Association Between Parental Oral Health Literacy and Children's Oral Health

Presented by:
Simona Surdu, MD, PhD
Oral Health Workforce Research Center
Center for Health Workforce Studies
School of Public Health, University at Albany, SUNY

APHA's 2020 VIRTUAL Annual Meeting
Parental (Maternal) and Child Oral Health
Tuesday, October 27, 2020

Acknowledgements and Disclaimer

- This research was supported by the **Health Resources and Services Administration (HRSA)** of the US Department of Health and Human Services (HHS) under the Cooperative Agreement for an **Oral Health Workforce Research Center (OHWRC)**
- **OHWRC** is based at the **Center for Health Workforce Studies (CHWS),** School of Public Health, University at Albany, State University of New York (SUNY), and is the only research center **uniquely focused on the oral health workforce**
- The authors wish to acknowledge the contributions of the **Workforce Studies team** at the **Association of American Medical Colleges (AAMC)** to the current research
- **Co-authors:** Margaret Langelier, MSHSA and Jean Moore, DrPH, FAAN
- *The content and conclusions of this presentation are those of OHWRC and do not necessarily represent positions or policies of the SUNY, HRSA, or AAMC*

Introduction

- According to the National Health and Nutrition Examination Survey, **about 46% of children had caries** and **13% of children had untreated caries in 2015-2016** (Fleming & Afful, 2018)
- **Children from underrepresented minority groups** and **low-income families** have the highest prevalence of oral health concerns, creating striking **oral health disparities** (Fleming & Afful, 2018; DHHS, 2000)
- **Factors that may influence** children's access to utilization of oral health services also include **parental oral health literacy,** cost of care, and availability of oral health providers
- **Incorporating the consumer perspectives** on access to care for children is important in the design of public health policies and programs to improve the oral health status of children

Fleming E, Afful J. Prevalence of total and untreated dental caries among youth: United States, 2015–2016. NCHS Data Brief No. 307. Hyattsville, MD: National Center for Health Statistics; 2018.

US Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. Rockville,MD: National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.

Purpose of the Study

- The **OHWRC** collaborated with the **Workforce Studies team** at the Association of American Medical Colleges (**AAMC**) to add an oral health module to a survey of the US population in order to:
  - **Obtain information from consumers** on factors contributing to oral health disparities among children
  - **Evaluate the association** between **parents' characteristics including oral health literacy** and **oral health outcomes of their children**

Methods: Data Collection

- This research was based on **data collected** through the ***Consumer Survey of Health Care Access*** fielded by the AAMC in 2019. This is an online survey conducted biannually using a national panel of about 1.2 million adults.
- **Oral health data were collected** from parents of children under 18 years of age who were living in their household.
- **Oral health module** was designed by OHWRC and consisted of 25 questions asking about:
  - Respondents' ability to obtain needed oral health care for their children
  - Children's oral health status and oral health behaviors
  - Parental oral health literacy and attitudes toward oral health
  - Perceived barriers to and facilitators of access to oral health services for children
- The survey also **collected information** on demographics and socioeconomic factors.

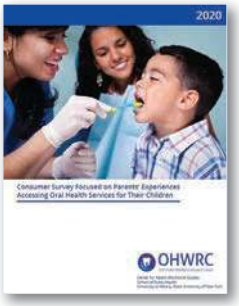
Methods: Parental Oral Health Literacy (OHL) & Children's Oral Health Outcomes Evaluation

- **Parental oral health literacy (OHL) evaluation:**
  - Parents were asked to indicate whether **10 statements** about children's oral health were *true* or *false;* a **composite score** was calculated based on the total # of correct responses
    - **Lower or higher OHL** (<5 correct answers; 5 or more correct answers)
- **Children's oral health outcomes evaluation:**
  - Parents were also asked to report about their children's oral health, including:
    - **Need** for and **utilization** of oral health services in the last 12 months
    - **Oral health symptoms** and **problems** in the last 6 months (ie, difficulty eating or chewing, toothache or sensitive teeth, broken or missing fillings)
    - **Number of cavities** diagnosed by a dentist in the last 12 months
    - **Overall oral health status** (excellent, very good, good, fair, poor)

Methods: Data Analyses

- Descriptive statistics (ie, frequency distribution, Pearson chi-square test) were used to estimate differences in children's oral health outcomes by parental oral health literacy level
- Survey data were weighted by age, gender, race/ethnicity, employment status, household income, educational attainment, and geographic region, in order to make the data more representative of the US population
- All analyses were conducted in SAS v9.4. Results were considered statistically significant at $P<.05$

Key Findings



- The survey sample was comprised of 1,785 parent respondents with 3,070 children in their care
- Surveyed parents reported that nearly two-thirds of children (63.5%) needed dental care in the past year
- Overall, 91.0% of children ***always*** received dental care as needed in the past year
- Yet, 7.8% only ***sometimes*** received care and 1.2% ***did not*** receive any needed oral health services in the past year

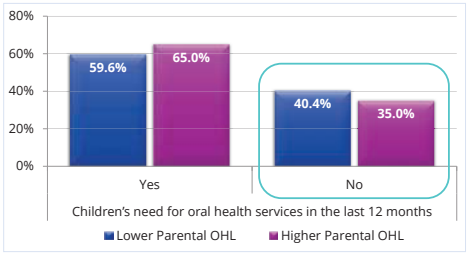
Parental Oral Health Literacy

Oral Health Knowledge Statements	Correct Answer	Incorrect Answer	Don't Know
There is a strong relationship between what children eat and their dental health *[true]*	69.6%	13.1%	17.3%
Thumb sucking can cause problems with the development of a child's teeth and jaws *[true]*	69.0%	14.9%	16.1%
Oral health does not affect overall health *[false]*	68.5%	18.7%	12.8%
If a child has been sick, you should replace the child's toothbrush once the child is well *[true]*	63.7%	12.6%	23.7%
Giving a young child fruit juice in a bottle at bedtime or naptime cannot cause tooth decay *[false]*	59.6%	25.7%	14.7%
Cavities are nearly 100% preventable *[true]*	57.6%	17.6%	24.9%
A child should go to the dentist by age 1 or within 6 months after the first tooth erupts *[true]*	53.7%	16.1%	30.2%
It is not important to clean a baby's gums with a soft cloth even before the baby's teeth surface *[false]*	47.8%	30.9%	21.3%
Giving a young child milk in a bottle at bedtime or naptime cannot cause tooth decay *[false]*	46.8%	30.5%	22.8%
Dental disease cannot be passed from a caregiver to a baby by sharing utensils *[false]*	30.7%	35.3%	34.0%

26.6% of parents correctly identified as *true* or *false* fewer than 5 of 10 statements about children's oral health

- No single statement was correctly identified by >70% of parents
- Only 53.7% of parents understood that children should visit a dentist within 6m of the 1st tooth eruption
- Parents expressed the most uncertainty (69.3%) about the transmissibility of dental disease from caregivers to babies

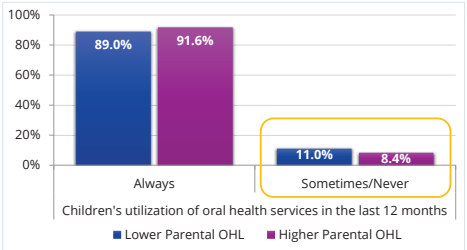
Association of Parental Oral Health Literacy (OHL) with Children's Reported Need for Oral Health Services



Note: There was a statistically significant difference, estimated using Pearson chi-square test, between parental oral health literacy and children's need for oral health services ($P=0.006$).

- Proportionally more **parents with lower OHL** reported that their children ***did not*** need oral health services in the past year (5.4% point difference) compared to **parents with higher OHL levels**

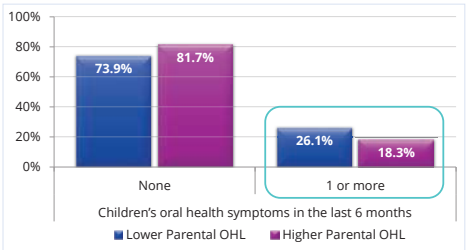
Association of Parental Oral Health Literacy (OHL) with Children's Utilization of Oral Health Services



Note: There was a statistically significant difference, estimated using Pearson chi-square test, between parental oral health literacy and children's utilization of oral health services ($P=0.017$).

- Proportionally more **parents with lower OHL** reported that their children only *sometimes* received needed dental care or *did not* receive any care in the past year (2.6% point difference) compared to **parents with higher OHL levels**

Association of Parental Oral Health Literacy (OHL) with Children's Oral Health Symptoms

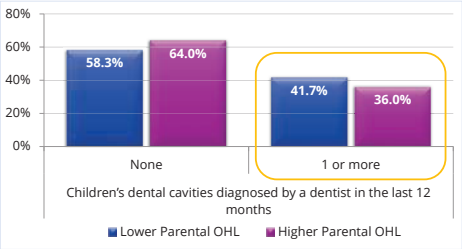


Note: There was a statistically significant difference, estimated using Pearson chi-square test, between parental oral health literacy and children's oral health symptoms ($P<0.001$).

- Children whose **parents had a lower OHL** were more likely to experience oral health symptoms (7.8% point difference) compared to children whose **parents had higher OHL levels**

Oral health symptoms:
Bad breath, dry mouth
Difficulty eating or chewing
Jaw pain, sores in mouth

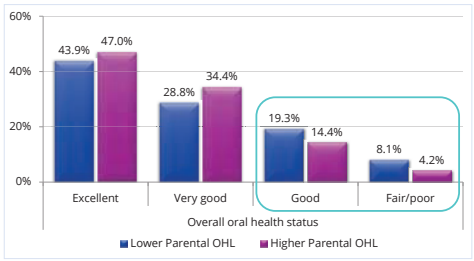
Association of Parental Oral Health Literacy (OHL) with Children's **Dental Cavities**



- Children whose **parents had a lower OHL** were more likely to experience dental caries (5.7% point difference) compared to children whose **parents had higher OHL levels**

Note: There was a statistically significant difference, estimated using Pearson chi-square test, between parental oral health literacy and children's dental cavities ($P=0.009$).

Association of Parental Oral Health Literacy (OHL) with Children's **Overall Oral Health Status**



- Children whose **parents had a lower OHL** were more likely to experience "good" or "fair & poor" oral health status (4.9% or 3.9% point difference) compared to children whose **parents had higher OHL levels**

Note: There was a statistically significant difference, estimated using Pearson chi-square test, between parental oral health literacy and children's overall oral health status ($P<0.001$).

Study Limitations

- First, respondents to this survey may differ from the general population; the potential limitations of consumer data collection were addressed by weighting the survey sample to achieve a representative profile of the national population as measured by the US Census Bureau.
- Another potential study limitation is the parental recall and report of information related to their children oral health. The effect of this bias on the study findings was minimized by using standardized questions and relatively short reporting periods (up to 12 months).
- Finally, the cross-sectional study design precludes any causal inferences.

Conclusions and Implications

- Levels of OHL among study parents were relatively low; no single statement was correctly identified by more than 70% of parents. Also, only about half of parents understood that children should visit a dentist within 6 months of the first tooth erupting.
- Parents with lower OHL were less likely to report a need for dental services for their children than other parents. Yet, according to accepted guidance, children should receive preventive care at least annually, indicating that all children "need" dental services.
- The current study also found associations between parental OHL and their children oral health services utilization, symptoms, cavities, and overall oral health status.
- These findings suggest the importance of continued efforts to increase OHL through the education of parents. Increasing their knowledge can improve the regular dental visits and oral health outcomes of their children.

Thank You

Questions?

Visit Us:
www.oralhealthworkforce.org