

# Caregiver Health Literacy and Fluoride Hesitancy: Pilot Study

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## OBJECTIVES

- (1) Examine the association between caregiver health literacy and fluoride-related attitudes and behaviors
- (2) Assess caregiver opposition to topical fluoride use, toothbrushing behaviors, and fluoridated toothpaste use in a pediatric dental clinic population

## METHODS

### Study Design

This cross-sectional pilot study surveyed caregivers of infants presenting to UIC post-graduate pediatric dental clinic who met the inclusion criteria.

### PARTICIPANTS Caregivers of Infants (N = 30)

Excellent:  $\geq 90$   
Sufficient:  $\geq 60.67$  and  $< 90$   
Problematic:  $> 50$  and  $< 66.67$   
Inadequate:  $< 50$

### Inclusion Criteria:

- Able to read and write in English
- Has a child between 0-3 years of age
- Infant is presenting for their initial dental visit at UIC COD

### Data Collection (Health literacy)

- Health literacy: HLSS-23
- Excellent  $\geq 90$
- Sufficient  $\geq 60.67$  and  $< 90$
- Problematic  $> 50$  and  $< 66.67$
- Inadequate  $< 50$

### Data Collection (Behaviors)

- Fluoride attitudes & behaviors
- Fluoride safety
- Necessity
- Use in professional and home settings

### Statistical Analysis

- Descriptive statistics
- Linear & logistic regression

## RESULTS

Table 1: Cross tabulation of Oral Hygiene Habits and Health Literacy

| Health Literacy     | 2x/day   | 1-2x/day  | Sometimes | Once a week |
|---------------------|----------|-----------|-----------|-------------|
| 1-Inadequate (n=1)  | 0 (0)    | 0 (0)     | 1 (1.00)  | 0 (0)       |
| 2-Problematic (n=2) | 1 (0.50) | 1 (0.50)  | 0 (0)     | 0 (0)       |
| 3-Sufficient (n=7)  | 2 (0.29) | 4 (0.57)  | 1 (0.14)  | 0 (0)       |
| 4-Excellent (n=21)  | 5 (0.24) | 12 (0.57) | 4 (0.19)  | 0 (0)       |

Table 2: Cross tabulation of Fluoride Opposition and Health Literacy

| Health Literacy     | Fluoride Opposition (Mean, SD) |
|---------------------|--------------------------------|
| 1-Inadequate (n=1)  | 2                              |
| 2-Problematic (n=2) | 2                              |
| 3-Sufficient (n=7)  | 4.387 (4.75)                   |
| 4-Excellent (n=21)  | 4 (4.90)                       |

Table 3: Cross tabulation of Fluoridated Toothpaste Use and Health Literacy

| Health Literacy     | Use fluoride | Do not use fluoride |
|---------------------|--------------|---------------------|
| 1-Inadequate (n=1)  | 1 (1)        | 0 (0)               |
| 2-Problematic (n=2) | 2 (0)        | 0 (0)               |
| 3-Sufficient (n=7)  | 4 (0.667)    | 3 (0.333)           |
| 4-Excellent (n=21)  | 20 (0.952)   | 1 (0.048)           |

### Key Findings

**30%** of caregivers scored well on understanding where to get professional help when ill

**23%** reported uncertainty with using information from mass media to stay healthy

**20%** had uncertainty finding information on handling mental health problems

**~50%** demonstrated some level of hesitation regarding fluoride, but majority reported using fluoridated toothpaste

✓ **Across outcomes, no statistically significant associations were observed.**

## CONCLUSIONS

Caregiver health literacy was not significantly associated with fluoride hesitancy or toothbrushing habits in this pilot study. While overall health literacy scores were high for caregivers, higher uncertainty among individual components of the health literacy survey may reflect disparities in care utilization patterns.

### Clinical Implications

- Health literacy screening may identify caregivers who need tailored fluoride education
- Targeted messaging for specific health literacy domains may improve fluoride acceptance
- Pediatric dental providers should consider varied communication strategies for diverse populations
- Future studies with larger samples are needed to detect significant associations

## FUTURE DIRECTIONS

- Expand sample size for increased statistical power
- Include multilingual populations to improve generalizability
- Longitudinal follow-up to assess behavior change over time
- Explore mediating variables such as socioeconomic status

### APPROVAL

IRB Protocol 2023-0612  
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