Cross-Cultural Assessment of Caregiver Attitudes on Pediatric Dental Anxiety Aids

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Introduction

Dental fear and/or anxiety (DFA) is a prevalent condition that many people may experience, irrespective of age and culture (1). DFA has ***no singular root cause and is multifactorial in etiology***. Literature has proposed that there ***is no specific single therapy that can rectify DFA cases*** for all affected populations equally. Children represent a vulnerable group of patients that may experience DFA and a lack in obtaining dental care. It was reported that **children with increased levels of DFA had higher incidences of decayed, missing and filled tooth surfaces** (1). It has also been suggested that factors of **low socioeconomic status, diverse cultural or minority ethnic backgrounds, and/or poor education (whether combined or individually) can lead to DFA** (3). Studies have reported varying age ranges of pediatric patients assessed for DFA (5). The American Academy of Pediatric Dentistry (AAPD) provides guidelines on best behavioral practices for pediatric dentists and caregivers of children. However**, it does not take into consideration the role of cultural perceptions when using pediatric DA aids.** Tufts University School of Dental Medicine (TUSDM) elicits many of these recommended AAPD behavioral techniques. However**, it has been noted that the "Tell-Show-Do" method is a standardized first attempt behavioral guidance technique used on all pediatric patients initially, irrespective of race, ethnicity, or cultural background.**

Hypothesis: As per caregiver perceptions, there are cultural factors or preferences that differentiate between two groups: those pediatric patients who *only* need to be exposed to the commonly used DA technique, "Tell-Show-Do," and those who require a *combination* of dental anxiety techniques suggested by the AAPD best practices on behavioral guidance report.

Objectives

This **study's aim** was to investigate the perceived effectiveness and knowledge towards culturally preferred dental anxiety (DA) aids among caregivers of pediatric patients at Tufts University School of Dental Medicine (TUSDM) with cross-cultural analysis. Within this main aim, we also proposed a secondary aim that included analysis of two caregiver populations (1) that have had, and (2) have not had, their child identified with dental anxiety.

Materials and Methods

The main steps of this study are presented below:

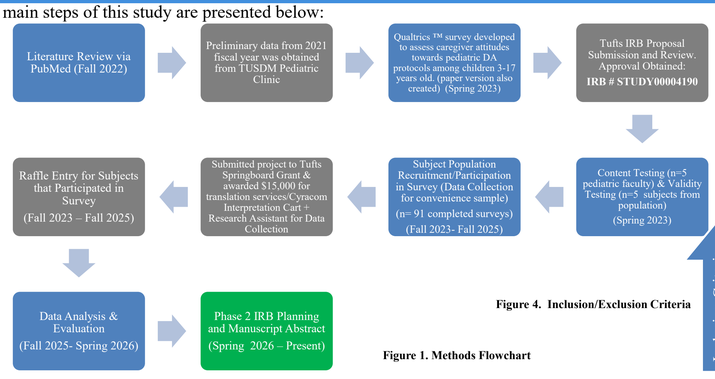

Figure 1. Methods Flowchart

Figure 2. Qualtrics Survey (Preview)

Figure 3. Qualtrics Raffle Entry (Preview)

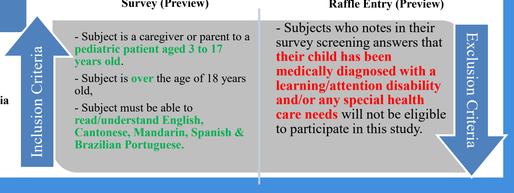

Figure 4. Inclusion/Exclusion Criteria

Results

Table 1. Percentages of Pediatric Population Race at Tufts University School of Dental Medicine (TUSDM)

Race	Percentage
Asian	33.00%
Black	7.00%
Multi (2 or more races)	2.00%
Declined	39.00%
Native American	0.40%
Unknown	0.03%
White	11.00%
Not Represented (1 or more races)	7.00%

Data reported from 2021 fiscal year TUSDM Pediatric Dental Clinic

Table 2. Percentages of Pediatric Population Ethnicity at Tufts University School of Dental Medicine (TUSDM)

Ethnicity	Percentage
Declined	39.00%
Latino	8.00%
Non-Hispanic	46.00%
Other	2.00%
To be determined	5.00%

Data reported from 2021 fiscal year TUSDM Pediatric Dental Clinic

Does your child have prior history of dental anxiety?

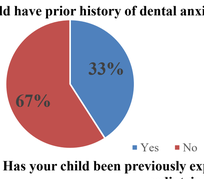

Figure 5: Question 11b Responses

Do you have prior knowledge of Dental Anxiety techniques used at TUSDM's Pediatric Clinic?

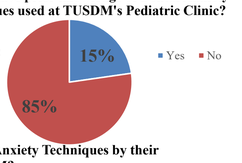

Figure 6: Question 12 Responses

Has your child been previously exposed to Dental Anxiety Techniques by their pediatric dentist at TUSDM?

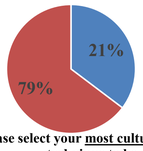

Figure 7: Question 13 Responses

***Of the **21% that have been previously exposed, 61% of caregivers** stated that believe that the dental anxiety techniques used at TUSDM are effective with their child.

Please select your most culturally favorable dental anxiety technique to be used on your child.

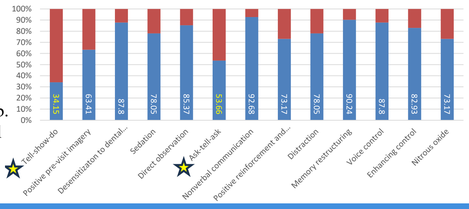

Figure 8: Question 14 Responses

Statistical Analysis

- **Fisher's exact test:** Child's race with Q11b (Does your child have a prior history of dental anxiety?) There is a **statistically significant association (p = 0.03)** between child's race and Q11b.
- **Two-Sample Wilcoxon rank-sum (Mann-Whitney) test:** Child's age with Q13_7 (Which dental anxiety techniques used in the TUSDM pediatric dental clinic does your child respond well to? **Option #7 is ask-tell-ask**) There is a **statistically significant difference** in median child's age between categories of the survey question **(p = 0.01).**

Discussion

- Based on 2021 fiscal year data from TUSDM Pediatric Clinic's axiUm records, there were **7,468 patient visits, with 3,144 pediatric patients seen**. TUSDM's patient population is culturally diverse with more than 40% identifying as multi-racial or non-white (**Tables 1 and 2**).
- Since this was a continuing study (with a convenience sample of n=91 responses), descriptive statistics were conducted and stratified by age, race/ethnicity, language, and gender of pediatric patients in relation to perceived effectiveness of DA aids among caregivers.
- **Significance testing was conducted, but was limited due to small sample size.**
  - **Race/Ethnicity**: **White = 25%; Black/African American = 32%; NonHispanic/Latino = 57%; Hispanic/Latino = 22%; Asian/Pacific Islander = 23%**
  - **Age: 3-7yo (35%); 8-12yo (27%); 13-17yo (38%)**
  - **Language: Approximately 57% English, 20% Chinese/Mandarin, and 6% Spanish and 17% Other** as primary language
  - **Gender**: **82% Female**; %18 Male
- Although 95% of caregivers answered that they and their child do not have cultural/religious practices that affects how their dentist provides their child dental care (Q10), **36% responded that they** think it is important for their child's dentist to take their child's cultural/religious practices/preferences into consideration when providing care (Q10b).
- Understanding that cultural sensitivity is important**,** ***43% parents/caregivers answered "Maybe" and 22% answered "Yes" that they believe that one DA technique would be more effective over another for their child based on culture (Q15).*** *But,* ***53% of parents/caregivers do not think that there is a connection between their child's cultural needs and the current (or future) use of DA techniques used (Q16).*** **60% of parents** want to learn more about the dental anxiety techniques used at TUSDM (Q17).

Conclusions

- **Dental anxiety is a barrier to quality oral health care and treatment.** With growing societal diversity, it is imperative that **appropriate DA techniques are selected to address cultural and ethnic specific factors among children.**
- Despite limitations in generalizability, **the findings from this study add to the body of evidence on DA aids and provide insight on cultural influences and caregiver perceptions at TUSDM.** When shared broadly, this information will increase practitioners' understanding on how to better utilize DA techniques among pediatric patients in a culturally sensitive manner.
- **Limitations**: Convenience sample (n=91), although larger than preliminary study before translation services and Cyracom Cart, is still small and with a larger "n" more statistically significant difference among categories may be seen. Translation of surveys took more time than anticipated and slowed data collection timeline.
- **Additional data collection is still on-going (for Springboard Grant).** With the inclusion of non-English caregivers, we will continue to evaluate the differences by race/ethnicity and languages in relation to the perceived effectiveness of DA aids.

Significance/Future Planning

- This study's significance highlights patient care and reduces the cultural barrier that may be present in determining which behavioral technique is most effective in reducing DFA in children at TUSDM pediatric clinic.
- **Abstract/Manuscript is currently being written for this study. Potential journals include AAPD, JDE, EJPD, JOCPD, IJPD, and Contemporary Pediatric Dentistry.**
- **Phase 2 of this study is currently undergoing IRB planning.**
- **Further continued assessment in this field is warranted.** Future studies will provide insight on the most culturally appropriate DFA mitigating behavioral techniques at TUSDM, alleviating societal barriers and increasing cultural competence in patient care.

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References:

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