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Original Article

Behavior Guidance Techniques used in Dental Care for Patients with Special Needs: Acceptance of Parents

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Abstract

Objective: To evaluate the acceptance of the parents of special needs patients (SNP) concerning behavior guidance techniques (BGT) used for the dental care. **Methods**: Participants were asked to answer a sociodemographic questionnaire and, after this, they received individual explanations regarding each of the BGT, and answered if they accepted, accepted with restrictions or did not accept each one of them. Data were analyzed using binomial nonparametric test for the difference between proportions and the chi-square test. **Results**: Participated 83 parents of SNP. All of them considered the use of communicative management (CM) for the patients' dental care to be totally acceptable. The use of protective stabilization (PS) was considered acceptable by 76 parents (91.57%), sedation (SD) by 65 parents (78.32%), general anesthesia (GA) by 63 parents (75.90%) and nitrous oxide inhalation (NOI) by 62 parents (74.70%). The differences between the levels of acceptance for each method regarding the three educational levels were not statistically significant. Sedation was statistically more readily accepted by parents of patients aged 31 to 40 years when compared with those of children until ten years of age. The acceptance of protective stabilization was statistically higher for patients with physical disabilities when compared with those of patients who had congenital disabilities, intelligence or behavioral deviations. **Conclusion**: Communicative management and protective stabilization were statistically more acceptable by parents than the other techniques.

Keywords: Quality of life; Oral health; Cleft palate; Cleft lip.

Introduction

Special health care needs encompass several conditions, which may be congenital, developmental or acquired as the result of disease, trauma or environmental causes. These conditions may result in physical, mental, sensory, behavioral, cognitive and/or emotional disabilities often requiring specialized services and involvement of several different health professionals [1].

Dental treatment for special needs patients (SNP) presents great challenges. Due to cognitive deficits, anxiety and/or lack of motor ability, many of them are resistant to certain dental procedures [2-4].

According to the American Academy of Pediatric Dentistry, tell-show-do, voice control, nonverbal communication, positive reinforcement, distraction, presence/absence of parents and nitrous oxide/oxygen inhalation are basic behavior guidance, while protective stabilization, sedation and general anesthesia are considered advanced behavior guidance techniques [5].

Many SNP can receive dental care routinely in the dental office with the use of basic BG. Nevertheless, there are situations in which advanced BG techniques are necessary. As a result of the lack of psychological maturity and emotional, physical and/or mental disabilities or more serious medical conditions, some patients are unable to cooperate sufficiently. Under these situations, to perform dental care successfully, so the use of protective stabilization, sedation or general anesthesia becomes necessary [2,4-6].

When choosing the BGT to be used, the dentist should consider patients' individually including their social and family context and assess the risks and benefits of using each technique. The professional must explain the techniques in details and only with the acceptance of parents, advanced BG can be performed [5-7].

Although other studies have shown acceptance of parents related to BGT [8,9], few studies have addressed the acceptance of SNP parents in relation to these methods [11,12]. Therefore, the aims of this study were to and evaluate the acceptance of parents of SNP undergoing dental treatment regarding the different BG in current use, and to assess the existence of possible correlations between acceptance and socio-demographic variables.

Material and Methods

This study was approved by the Research Ethics of the Federal University of Uberlândia (Protocol: 218/10).

Sample

This was convenience sample. The direct population comprised SNP parents and the indirect population was composed of patients that have received dental care in the Special Patients Department – a department linked to the Dental Hospital, Faculty of Dentistry, Federal University of Uberlândia, Minas Gerais, Brazil. This department provides dental care for SNP of all ages, and includes different medical conditions for different patients. There is a specialized group of dentists

and other health professionals to perform dental treatment in outpatient clinics or under general anesthesia. The sample consisted of 83 parents and their respective patients accompanied during dental care in the Department of Special Patients in the period from April to October, 2012.

Parents were invited to participate while patients were receiving dental treatment. They were informed about the aims of the research and those who agreed to participate signed the informed consent form.

Patients were classified according to the diagnosis associated with their special needs. For the presentation of results and statistical analysis concerning these diagnoses, patients were divided into four main groups: 1) patients with physical disabilities (e.g. cerebral palsy, progressive muscular dystrophy, osteogenesis imperfecta, myelomeningocele, hydrocephalus); 2) patients with congenital disabilities (e.g. Down syndrome, Turner syndrome, Cri-du-chat syndrome, fragile X syndrome and other disorders caused by genetic or chromosomal abnormalities, such as innate metabolism errors); 3) patients with mental, intelligence or behavioral deviations (e.g. neuroses and psychoses, minimal brain dysfunction, autism, mental retardation); and 4) patients with systemic chronic diseases or other diagnoses not included in any of the above groups (e.g. seizure disorders).

Data Collection

Firstly, parents answered a questionnaire containing questions regarding socio-demographic variables (age, gender and educational level, patient's age, gender and medical condition). Subsequently, BGT was verbally explained to each of participants, which included: Tell-Show-Do (TSD), Distraction (DIS), Positive Reinforcement (PR), Non-verbal communication (NVC), Nitrous oxide/oxygen inhalation (NOI), Protective Stabilization (PS), Sedation (SD) and General Anesthesia (GA). BGT explanation consisted of information regarding indications and procedures involved, as well as how procedures were implemented. Three previously trained examiners followed a script with a written description of each method based on the Guidelines on Behavior Guidance for the Pediatric Dental Patient [5]. Explanations were performed individually. Participants were then asked whether they would accept, accept with restrictions or do not accept the use of these methods. It was emphasized that the parents' views would not impact the quality of care provided to patients.

Data were statistically analyzed in order to investigate possible correlations and differences among variables. To compare the proportions among variables, a binomial nonparametric test to assess differences among proportions was used. To compare variables that exhibited a pattern of qualitative responses, the chi-square test was used through Monte Carlo simulation, with 10,000 resampling and confidence interval of 95%.

Results

The age of parents of patients ranged from 24 to 76 years, with mean age of 48.43 years. There were 68 mothers (81.93%) and 15 fathers (18.07%). The educational level distribution of parents was: 33 (40.74%) low level (illiteracy or incomplete primary education); 20 (24.70%)

intermediate level (complete primary education or incomplete high school); and 28 (34.56%) high level (complete high school, incomplete higher education or university degree). Two parents did not inform their educational level.

The age of patients ranged from one year and nine months to 59 years, with mean age of 24.45 years. There were 44 female (53.01%) and 39 male patients (47.99%). Patients with physical defects were 54.22%, 18.07% of patients showed congenital abnormalities; 15.66% of patients had intelligence, psychical or behavioral deviations and 12.05% of patients had chronicle diseases or others diagnoses.

Acceptance of parents in relation to behavioral management methods

TSD, DIS, PR and NVC techniques were grouped as communicative management (CM), since all parents considered them totally acceptable. The use of PS was considered acceptable by 76 parents (91.57%), SD by 65 parents (78.32%), GA by 63 parents (75.90%) and NOI by 62 parents (74.70%).

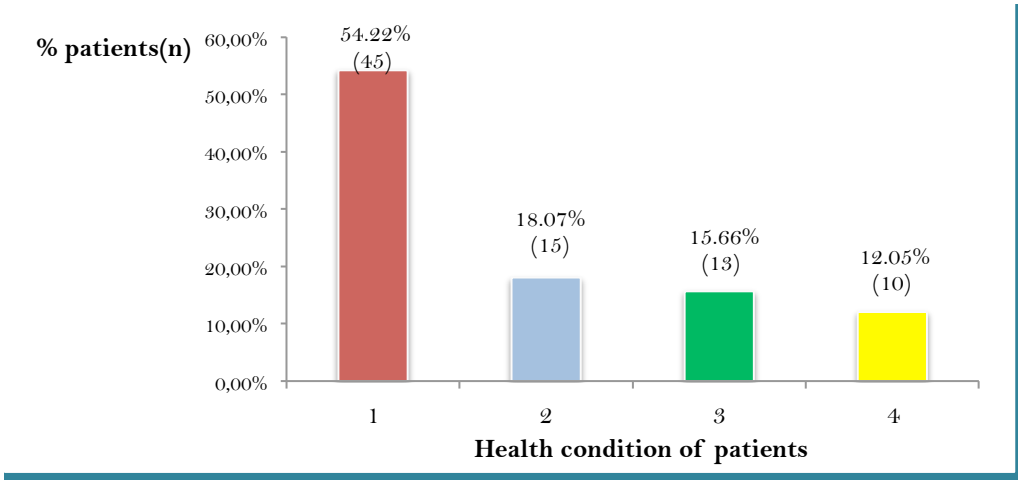

Figure 1. Classification of health condition of patients: 1: patients with physical defects; 2: patients with congenital abnormalities; 3: patients with intelligence, psychical or behavioral; deviations; 4: patients wit chronicle diseases or others diagnosis not enrolled.**

Figure 2 shows the acceptance concerning each of the five evaluated methods.

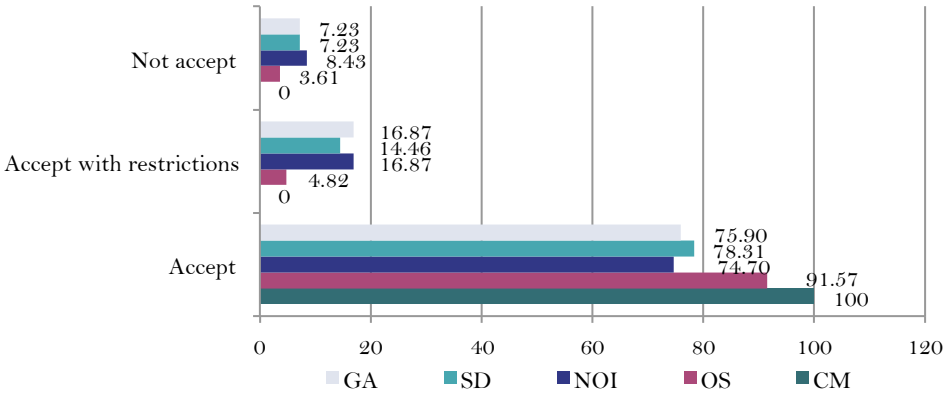

Figure 2. Parental acceptance of BG techniques.

When CM was compared with the other BGT, differences were significant in all cases ($p \leq 0.05$). There were also statistically significant differences among acceptance levels in the following comparisons: PS versus NOI ($p = 0.0037$), PS versus SD ($p = 0.0169$) and PS versus GA ($p = 0.0062$). Therefore, CM and PS methods were statistically more accepted than the other methods. There were no statistically significant differences among acceptance levels regarding NOI, SD and GA ($p > 0.05$). BGT acceptance according to variables educational level of parents and age and diagnosis of patients is shown in Table 1.

Table 1. Frequencies of acceptance of BGT according to the variables analyzed.

	CM		PS		NOI		SD		GA	
	N	%	N	%	N	%	N	%	N	%
Level of education*										
Low	33	100	30	91.0	24	72.73	26	78.79	26	78.79
Middle	20	100	18	90.0	17	85.0	17	85.0	17	85.0
High	28	100	27	96.43	20	71.43	20	71.43	19	67.86
Patient's age group										
1-10 years old	14	100	13	92.86	9	64.28	8	57.14	9	64.28
11-20 years old	27	100	25	92.59	21	77.78	22	81.48	19	70.37
21–30 years old	13	100	12	92.31	9	69.23	11	84.61	10	76.92
31-40 years old	15	100	12	80	13	86.67	14	93.33	14	93.33
41-50 years old	6	100	6	100	4	66.67	4	66.67	5	83.33
≥ 51 years old	8	100	8	100	6	75	6	75	6	75
Diagnostic group**										
1	45	100	44	97.78	34	75.55	37	82.22	34	75.55
2	15	100	12	80	9	60	8	53.33	10	66.67
3	13	100	10	76.92	10	76.92	11	84.61	10	76.92
4	10	100	10	100	9	90	9	90	9	90

* Two parents did not inform their level of education. Therefore, these results are related to the other 81 participants; ** 1: patients with physical disabilities; 2: patients with congenital disabilities; 3: patients with mental, intelligence or behavioral deviations; and 4: patients with systemic chronic diseases or other diagnoses not included in any of the above groups.

Differences among acceptance levels for each method regarding the three educational levels were not statistically significant. However, significant differences were observed among parents with low and high educational levels regarding the acceptance of use of CM versus NOI, SD or GA ($p \leq 0.05$). In relation to parents with high educational level, there were also significant differences in the acceptance of use of PS in relation to the use of NOI ($p = 0.0109$), SD ($p = 0.0109$) and GA ($p = 0.0052$). However, among parents with intermediate educational level, there were no statistically significant differences among acceptance levels of methods evaluated.

Although the proportions of acceptance among parents of different educational levels were not statistically different, dependence among variables educational level and acceptance of use of PS ($p = 0.05$) was observed according to the chi-square test, revealing that low educational levels positively influenced the acceptance of this technique.

Regarding the age of patients, it was found that there was statistically significant difference regarding the acceptance of use of SD between parents of patients aged one and 10 years and parents of patients aged 31-40 years ($p = 0.0229$), since in this group, SD acceptance (93.33%) was statistically higher than that of parents of children (57.14%). In addition, in the group of patients

aged 1-10 years, there were statistically significant differences in the parental acceptance of the following BG: CM versus NOI (p = 0.0136), CM versus SD (p = 0.0057), CM versus GA (p = 0.0136), and PS versus SD (p = 0.0291). For the group age 11-20 years, significant differences were observed in the following comparisons: CM versus NOI (p = 0.0094), CM versus SD (p = 0.0189) CM versus GA (p = 0.0022) and PS versus GA (p = 0.0356). Although for the age group 21-30 years, there was a significant difference (p = 0.0297) only in the comparison between CM and NOI acceptance. In the other age groups, there were no statistically significant differences regarding acceptance of the five methods evaluated.

The use of PS was statistically more accepted by parents of patients with physical disabilities, when compared with both parents of patients with congenital disabilities (p = 0.0168) and parents of patients with mental, intelligence or behavioral deviations (p = 0.0089).

The use of SD was statistically more acceptable by parents of patients with physical disabilities when compared with parents of patients with congenital disabilities (p = 0.0252), and by parents of patients with systemic chronic diseases or other conditions when compared with parents of patients with congenital disabilities (p = 0.05). For the other methods, there were no statistically significant differences in acceptance, considering the groups of patients with different diagnoses.

Regarding the four diagnosis groups, there were no significant differences of parental acceptance regarding the use of CM and the use of PS (p> 0.05).

For parents of patients with physical or congenital disabilities, the use of CM was statistically more accepted in relation to the use of NOI, SD and GA. PS was also statistically more accepted by parents of patients with physical disabilities in comparison to NOI, SD and GA.

Dependence between patient's diagnosis and acceptance of PS was also observed (p = 0.013), since it was more accepted in the group of parents of patients with physical disabilities.

Discussion

Studies that have assessed parental acceptance regarding methods of behavioral management for SNP are not very common [7,8-10]. Thus, understanding parental perceptions and acceptance regarding the different methods used during dental care is very relevant. This is important because professionals can properly guide them, prevent possible misunderstandings and create and maintain a trusting and responsible relationship among parents, patients and professionals [10].

In contrast to methodologies used in other studies, in which videos or pictures were used to explain the behavioral management methods [8-10] for this study, verbal explanation, following a written script, was individually given to each of participants. This method was chosen because direct contact between researcher and participants provided the opportunity to answer any doubts in relation to BGT before they expressed their preference or opinion.

CM and PS were considered by parents the most acceptable methods for the dental care of SNP. It seems that the greater acceptance of these methods is due to the fact that parents are more familiar with the use of these techniques in the medical and dental care for these patients.

Furthermore, these methods can be easily performed in outpatient care, without the need for significant changes in the routines of both patients and parents and do not have significant side effects, which can occur with SD and GA. The high acceptance level can also be attributed to the trust established between parents and professionals who work in the department, since many patients have been monitored over long periods of time.

In a study performed with patients with cleft palate, the wide acceptance of parents was also observed for tell-show-do, voice control, protective stabilization and hand-over-mouth techniques [10].

The high CM acceptance reinforces the relevance of this method for the behavioral management of SNP. This result is consistent with findings of a study carried out with parents of autistic patients, in which positive reinforcement and tell-show-do techniques received 100% approval [11]. The same authors found that these techniques, as well as distraction, rewards and the presence of the father holding the patient's hand, were also considered effective by parents.

Therefore, techniques such as TSD and PR, which are universally used in pediatric dentistry in the care of both non-cooperative and cooperative children [2] must also be applied for the treatment of SNP. In another study carried out with children diagnosed with attention deficit and hyperactivity disorder, there was no statistically significant difference regarding the behavior of children without impairment using the TSD technique during dental visit [12].

There was no statistically significant difference in acceptance considering the educational level of parents. This result is consistent with those found by other study [7] in relation to the sedation and general anesthesia methods. However, it differs from results found by the same author regarding the acceptance of PS performed by the professional treating patients with mental deficits, which revealed that, parents with lower educational levels accepted better the use of restraints when compared with those with higher educational levels.

Parents with low educational level positively influenced in the acceptance of PS, although without statistically significant difference. Thus, there was a dependence among these variables (chi-square test, $p = 0.05$).

The results obtained in a study indicated that parents with lower educational level, low income and with disabled children showed higher acceptability in relation to BG methods [13].

The age of patients had a significant influence on the acceptance of the use of SD, as the parents of children aged 1-10 years were less favorable to this technique in comparison with parents of older patients (31-40 years). Previous author found that the age of patients did not influence the sedation acceptance [7]. However, in that study [7], the sample consisted of parents of patients aged nine months-14 years, while in this study, the age of patients ranged from one to 59 years.

The patient's diagnosis also influenced the parental acceptance of some BG method. Thus, the use of PS was better accepted by parents of patients with physical disabilities than by parents of patients with congenital disabilities, mental, intelligence or behavioral deviations. It is believed that this result can be attributed to the fact that most patients in the group with physical disabilities have

cerebral palsy, which often involves postural abnormalities requiring body stabilization in the dental chair.

The use of SD was also better accepted by parents of patients with physical disabilities and by parents of patients with chronic systemic disease or other conditions, when compared with parents of patients with congenital disabilities.

Some parents who accepted BGT with restrictions reported the use of PS (4.82%), NOI (16.87%), SD (14.46%) and GA (16.87%). Thus, these parents would accept that these techniques could be used for the care of patients only under certain circumstances, such as the need for more extensive or invasive treatments.

It is emphasized that no technique alone is appropriate for all SNP. The use of advanced BGT (PS, SD and GA) requires the signing of a consent form, which allows for better communication between parents and professionals, facilitating the acceptance of advanced BG [14].

So, providing a reason to justify the use of each BG method seems to increase parental acceptance, but not in all cases [15]. Simply providing information, without the opportunity for further clarification, may be insufficient to positively influence the acceptance of a procedure or may, in some cases, have the opposite effect.

It is believed that the trust in professionals involved in the treatment of these patients decisively influences parental acceptance regarding the proposed treatment. Therefore, maintaining interactive communication with parents about treatment planning, including the use of BGT that is often necessary is essential for the successful treatment of patients with special needs.

The total acceptance of CM approaches reinforces the power and relevance that communication has in the professional-patient-parent relationship. Thus, techniques based on communication should always be used, alone or combined with other necessary techniques in caring for SNP. So, variables such as educational level, as well as the patient age and diagnosis, may influence the acceptance of some behavior guidance techniques.

Conclusion

There was little rejection of methods evaluated, and it was concluded that communicative management and protective stabilization were the methods most readily accepted by parents of SNP.

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