

ABSTRACT

Purpose: The aim of this cross-sectional study was to assess when and why certain pharmacologic behavior guidance techniques (pBGTs) are acceptable to parents and if culture influences acceptability. **Methods:** English- and Spanish-speaking Texan parents and Spanish-speaking Colombian parents of children under 18yrs of age watched a video of either nitrous, sedation, or general anesthesia and were asked to rate their acceptance and what factors alter acceptability (age, medical complexity, dental treatment needs, fear/anxiety, cooperation, and finances). Parents were also given an opportunity to provide safety concerns for the pBGT they scored. Statistical analysis with ANOVA completed; P<.05 were considered significant. **Results:** Three hundred four parents participated in this study. Overall, there was no difference in acceptability of the pBGTs. Differences were identified between pBGT acceptance and patient age, medical complexity, and dental treatment needs. There were differences in the cultural-linguistic communities when evaluating nitrous alone (age and level of cooperation, p<0.05), sedation alone (age, medical complexity, dental treatment needs, level of anxiety, and level of cooperation; p<0.05), and general anesthesia alone (age, medical complexity, dental treatment needs, level of anxiety, and level of cooperation; p<0.05). **Conclusions:** Acceptability of pBGTs vary based on multiple patient factors, including age, medical history, treatment needs, cooperation of the patient and cost. Language and culture of the parents significantly influenced parental acceptance rates. Providers should avoid generalizing acceptability of pBGTs and be aware of specific factors that may influence parental opinions. Providers should be aware of potential concerns of parents and be able to provide up-to-date, culturally-sensitive responses to the utilization of pBGTs in their office.

BACKGROUND

- Behavior guidance plays a critical role in providing safe and effective dental treatment for children who exhibit limited cooperation in the dental office.
- When basic behavior guidance techniques have been exhausted, providers may choose from pBGTs such as nitrous oxide, sedation, and general anesthesia.
- Understanding parental perception of these techniques enhances communication and cooperation during dental visits.
- Cultural influences can significantly shape how parents perceive these techniques, potentially impacting a child’s dental experience.

The goal of this project was to ascertain parental acceptance towards pBGTs utilized in pediatric dentistry, to understand factors that influence the acceptability, to determine if culture and/or language affects acceptance, and to document specific safety concerns from parents.

METHODS

- This study was approved by the UTHealth Houston IRB for use in English and Spanish-speaking parents.
- Parents were shown one of three pBGTs and asked to rate their overall acceptability of that pBGT, using a visual analog scale (Figure 1).
- Parents were then asked to rate acceptability based on six factors (Figure 2).
- There was a free response section at the end of the survey in which parents could express further concerns, when a technique would be acceptable to them, and what would cause their concerns or acceptance of the BGT to change.
- Statistical analysis completed; p-values less than 0.05 considered significant.

Figure 1: Visual Analog Scale

Age:	Medical History:	Treatment Needs:	Anxiety Level:	Cooperation:	Cost:
• 0-2yrs • 3-6yrs • 7-12yrs • 13-18yrs	• Healthy • Mild health care needs (asthma, mild autism, etc) • Severe health care needs (heart defects, epilepsy, etc)	• 5 or less fillings • 6-10 fillings • 10+ fillings • Extractions • Nerve treatments	• None • Minimal • Moderate • Severe	• Freely cooperates • Cooperates with prompting • No cooperation	• None/covered by insurance • Low • Moderate • High

Figure 2: Parents were asked to evaluate the pBGT use for these six subgroups

RESULTS

- 304 parents participated in this study, including 150 Spanish-speaking parents from Colombia, 107 English-speaking parents from Texas, and 47 Spanish-speaking parents from Texas.
- The overall parental acceptance rate from parents in Texas was 84.5% for Nitrous, 78.2% for Sedation, and 81.4% for General Anesthesia. There was no significant difference in overall acceptance rate (p=0.67).
- Table 1 shows significant differences in overall acceptance rate by pBGT.
- Significant differences were identified in nitrous (Table 2), sedation (Table 3), and general anesthesia (Table 4) acceptance by cultural-linguistic community.

Table 1: Overall Acceptance by pBGT.

Category: Variable	Nitrous	Sedation	General Anesthesia	p-value	TUKEY
Age: 7-12 yrs [mean (SD)]	78.65 (27.5)	70.01 (30.0)	66.00 (29.5)	0.02	N>GA
Medical Complexity: Healthy [mean (SD)]	84.92 (24.0)	73.70 (33.9)	74.18 (32.0)	0.02	N>S; N>GA
Dental Treatment: 5 or Less Fillings [mean (SD)]	74.00 (30.6)	75.91 (32.4)	58.38 (36.8)	0.01	N>GA, S>GA

Table 2: Acceptance of Nitrous by Category/Variable and pBGT.

Category: Variable	English-Speaking Texans (eT)	Spanish-Speaking Texans (sT)	Spanish-Speaking Colombians (C)	p-value	TUKEY
Age: 0-2y (mean,SD)	56.00, 36.97	98.00, 2.82	64.54, 37.57	0.03	
Cooperation: Not Cooperative [mean (SD)]	59.72, 35.31	72.82, 30.44	80.82, 29.04	0.027	C>eT

Table 3: Acceptance of Sedation by Category/Variable and pBGT.

Category: Variable	English-Speaking Texans (eT)	Spanish-Speaking Texans (sT)	Spanish-Speaking Colombians (C)	p-value	TUKEY
Age: 0-2y (mean,SD)	76.12 (30.8)	45.71 (51.3)	50.17 (42.1)	0.049	eT>C
Age: 7-12 yrs [mean (SD)]	86.96 (19.0)	71.38 (40.2)	58.73 (29.1)	<0.001	eT>C
Age: 13-18 yrs [mean (SD)]	91.23 (18.2)	92.00 (17.9)	60.97 (31.5)	<0.001	eT and sT>C
Medical Complexity: Healthy [mean (SD)]	96.32 (9.5)	67.08 (42.4)	59.67 (34.1)	<0.001	eT and sT>C
Medical Complexity: Mild HCN [mean (SD)]	78.96 (23.4)	70.80 (42.7)	52.88 (32.8)	0.007	eT>C
Dental Treatment: 5 or Less Fillings [mean (SD)]	85.60 (24.6)	90.50 (23.8)	53.28 (36.5)	<0.001	eT and sT>C
Dental Treatment: 6-10 Fillings [mean (SD)]	87.79 (26.0)	69.00 (42.3)	55.77 (33.8)	<0.001	eT>C
Dental Treatment: Extractions [mean (SD)]	93.22 (19.2)	87.38 (21.4)	77.67 (27.3)	0.03	eT>C
Level of Anxiety: None [mean (SD)]	72.65 (31.8)	53.10 (48.8)	28.57 (28.4)	0.002	eT>C
Level of Anxiety: Minimal [mean (SD)]	74.96 (27.9)	57.33 (30.7)	45.87 (33.5)	0.01	eT>C
Level of Anxiety: Moderate [mean (SD)]	83.92 (25.0)	71.43 (27.1)	53.40 (27.7)	<0.001	eT>C
Level of Anxiety: Severe [mean (SD)]	89.07 (26.5)	31.67 (35.4)	76.40 (29.9)	<0.001	eT and C>sT
Cooperation: Freely Cooperate [mean (SD)]	69.04 (38.7)	60.33 (42.6)	29.40 (31.8)	0.02	eT>C
Cooperation: With Prompting [mean (SD)]	77.48 (28.9)	78.29 (31.8)	33.18 (31.1)	<0.001	eT and sT>C

Table 4: Acceptance of General Anesthesia by Category/Variable and pBGT.

Category: Variable	English-Speaking Texans (eT)	Spanish-Speaking Texans (sT)	Spanish-Speaking Colombians (C)	p-value	TUKEY
7-12 yrs (mean (SD)	78.13 (30.4)	48.50 (68.6)	59.58 (25.1)	0.03	eT>C
Medical Complexity: Healthy (mean (SD)	82.68 (25.8)	94.33 (6.7)	65.41 (35.5)	0.04	eT>C
Medical Complexity: Mild HCN (mean (SD)	72.09 (26.6)	56.75 (47.2)	44.40 (31.4)	0.007	eT>C
Dental Treatment: 6-10 Fillings (mean (SD)	83.65 (22.4)	74.50 (36.1)	59.77 (34.6)	0.02	eT>C
Dental Treatment: 10+ Fillings (mean (SD)	87.87 (16.0)	65.00 (56.4)	66.68 (32.9)	0.02	eT>C
Level of Anxiety: Moderate (mean (SD)	64.79 (31.0)	98.50 (2.1)	53.07 (27.0)	0.05	sT>C
Cooperation: With Prompting (mean (SD)	54.45 (33.0)	100.0 (0.0)	32.61 (24.5)	0.002	eT and sT>C

DISCUSSION

Overall, all pBGTs were acceptable to parents. In this study, there were ethnic and patient-specific factors that influenced parental pBGT acceptance.

Limitations:

The Hispanic population was divided into English- and Spanish-speaking, perhaps masking differences in those that spoke both languages Colombians were not asked to provide their overall acceptance of the specific pBGT. Ethnicity is hard to quantify for an individual, therefore the findings of this study cannot be generalized to all people of a certain ethnicity

Further research should focus on these and other ethnic groups and other factors that could affect parental influence, such as experience of provider, familiarity with the pBGT and whether attitudes change over time.

CONCLUSIONS

1. Acceptability of pharmacologic BGTs vary based on multiple patient factors, including age, medical history, treatment needs, cooperation levels and cost.
2. In this study, ethnicity and language spoken of parents significantly influenced parental acceptance rates, so providers should avoid generalizing acceptability and provide culturally-centered care.

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REFERENCES

