



Effects of Social Determinants of Health on dmft

HAINES G*, CASTILHO A, AGUIRRE O

Indiana University School of Dentistry

ABSTRACT

Objective: To describe social determinants of health and oral health behaviors associated with dmft (decayed, missing, and filled primary teeth) scores among children receiving dental care through a global service learning program in San Miguel Dueñas, Guatemala.

Methods: A cross-sectional, community-based needs assessment was conducted among 47 children aged 17 years or younger receiving care at a free dental clinic. Caregivers completed an interview survey in Spanish assessing education level, income, residence location, oral health knowledge, dietary practices, oral hygiene behaviors, feeding practices, and access to dental care. Children underwent a standardized dmft examination performed by a calibrated examiner using visual inspection with a dental mirror and explorer at the beginning of the clinical examination. Descriptive statistics were calculated.

Results: Forty-seven children were included in the analysis. The mean dmft score was 10.5 (SD = 4.8), with a median of 11 and a range of 0–23, indicating a substantial burden of dental caries. A dmft score ≥ 13 was observed in 75% of children. Limited prior access to dental care was evident, as 36% of children had never previously visited a dentist. Among caregivers, 83% reported knowledge of fluoride and 74% reported brushing their own teeth twice daily; however, only 53% reported that their child brushed twice daily.

Conclusions: Children in San Miguel Dueñas, Guatemala exhibited a substantial burden of dental caries. High dmft scores, limited prior dental care, and gaps in oral health practices demonstrate the influence of social and behavioral determinants on oral health and support the need for culturally appropriate, community-based preventive strategies.

METHODS

Study Design:

- Cross-sectional, community-based needs assessment
- Setting:** Free dental clinic, San Miguel Dueñas, Guatemala

Participants:

- Children ≤ 17 years old receiving care;
- Spanish-language caregiver interview assessing education, income, oral health knowledge, dietary practices, oral hygiene behaviors, feeding practices, and access to dental care
- Standardized dmft examination performed by a calibrated examiner using visual inspection with dental mirror and explorer

Data Collection:

- Descriptive statistics
- Spearman correlation coefficients, Wilcoxon Rank Sum tests, and Kruskal-Wallis tests
- Two-sided significance level $\alpha = 0.05$
- No multivariable analyses due to limited sample size

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RESULTS

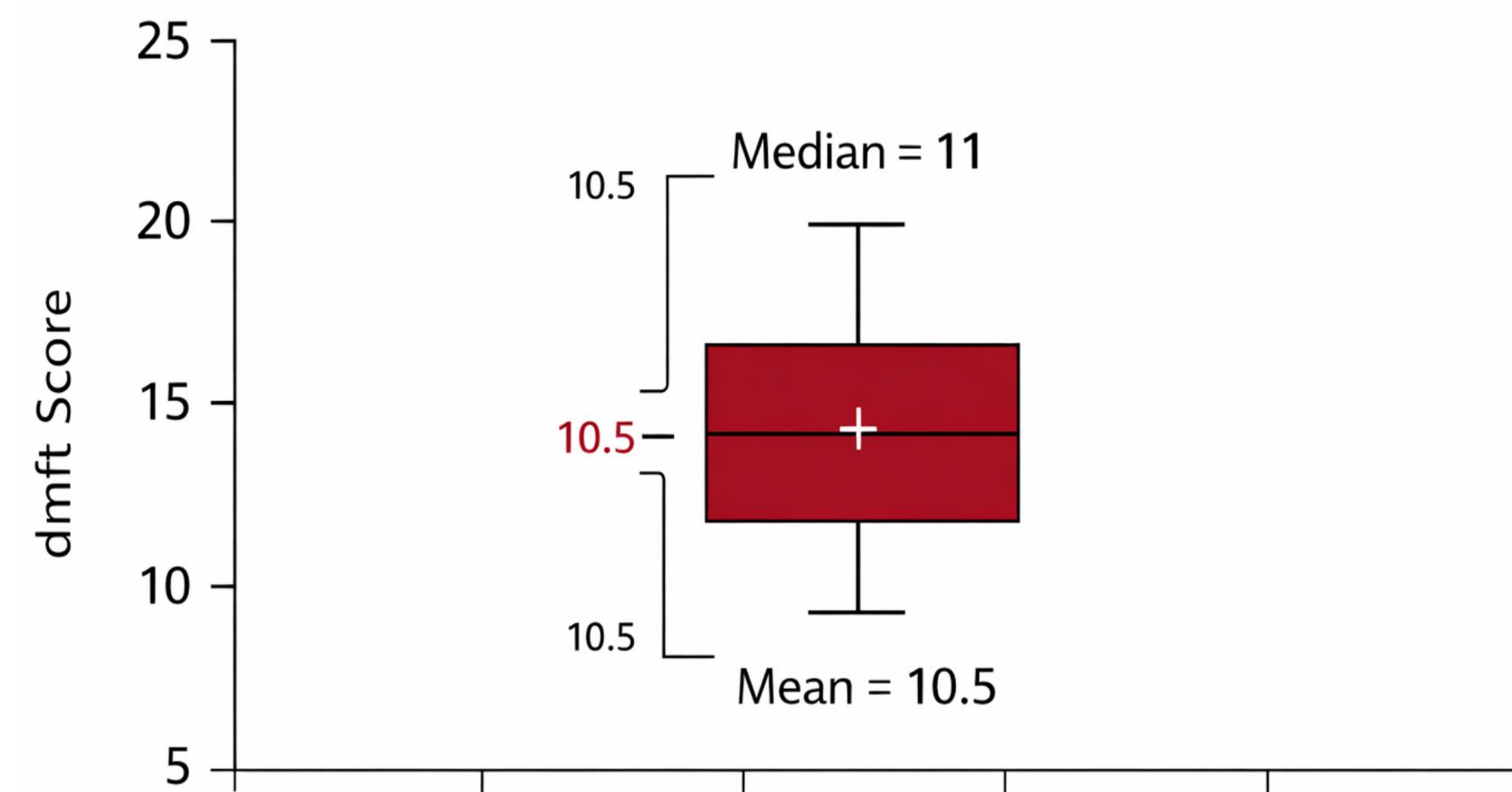


Figure 1. Distribution of dmft Scores Among Children in San Miguel Dueñas, Guatemala

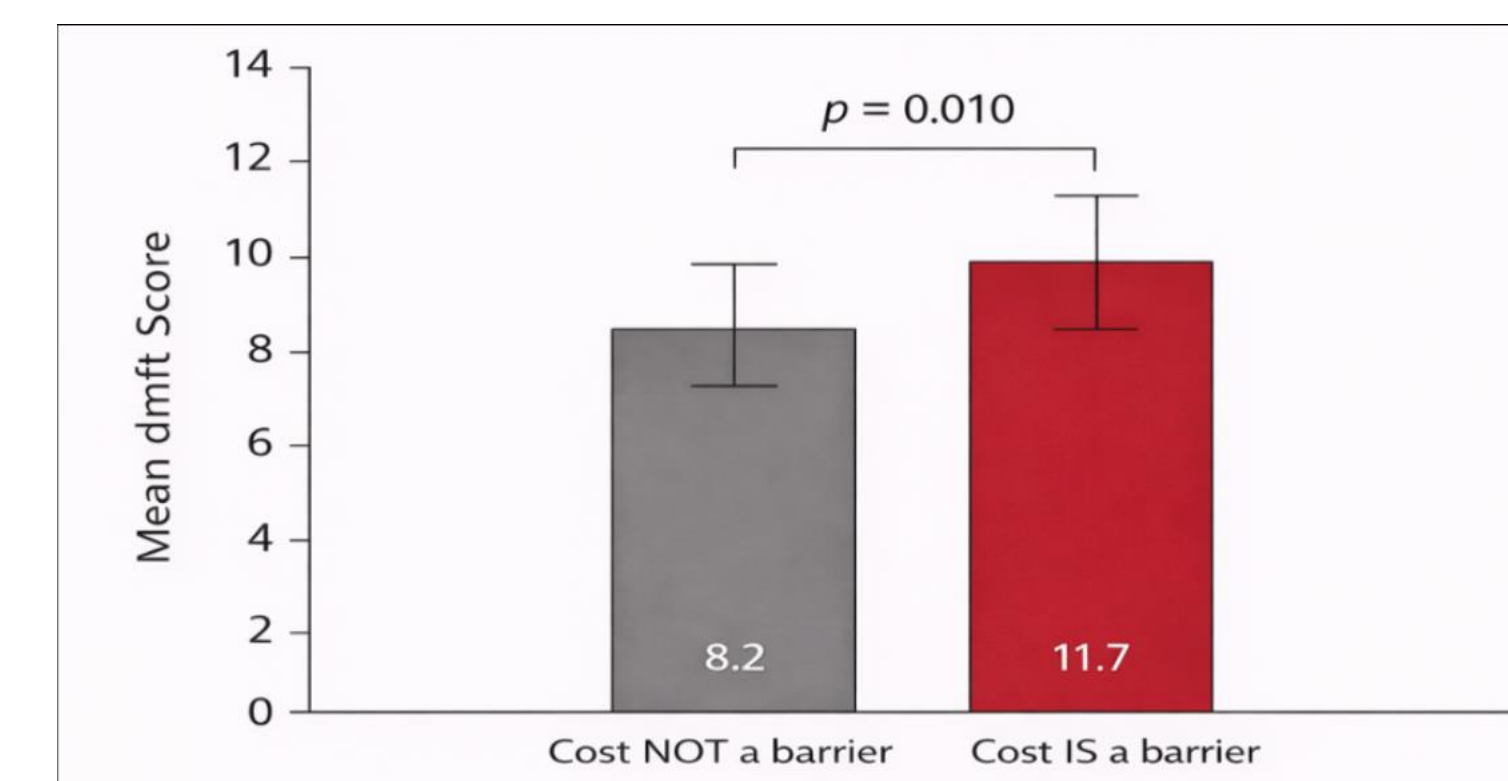


Figure 2. Financial Barriers to Dental Care Are Associated with Higher dmft Scores

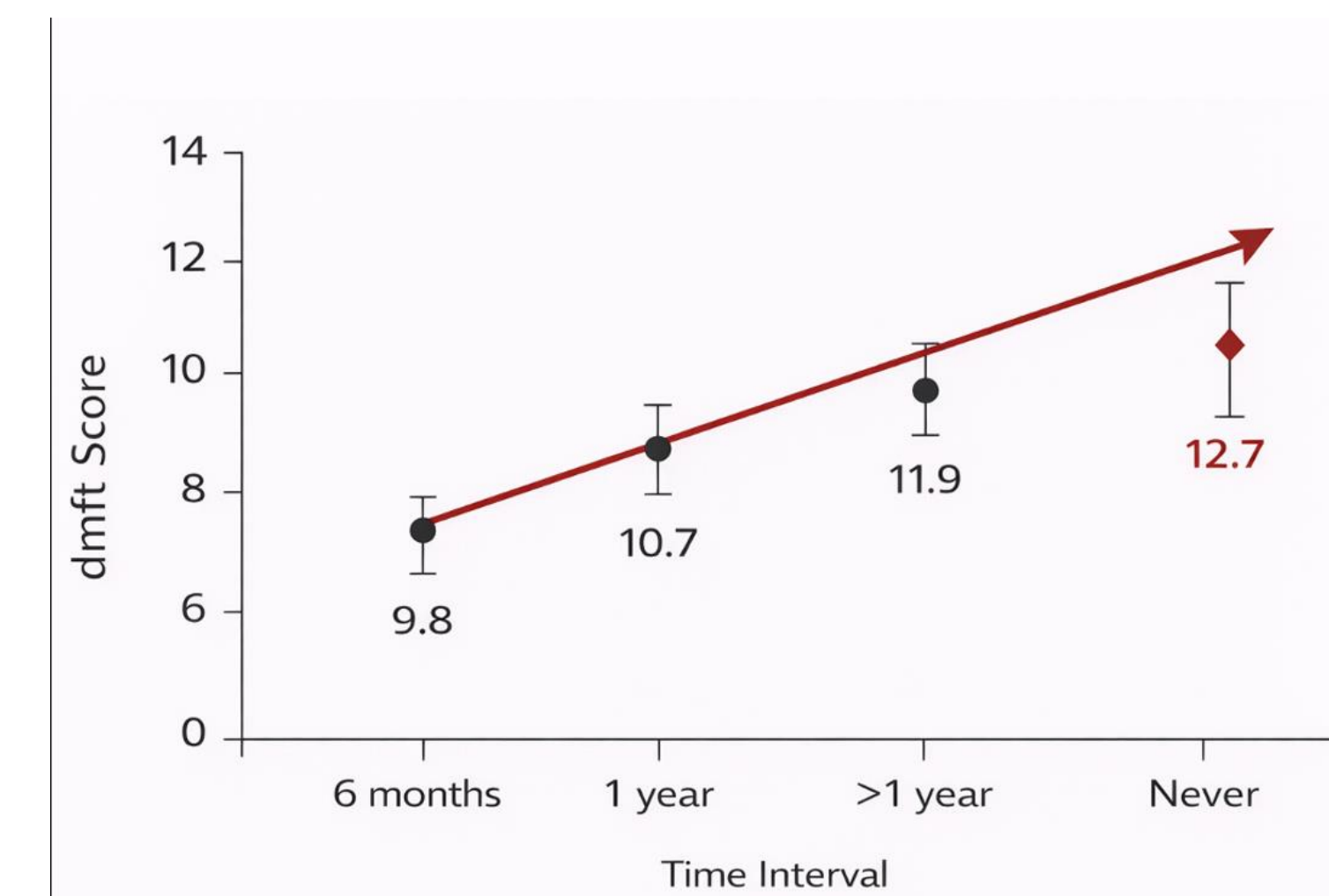


Figure 3. Time Since Last Dental Visit and Mean dmft Scores

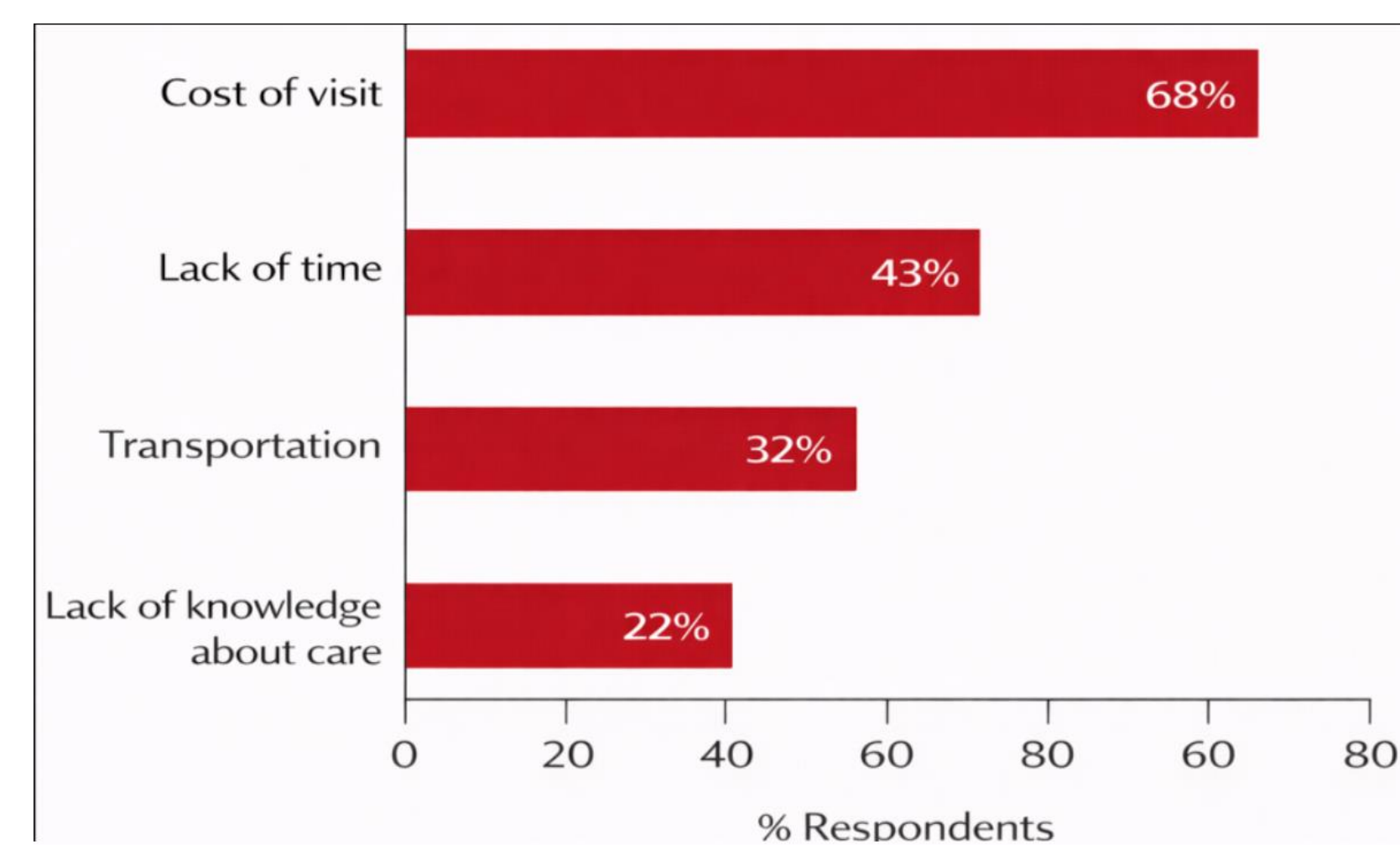


Figure 4. Reported Barriers to Child Dental Visits

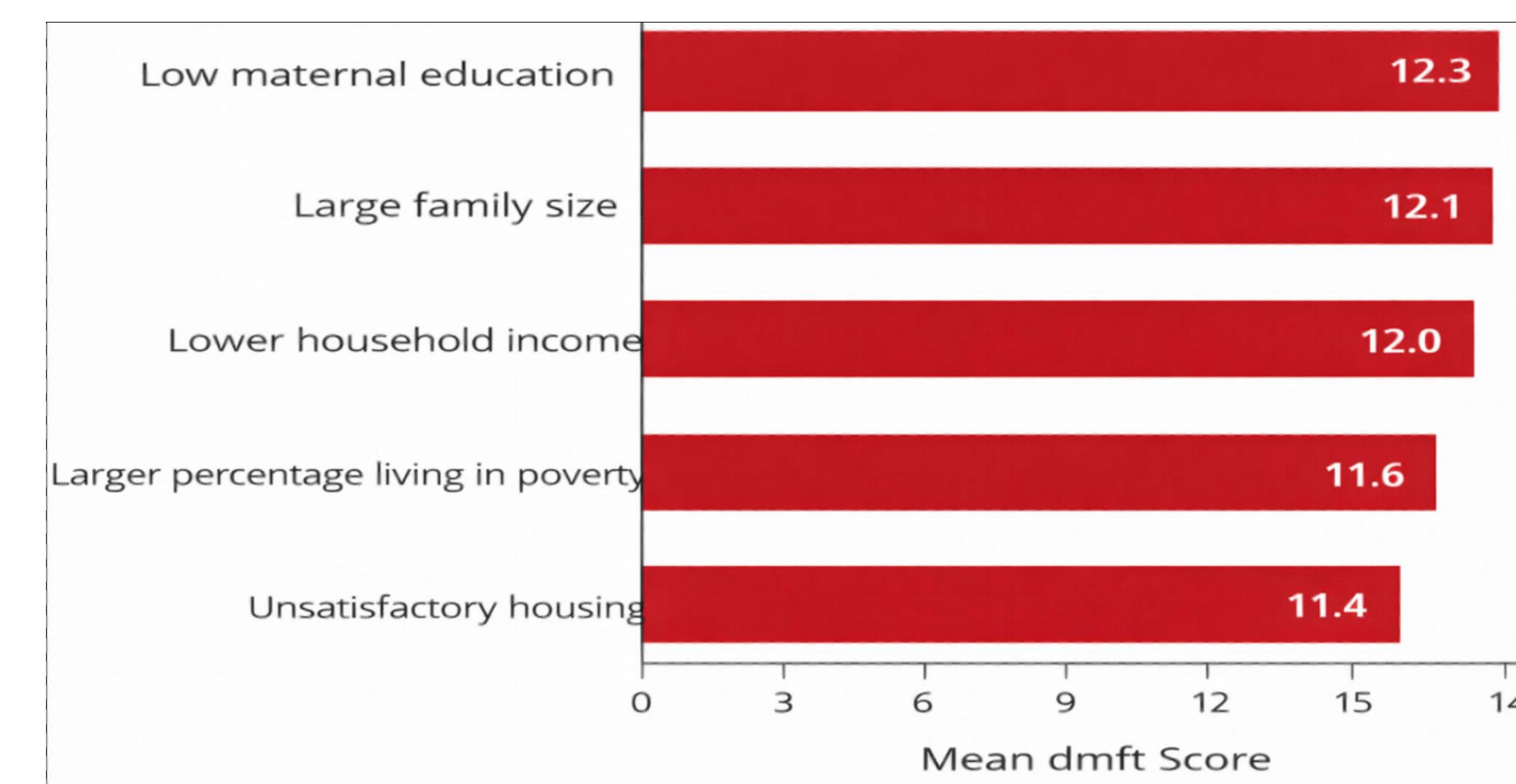


Figure 5. Most Impactful Social Determinants Associated with Higher dmft Scores

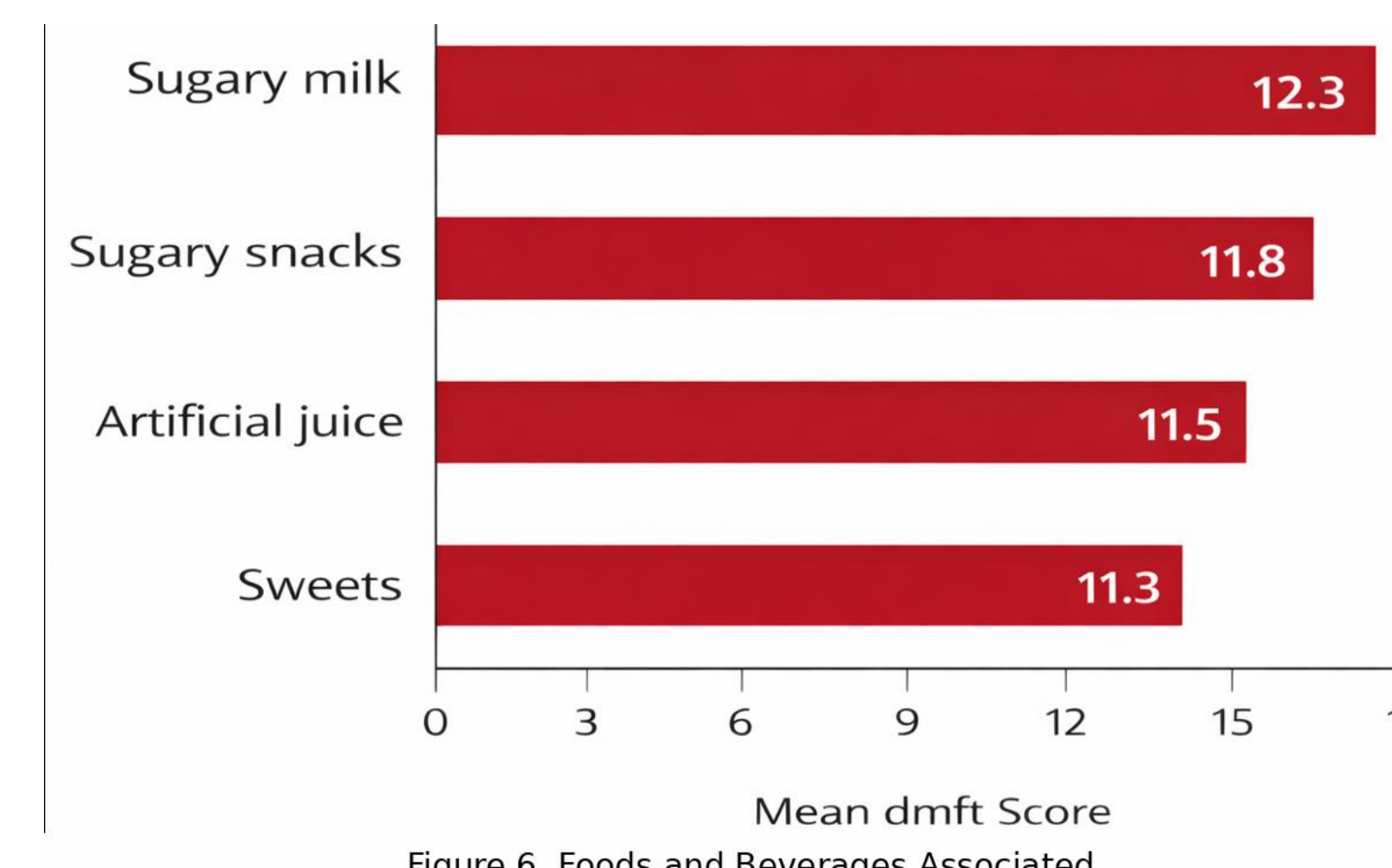


Figure 6. Foods and Beverages Associated with the Highest Mean dmft Scores

Clinical Implications

- Early Prevention**
 - High dmft burden identified early
 - Urgency of preventive strategies
 - Age-appropriate interventions
- Access-to-Care Interventions**
 - Financial and structural barriers increase caries burden
 - Integrate oral health education with community support
 - Make affordable, timely dental care available
- Role of Global Service Learning**
 - Programs assess community-specific oral health needs
 - Identify culturally appropriate interventions
 - Support sustainable partnerships

CONCLUSIONS

- Children in San Miguel Dueñas, Guatemala demonstrated a high burden of dental caries.
- Financial barriers to dental care were associated with substantially higher dmft scores.
- Many children had no prior dental visits, indicating delayed access to care.
- These findings highlight the importance of culturally appropriate, community-based preventive strategies to address social determinants of oral health.

