UNIVERSITY OF ILLINOIS CHICAGO

College of Dentistry

Exploring Flossing Behaviors, Barriers, and Facilitators in Young Children

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Background

- The etiology of dental caries is multifactorial, and flossing is empirically recommended as part of a comprehensive oral hygiene routine to prevent caries and promote periodontal health.
- Despite AAPD recommendations that caregivers begin flossing children's teeth once adjacent surfaces are in contact, more than 70% of children under age six never use dental floss. Additional research is needed regarding the flossing caries preventive effects.
- Previous research describes child, caregiver, and household dynamics that can serve as barriers and facilitators to flossing; however, little is known about the extent to which barriers and facilitators shape children's flossing regimens.
- Additional research is needed to develop focused interventions aimed at improving flossing behaviors and subsequently allowing a better understanding of flossing's effect on caries reduction.

Objectives

Study Aims:

1. Evaluate child and caregiver demographic and socioeconomic factors associated with lower flossing frequency in young children.
2. Evaluate whether caregiver oral hygiene behaviors and status are associated with child flossing frequency.
3. Describe caregivers' perceived agreement with barriers and facilitators to flossing their children's teeth and whether there is an association with flossing.

Hypotheses:

- H1: Demographic, socioeconomic, and CG oral health characteristics are associated with child flossing behavior.
- H2: Perceived barriers/facilitators are associated with child flossing behavior.

Methods

Design: Cross-sectional survey piloted then administered via Qualtrics® in March and April 2026.

Inclusion criteria: Legal caregivers ≥18 years, English-speaking, child aged 2–7

Recruitment Sites (Active & Passive):

1. UIC College of Dentistry — university-based, mostly Medicaid (95%), diverse, high caries rates
2. Apple Dental Care — private practice, mostly Medicaid
3. ABC Dentistry & Orthodontics — private practice; fee-for-service, higher SES, commercial insurance or fee-for service

Survey Domains:

- Child and CG demographics and socioeconomic factors
- Child and CG Oral health status and behaviors (flossing, brushing, assistance, toothpaste, caries)
- 15 barrier/facilitator items — 7-point Likert scale (–3 to +3)

Statistical Analysis:

- **Univariate:** Frequencies, means (SD), medians (IQR).
- **Bivariate:** Spearman's Rho, Mann-Whitney U, Kruskal-Wallis.
- **Ordinal Regression:** Independent predictors of child flossing.
- Post-Hoc power analysis to evaluate if sample size is sufficient.

Results — Sample Characteristics

101 Participants	**88%** Female Caregivers	**60%** Bachelor's degree or higher
38% Children with ≥1 cavity	**82%** Had adjacent tooth contact	**77%** Married or partnered
5.3 yrs. (1.6) Mean child age	**50%** Male child	**85%** 2 or more adults in HH

Table 1. CAREGIVER DEMOGRAPHICS (N=101)

Characteristic	N	%
Race/Ethnicity		
White/Caucasian	52	51.5%
Hispanic	30	29.7%
Black or African American	9	8.9%
Asian/Pacific Islander or Other	10	9.9%
Child Insurance		
Private insurance only	58	57.4%
Medicaid / Medical Card	36	35.6%

Table 2. CHILD FLOSSING FREQUENCY (N=100)

Frequency	N	%
We do not floss	19	18.8%
≥ Once/month, not weekly	19	18.8%
Once this week	18	17.8%
2–3× this week	11	10.9%
4–5× this week	9	8.9%
Daily (occasional miss)	**24**	**23.8%**

Behavior	Daily	Never
Brushing	90.1%	0%
Flossing	23.8%	18.8%

90% Of children brush ≥1x/day; 11% use non-Fl paste	**72%** Of children use flossers/flosspicks	**66%** Get help with flossing at least half the time, and 69% with brushing

Table 3. DEMOGRAPHIC, SES, and ORAL HEALTH ASSOCIATIONS WITH CHILD FLOSSING

Variable	r / p
Caregiver flossing frequency	r=+0.399, p<.001
Caregiver assistance w/ flossing	r=+0.356, p<.001
Brushing duration	r=+0.252, p=.012
Brushing frequency per day	r=+0.204, p=.042
Caregiver race/ethnicity (Hisp > others)	p=.044
Education, Insurance Employment Status, Household Size	*NS*

Key finding: 82% of children had adjacent tooth contact, meaning the vast majority clinically needed flossing. Yet *over 60%* flossed fewer than 2 days/week.

Results — Perceived Barriers to Flossing

Caregivers generally disagreed with the majority of barrier statements. Cost and access barriers were the most universally rejected.

Figure 1A. Agreement with Behavioral & Routine-Related Barriers to Child Flossing

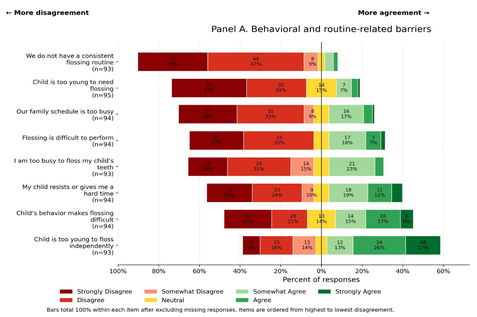
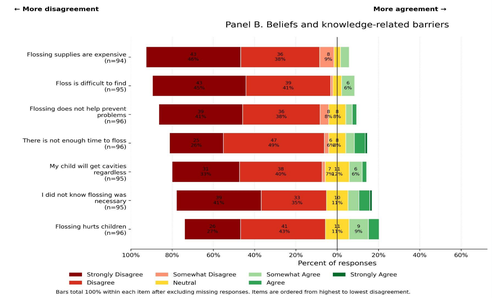


Figure 1B. Agreement with Beliefs & Knowledge-Related Barriers to Child Flossing



Key finding: The only item with a positive mean response was 'my child is too young to floss independently' (Mean=+0.44), reflecting appropriate caregiver awareness rather than a true barrier.

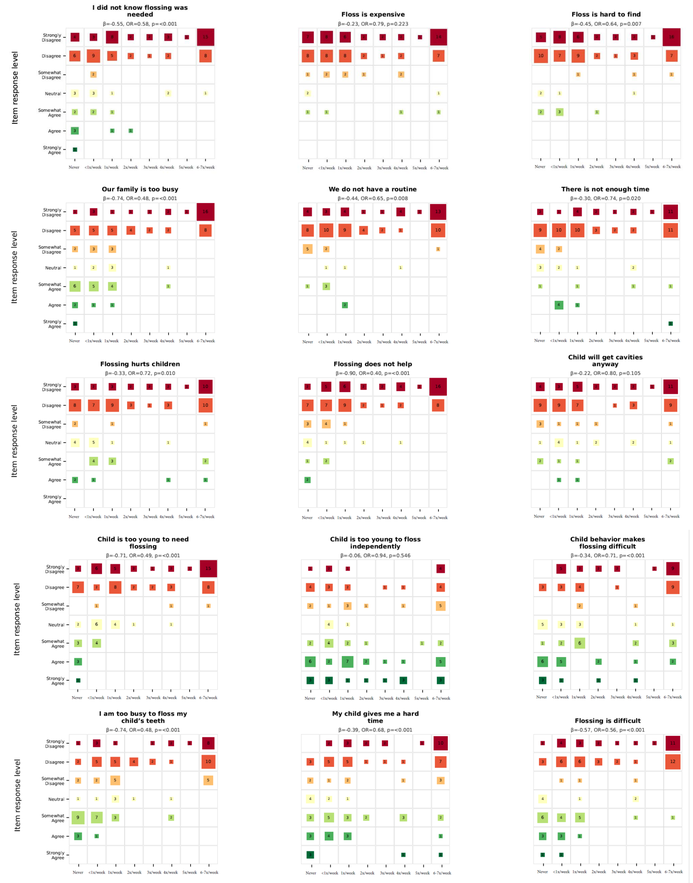
Results — Ordinal Regression & Discussion

Table 4. ORDINAL REGRESSION BETWEEN BARRIERS/FACILITATORS and FLOSSING FREQUENCY

Barrier / Facilitator	OR	P-value	Strength
Flossing does not help	0.40	<.001	★★★
I am too busy	0.48	<.001	★★★
Family too busy	0.48	<.001	★★★
Too young to need flossing	0.49	<.001	★★★
Flossing is difficult	0.56	<.001	★★
I did not know flossing was needed	0.58	<.001	★★
No routine	0.65	.008	★★
Floss hard to find	0.64	.007	★★
Child gives hard time	0.68	<.001	★★
Child behavior makes flossing difficult	0.71	<.001	★★
Flossing hurts child	0.72	.010	★
Not enough time	0.74	.020	★
Child will get cavities anyway	0.80	.035	★
Floss is expensive	0.79	.223	NS
Too young to floss independently	0.94	.550	NS

Key finding: 13 of 15 statements were significantly associated with flossing frequency. Post-hoc power analysis showed sufficient power for 11 of 15 statements.

Figure 2. MOSAIC PLOTS SHOWING ASSOCIATION BETWEEN FLOSSING FREQUENCY AND CAREGIVER AGREEMENT WITH BARRIERS



Conclusions

1) **Significant room for improvement:** Flossing behaviors were highly variable — many children flossed infrequently or never, despite good brushing habits and generally favorable oral health. Child flossing was associated with some caregiver behaviors.
2) **Caregiver involvement is essential:** Caregiver assistance is clinically necessary. A caregiver who does not floss regularly is unlikely to prioritize it for their child.
3) **Lack of Knowledge is Not the Problem:** Most caregivers understood the value of flossing. The challenge is about the practical demands of carrying out flossing consistently. Time pressure and child resistance were among the most actionable barriers identified.

Clinical Implications: Oral hygiene routine-building should be encouraged. Anticipatory guidance on managing child behavior and resistance should be provided as well. Future interventions can focus on known strong barriers to flossing.

Future Directions: These findings will inform targeted, caregiver-centered interventions aimed at increasing floss use and potentially reducing caries burden in pediatric populations. Future studies should expand to non-English-speaking populations, use longitudinal designs, and test specific intervention strategies based on these barrier data.

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References: