendance over the 2 years' prior, and the minimum age of the patients they treated. The dentists comprising the sample practiced in different Spanish autonomous communities, especially in the Valencian community (33.3%), Catalonia (15.1%), and Madrid (13.5%). The communities with the lowest representation (0.8%) were Aragon, Cantabria, La Rioja, Navarre, and the Canary Islands.

As far as specialized training was concerned, 29.4% of the respondents did not have postgraduate qualifications in PD, while 70.6% had undergone some postgraduate training in this area. When we analyzed the group of professionals with specialized qualifications, we found that 31.31% had carried out postgraduate courses in PD for 1 year, 53.96% for 2 years, and 15.72% for 3 years, all of them completing their postgraduate training between 1982 and

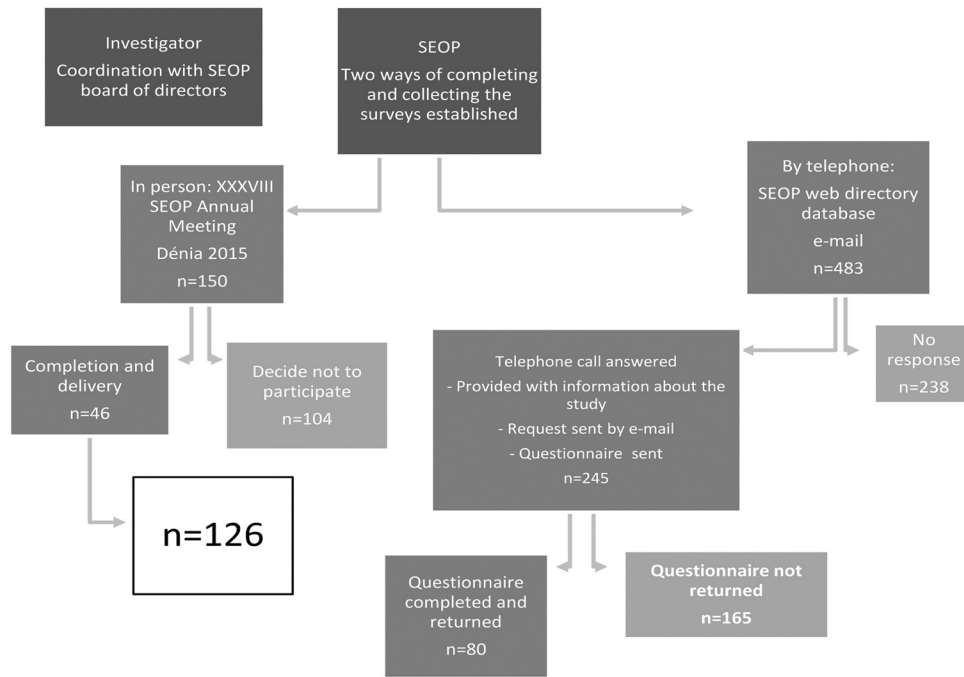


Figure 1: Flow chart showing the study procedures

Table 1: Distribution of the sample in relation to age, sex, years in professional practice, course and conference attendance over the 2 years prior, and the minimum age of the patients treated

Age (years)	n (%)
25-29	32 (25.5)
30-34	26 (20.7)
35-44	39 (31.1)
≥45	28 (22.4)
Sex	n (%)
Male	19 (15.1)
Female	107 (84.9)
Professional experience (years)	n (%)
<4	24 (19)
5-9	35 (27.8)
10-14	21 (16.7)
15-19	19 (15.1)
≥20	27 (21.4)
Course and conference attendance in the 2 years prior	n (%)
0	9 (7.1)
1-3	79 (62.7)
≥4	38 (30.2)
Minimum patient age (years)	n (%)
Birth	96 (76.2)
3	22 (17.5)
5	8 (6.3)

2015; 7.9% had completed their studies before 1989, 11.2% between 1990 and 1999, 34.3% between 2000 and 2009, and 45.9% after 2009. Moreover, 83.8% of respondents had participated in refresher courses in Spain while 16.2% had completed them nationally and internationally.

In relation to their professional practice, 54.8% provided dental treatment to the general population and the remaining 45.2% specialized exclusively in child patients. Of these, in their daily practice, 29% treated up to 25% pediatric patients, 33.3% saw up to 50% child patients, and 37.7% regularly cared for up to 75% children. Among the professionals who treated both adults and children, the age of starting care decreased as the percentage of the pediatric population they treated in their practice increased, as shown in Table 2.

Table 3 shows the distribution of the sample according to the presence of parents in the room while treatment was administered and the use of different basic BGTs with the aim of establishing a relationship of trust and fluid communication with the child patient. Interestingly, 37% of respondents said they always use voice control, 54% sometimes used it, and 9% never used it. Some 0.8% of the respondents in this study stopped using this technique because the patients' parents considered it aversive.

The "hand-over-mouth" technique was always or sometimes used by 26%, 59% never used it, and 15% had used it but had stopped doing so. Of the professionals who stopped using this technique, 11% justified the reason that led to the decision: 2.4% replaced it with the use of another BGT, 4.8% stopped using it because the parents considered it abusive, 1.6% stopped because of potential legal problems, 0.8% stopped before reaching the point of using the technique, 0.8% said that the technique did not work, and the remaining 0.8% did not use it because it may have possible psychological consequences for the child.

Table 2: Relationship between exclusive pediatric dentistry practice and the age that pediatric patients start treatments

Exclusive paediatric dentistry	Age of treatment initiation (years)				P*
	0	3	>5	Total	
No n (%)	46 (36)	16 (13)	8 (6)	70 (55)	0.003
Yes n (%)	50 (40)	6 (5)	0	56 (45)	
Total n (%)	96 (76)	22 (18)	8 (6)	126 (100)	

*Pearson Chi-squared test

Table 3: Distribution of the sample according to the presence of parents in the room while treatments are administered and the use of different nonpharmacological behavior guidance techniques

Presence of parents in the treatment room	n (%)
Always	6 (4.8)
Most of the time	28 (22.2)
Occasionally	79 (62.7)
Never	13 (10.3)
“Tell/show/do”	n (%)
Yes	123 (98)
No	3 (2)
Positive reinforcement (awards)	n (%)
Always	62 (49.2)
Sometimes	54 (42.9)
Never/almost never	10 (7.9)
Modeling	n (%)
Always	29 (23)
Sometimes	73 (58)
Never/almost never	24 (19)

When analyzing the results in relation to the gender of the respondents, no difference was observed either in relation to allowing the parents to be present in the room during the treatment or in the use of the different basic BGTs ($P > 0.05$). Of note, 74% of the professionals reported feeling they had the support of all of their patients' parents during the use of the BGT, 17% thought they had their support most of the time, and the remaining 9% did not feel they had the support of the parents. These results were independent of the professional's gender ($P > 0.05$).

Discussion

The objective of this work was to understand the changes that occurred in the choice and use of basic BGTs by professional members of the SEOP who provide specialized PD treatments in Spain and to record their profile, preferences when choosing and using different BGTs, and how these preferences have evolved in recent decades. Of our study sample, approximately the half of the respondents (45.2%) exclusively practiced PD, which contrasts with the findings of other studies^[3,4] in which this percentage was 100%. This may be because in some countries,

including the USA, professionals must exclusively practice this discipline to be accepted as a member of some PD scientific societies, whereas this is not a requirement of the SEOP.

In this present study, 46.8% of the respondents had been practicing for <10 years, 31.8% for 10–20 years, and 21.4% for more than 20 years. These data indicate that almost half the participants were just starting their working lives, highlighting the fact that, PD in Spain is a young specialty with generational change, and more professionals are adopting pediatric specializations. Like the data obtained by Woolley *et al.*,^[5] 70.6% of all our respondents had postgraduate degrees in PD.

Interestingly, 76.2% of our respondents treated children from their birth, 17.5% did so after 3 years of age, and 6.3% treated them when they were older than 5 years. These results differ from those obtained by Cavalcanti *et al.*^[6] and Ferreira *et al.*,^[7] who found lower percentages of treatment from birth, at 62.5% and 40%, respectively. As can be seen, our study was performed 17 years later than that of Ferreira *et al.*,^[7] and during this time, the average age of starting child oral care has reduced and professionals' awareness of the importance of prevention has increased. This principle of providing care as early as possible is endorsed by the main international PD societies^[8,9] whose care protocols recommend visits to the dentist should start when the first tooth erupts or on the infant's first birthday.

Our results showed that 4.8% of dentists always allowed the presence of parents during treatments, 22.2% usually allowed it, 62.7% rarely authorized it, and 10.3% never permitted it. Studies conducted in other countries using samples of pediatric dentists or general dentists suggest that between 57% and 93% of professionals allow the presence of parents in the treatment room.^[10-13] The bibliography we reviewed also specified situations in which the presence of parents is always allowed or is even demanded by professionals: at the first visit, during emergency visits, or when the patient is aged under 3 years.

Authors such as Kamp^[14] and Shroff *et al.*^[15] observed that 66% and 78% of the parents in their studies wanted to be present during their child's dental treatment. Currently, there is no scientific evidence to suggest that the behavior of children aged older than 3 years improves with the presence of a reference adult.^[16,17] However, in recent years, it has become obvious that more parents want to actively participate in all aspects of their children's lives, and that their willingness to allow their children to be alone during the consultation is decreasing.^[12] In addition, different institutions have started to recognize the right of minors to always see health professionals accompanied by an adult, i.e., a parent, guardian, or caregiver,^[18] who is also responsible for signing their informed consent.

Basic BGTs are a fundamental in PD treatments. These are the principal techniques taught in the Faculties of Dentistry,^[19] this knowledge is then reinforced in 98% of the PD specialization programs^[20] and is later used by professionals with most of their patients during their professional practice.^[21] In agreement with several previous studies,^[10,11,13,20,22] 98% of dentists reported using the "Tell/Show/Do" technique because it is universally used, very easy to implement, can be used in all patients with very good results, and is very well accepted thus, as indicated by Juntgen *et al.*,^[18] its use increases as professionals' careers progress.

The use of rewards at the end of the treatment as part of the positive reinforcement of good behavior was used by 92.1% of the sample. These results are similar to those collected in the Wilson study, in which 93% of dentists gave a reward to patients who cooperated well and 83% also did so even with noncooperating patients.^[23] Peretz *et al.* also reported similar findings (84%).^[13] Professionals tended to reward good behavior, and thus reinforced its repetition at subsequent treatments.

In this present study, we observed that 81% of professionals used the modeling technique when necessary, but not always in every case. These results are like those of Peretz *et al.*^[13] but higher than those obtained by Wilson and Houpt who observed that 66% of the professionals they surveyed used live modeling with cooperating patients and 41% with noncooperating patients.^[23] The bibliography suggests that the wide use of this technique is determined by its ease-of-use and good acceptance by the patients and parents, and because it also requires very little infrastructure and usually has a very positive effect on the child's behavior.

In our study, 91% of the respondents used voice control when they considered it useful: a percentage which is identical to that obtained by Adair *et al.*^[22] In another article published by the same author in 2004, 96% of respondents used this technique,^[20] results that also agree with those obtained by Peretz *et al.*^[13] One of the dentists, we surveyed (0.8%) stopped using this technique when he/she perceived that the parents considered it abusive. This result is much lower than that obtained by Adair *et al.*, where 23% claimed that they were using the technique less.^[22] In general, the consulted bibliography consulted agrees that this technique is often used and is effective in certain situations, but that since the 1980s,^[18] its use has been decreasing because its acceptance by parents is declining. This is because some parents consider it to be abusive and inadequate as it can require the professional to temporarily raise their voice in a forceful way.

Some 26% of the dentists surveyed in this present study always or sometimes used the hand-over-mouth technique, 59% did not use it, and 15% had used it in

the past but no longer did so. This is an example of a technique that has been progressively abandoned by many professionals, not because there is scientific evidence of its inefficiency but because of the problems it can generate with parents, which can even become legal disputes if it is perceived as an abusive practice. Thus, studies carried out at the beginning of the 1980s indicated that around 90% of pediatric dentists considered it a useful tool^[10,24,25] and only 10% of professionals never used it, even though it was taught in more than 75% of the specialized training programs imparted in PD courses. The literature indicates that hand-over-mouth was used by around 75% of professionals in the 1990s (25% said that they did not use it^[11]), but by the beginning of the 21st century, studies such as that of Peretz *et al.* were already showing the inversion of these percentages: 28% of professionals used it if they considered it necessary and 72% did not use it, either because they never used it or because they stopped doing so for different reasons.^[13] Other studies have published similar figures which agree with those we found in this study.^[4,26]

In fact, many professionals currently do not use hand-over-mouth because they never learned it and have never used it. Oueis *et al.* (2012) noted that of the professionals who graduated in the 1960s, 28% had not used this technique before its elimination from the group of recommended BGTs. Of the graduates from between 2000 and 2007, 72% had not used this technique, and of those who finished their studies in 2007, 75% had never used it.^[27] We can also say that as early as 2001, 54% of the university specialization programs considered hand-over-mouth to be "unacceptable"^[20] and no longer taught it. The main international-level professional societies currently advise against the use of this technique. The bibliography refers as main reasons: The parents' disagreement (and even opposition to) its use and practitioners' fear that legal proceedings could be started against them by the patients' legal guardians. Some also refer to fearing the potential consequences of its use in future interactions with the patient.^[26]

Finally, it is important to correctly interpret the results of this study, taking its sample size, which is an important limitation, into account. A sample of 126 professionals is small when trying to generalize the results. However, this present work highlights the need for similar future studies with larger sample sizes which can allow the results to be better extrapolated to Spanish pediatric dentists and therefore also allowing the changes in the choice and use of basic BGTs by the professionals in Spain to be compared and monitored.

Conclusions

1. Professionals who partially or exclusively practice PD are young, usually female, and have been practicing dentistry for approximately 20 years or less

2. Almost two-thirds of them have received specialized training in the field of PD and treat children from birth to adolescence
3. These dentists still maintain traditional patterns of care, prefer to avoid the presence of parents in the treatment room, and usually opt for basic BGTs to obtain their patients' collaboration
4. However, as in other Western countries, there has been a notable decrease in the use of certain BGTs, especially hand-over-mouth and voice control, because they are becoming less socially acceptable.

Acknowledgments

The authors are very grateful to Ms. Antonia Saez for her help in the biostatistical analysis of the data of the study and to Dr. Maria Ledran for her work in the translation of the original document into English.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Acs G, Musson CA, Burke MJ. Current teaching of restraint and sedation in pediatric dentistry: A survey of program directors. *Pediatr Dent* 1990;12:364-7.
2. Tilliss TS. Behavior management techniques in predoctoral and postdoctoral pediatric dentistry programs. *J Dent Educ* 1993;57:232-8.
3. Davis MJ. Conscious sedation practices in pediatric dentistry: A survey of members of the American Board of Pediatric Dentistry College of Diplomates. *Pediatr Dent* 1988;10:328-9.
4. Newton JT, Patel H, Shah S, Sturmev P. Attitudes towards the use of hand over mouth (HOM) and physical restraint amongst paediatric specialist practitioners in the UK. *Int J Paediatr Dent* 2004;14:111-7.
5. Woolley SM, Hingston EJ, Shah J, Chadwick BL. Paediatric conscious sedation: Views and experience of specialists in paediatric dentistry. *Br Dent J* 2009;207:1-7.
6. Cavalcanti AL, Calvalho LF, Pereira LL, Medeiros AD, Valença AM, Duarte RC. Primeira consulta odontológica: Percepções dos cirurgioes-dentistas quanto ao periodo ideal. *J Bras Odontopediatr Odontol Bebe Curitiba* 2002;5:420-4.
7. Ferreira SH, Kramer PF, Longoni MB. Idade ideal para a primeira consulta odontológica. *Rev Gaúcha Odon* 1999;47:236-8.
8. American Academy of Pediatric Dentistry Clinical Affairs Committee – Infant Oral Health Subcommittee. Guideline on infant oral health care. *Pediatr Dent* 2012;34:e148-52.
9. American Academy on Pediatric Dentistry Council on Clinical Affairs. Policy on early childhood caries (ECC): Unique challenges and treatment option. *Pediatr Dent* 2008;30:44-6.
10. Levy RL, Domoto PK. Current techniques for behavior management: A survey. *Pediatr Dent* 1979;1:160-4.
11. Wilson S. A survey of the American Academy of Pediatric Dentistry membership: Nitrous oxide and sedation. *Pediatr Dent* 1996;18:287-93.
12. Carr KR, Wilson S, Nimer S, Thornton JB Jr. Behavior management techniques among pediatric dentists practicing in the southeastern United States. *Pediatr Dent* 1999;21:347-53.
13. 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;14:82-6.
14. Kamp AA. Parent child separation during dental care: A survey of parent's preference. *Pediatr Dent* 1992;14:231-5.
15. Shroff S, Hughes C, Mobley C. Attitudes and preferences of parents about being present in the dental operatory. *Pediatr Dent* 2015;37:51-5.
16. Venham L, Bengtrou D, Cipes M. Parent's presence and the child's response to dental stress. *J Dent Child* 1978;45:213-7.
17. Cox IC, Krikken JB, Veerkamp JS. Influence of parental presence on the child's perception of, and behavior, during dental treatment. *Eur Ach Paediatr Dent* 2011;12:200-4.
18. Juntgen LM, Sanders BJ, Walker LA, Jones JE, Weddell JA, Tomlin AM, *et al.* Factors influencing behavior guidance: A survey of practicing pediatric dentists. *Pediatr Dent* 2013;35:539-45.
19. York KM, Mlinac ME, Deibler MW, Creed TA, Ganem I. Pediatric behavior management techniques: A survey of predoctoral dental students. *J Dent Educ* 2007;71:532-9.
20. Adair SM, Rockman RA, Schafer TE, Waller JL. Survey of behavior management teaching in pediatric dentistry advanced education programs. *Pediatr Dent* 2004;26:151-8.
21. Connick C, Palat M, Pugliese S. The appropriate use of physical restraint: Considerations. *ASDC J Dent Child* 2000;67:256-62, 231.
22. Adair SM, Waller JL, Schafer TE, Rockman RA. A survey of members of the American Academy of Pediatric Dentistry on their use of behavior management techniques. *Pediatr Dent* 2004;26:159-66.
23. Wilson S, Houpt M. Project USAP 2010: Use of sedative agents in pediatric dentistry – A 25-year follow-up survey. *Pediatr Dent* 2016;38:127-33.
24. Davis MJ, Rombom HM. Survey of the utilization of and rationale for hand-over-mouth (HOM) and restraint in postdoctoral pedodontic education. *Pediatr Dent* 1979;1:87-90.
25. Acs G, Burke MJ, Musson CM. An updated survey on the utilization of hand over mouth (HOM) and restraint in postdoctoral pediatric dental education. *Pediatr Dent* 1990;12:298-302.
26. Newton T, Asimakopoulou K, Daly B, Scambler S, Scott S. The management of dental anxiety: Time for a sense of proportion? *Br Dent J* 2012;213:271-4.
27. Oueis HS, Ralstrom E, Miriyala V, Molinari GE, Casamassimo P. Alternatives for hand over mouth exercise after its elimination from the clinical guidelines of the American Academy of Pediatric Dentistry. *Pediatr Dent* 2010;32:223-8.