

Assessment of dental knowledge and evaluation of dental practices of pediatric dental patients and their caregivers in a diverse, multicultural, low socio-economic population who is at high-risk for dental caries



Robert M. Hales, DDS, Neal G. Herman, DDS, Kelly Cervellione, MA, MPhil
Jamaica Hospital Medical Center Department of Dental Medicine Division of Pediatric Dentistry

Introduction

- There are many known risk factors for dental caries in early childhood. Often, it’s the lack of dental education and knowledge of the caregivers which directly impacts the oral health of a child¹
- Most at-risk children raised in poverty are almost twice as likely to experience dental caries than those living comfortably and they’re also less likely to receive treatment.²
- In disadvantaged areas, there is usually a lack of resources leading to lower dental education and knowledge in the populations that need it most²
- In a location such as Jamaica, NY, where there is an abundance of risk factors for poor dental health in pediatric patients, it is important to better understand specific targets for educational intervention in the context of limited resources for interventions

Purpose

- To explore dental knowledge and practices in a diverse, multicultural, low socio-economic population who is at high-risk for dental caries in order to prioritize resources in developing a targeted educational campaign to increase dental knowledge and awareness

Methods

- A 39-question survey was administered to caregivers of pediatric dental patients. Information on demographics, culture, dental practices, nutrition and family dental history were collected. Independent sample t-tests and chi-square tests were used to compare characteristics between children with and without history of caries; p< .05 was considered significant

Results

TABLE 1: Child demographic and background characteristics*

		# of respondents
Age, years, median (range)	7.0 (2.0-12.0)	40
Gender, male	22 (56%)	39
Child born in US ^A	35 (88%)	40
Born premature	2 (5%)	40
Child predominantly breastfed	20 (49%)	41
Child first dental visit age		35
2 years or younger	22 (63%)	
3-4 years	5 (14%)	
5 years or older	8 (23%)	
Only child in household	9 (23%)	39
Takes daily vitamins	13 (32%)	38
Significant medical history/prone to infection	0	40
Previous dental trauma	5 (14%)	37

TABLE 3: Child dental characteristics*

		# of respondents
Had cavity requiring filling	21 (68%)	31
Had baby root canal	2 (5%)	39
Had silver crown	5 (13%)	39
Had tooth removed	6 (15%)	39
Had other/unknown types of procedure	4 (10%)	39

TABLE 5: Differences in characteristics between children with history of cavities and those without history of cavities*

	Without Cavities	With Cavities	p-value
Gender, male	6 (67%)	11 (55%)	.56
Child born in US	8 (80%)	19 (91%)	.42
Child age of first dental visit			.09
2 years or younger	6 (67%)	12 (60%)	
3-4 years	3 (33%)	2 (10%)	
5 years or older	0 (0%)	6 (30%)	
Only child in household	1 (10%)	8 (40%)	.09
Daily vitamins	4 (40%)	7 (33%)	.72
Primary caregiver born outside US	7 (70%)	11 (52%)	.35
Primary caregiver first dental visit in early childhood (<6 years old)	3 (38%)	7 (54%)	.47
Primary caregiver has cavities	7 (78%)	17 (90%)	.41
Primary caregiver last dental visit			.06
Within last 1 year	8 (80%)	7 (33%)	
Between 1 and 2 years ago	1 (10%)	9 (43%)	
Between 3 and 5 years ago	0 (0%)	4 (19%)	
More than 5 years ago	1 (10%)	1 (5%)	
Times brush teeth per day			.25
Less than twice/day	3 (30%)	3 (14%)	
Twice/day or more	7 (70%)	18 (86%)	
Child flosses teeth	3 (33%)	9 (38%)	.80
Child uses fluoride mouthwash	3 (33%)	14 (70%)	.06

* All data presented as N (valid %) unless otherwise indicated.

^A Of those children born outside the US who responded: Dominican Republic=1, Guyana=1, Jamaica=1, Pakistan=1.

^B Of those caregivers who were born outside of the US: Mexico/Central America=9, South Asia=5, Africa=3, Guyana=3, Caribbean Islands=2.

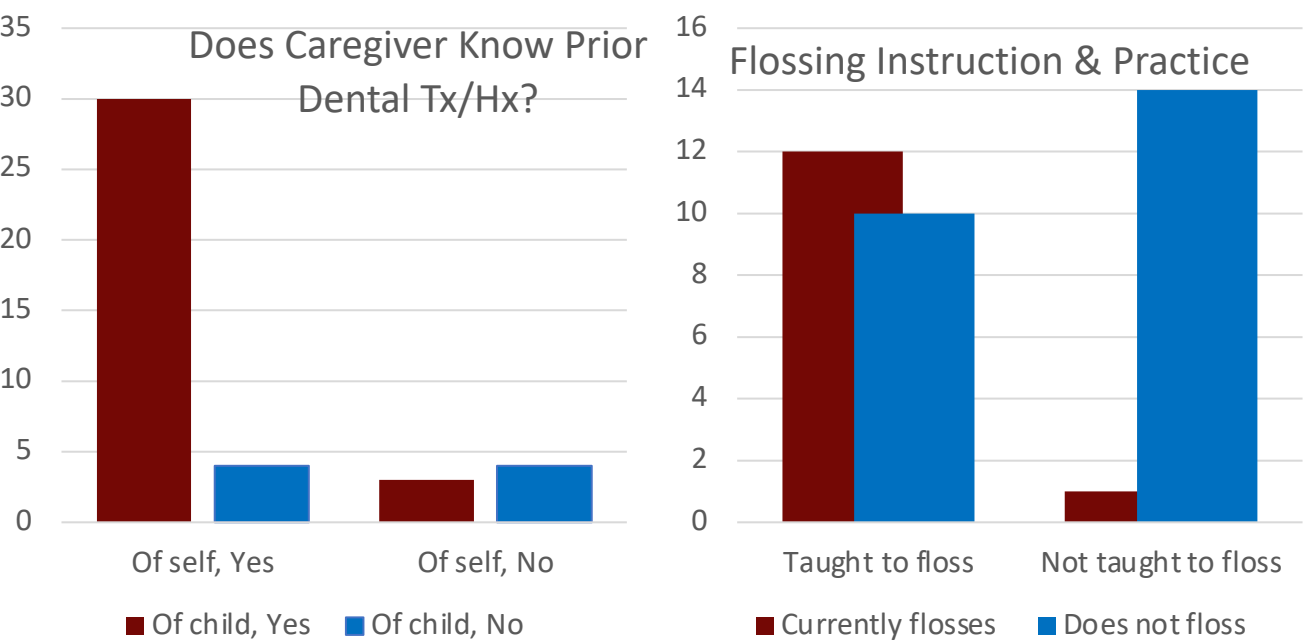
TABLE 2: Caregiver characteristics*

		# of respondents
Primary caregiver		40
Mother	36 (90%)	
Father	2 (5%)	
Grandparent	2 (5%)	
Primary caregiver born outside of US ^B	22 (55%)	40
Primary caregiver first dental visit in early childhood (<6 years old)	12 (46%)	26
Primary caregiver has history of cavities	27 (84%)	32
Primary caregiver last dental visit		37
Within last 1 year	18 (49%)	
Between 1 and 2 years ago	12 (32%)	
Between 3 and 5 years ago	4 (11%)	
More than 5 years ago	3 (8%)	

TABLE 4: Child dental and nutrition habits*

		# of respondents
Times brush teeth per day		39
Less than twice/day	9 (23%)	
Twice/day or more	30 (77%)	
Caregiver helps brush teeth	17 (46%)	37
Child taught how to floss teeth	22 (58%)	38
Child flosses teeth	13 (34%)	38
Child uses fluoride mouthwash	22 (58%)	38
Child mostly drinks (more than one choice allowed)		39
Tap water	8 (20%)	
Bottled water	23 (56%)	
Milk	9 (22%)	
Natural fruit juice	7 (19%)	
Juice from concentrate	6 (15%)	
How often the child eats sweets		39
Once or less/week	17 (44%)	
2-4 times/week	18 (46%)	
More than 4 times/week	4 (10%)	
Age started eating sweets		37
Younger than 2 years old	6 (16%)	
2 years old	20 (54%)	
Older than 2 years old	11 (30%)	

Chart 1: Oral health literacy and education*



Discussion

- The purpose of our study was to identify risk factors for caries in a high-risk population
- Children with their first dental visit at 5 years or older are more likely to have caries requiring restoration(s)
- Children without other children in the household are more likely to have caries requiring restoration(s)
- Children with primary caregivers who have less frequent dental visits are more likely to have caries requiring restoration(s)
- Children with primary caregivers who do not know their own caries/restorative dental history are more likely not know their child’s caries/restorative history
- Children who were not instructed on how to floss were much more likely not to practice flossing
- Primary caregivers who understand the importance of their own dental health tend to show the same practices towards their child’s

Conclusion

- In a population of already high risk patients with limited resources, limited education and low SES, we tend to see lower levels of dental and oral hygiene literacy in caregiver and child
- To counteract this problem in the surrounding population of Jamaica Hospital Medical Center, we as dental healthcare providers must ensure age appropriate dental referrals from the pediatrician(s) and proper education of the caregiver at each dental visit on the importance of oral health for caregiver and patient with the establishment of a dental home

References

- American Academy of Pediatric Dentistry. Policy on oral health care programs for Infants, children, adolescents, and individuals with special health care needs. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2021: 39-42.
- The state of Little Teeth - aapd.org. (n.d.). Retrieved April 19, 2022, from <https://www.aapd.org/contentassets/8f14adce3f754068b2bea900367c09d6/stateoflittleteeth.2ndedition.pdf>
- American Academy of Pediatric Dentistry (AAPD). “New Survey by America’s Pediatric Dentists Highlights Gaps in Oral Health Knowledge and Generational Differences in Caring for Little Teeth.” New Survey by America’s Pediatric Dentists Highlights Gaps in Oral Health Knowledge and Generational Differences in Caring for Little Teeth, 3 Oct. 2018, <https://www.prnewswire.com/news-releases/new-survey-by-americas-pediatric-dentists-highlights-gaps-in-oral-health-knowledge-and-generational-differences-in-caring-for-little-teeth-300723455.html>.