

# Improving Parental Health Literacy on Molar Hypomineralization



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## INTRODUCTION

Molar hypomineralization (MH) is a common developmental enamel defect that presents clinically with demarcated opacities, sensitivity, and increased risk of post eruptive breakdown. Molar hypomineralization encompasses two known conditions: molar-incisor hypomineralization (which specifies MH in first permanent molars with or without incisors) and hypomineralized second primary molars (which specifies MH in second primary molars). Parental awareness of MH remains limited, often delaying early recognition and intervention. Parental understanding plays a critical role in timely care, prevention, and treatment of MH. Informational pamphlets and books may serve as practical educational resources in the clinical setting, however the effectiveness of educational books in improving parental knowledge of MH has not been widely evaluated. The presence of MH across both dentitions suggests a continuum of developmental disturbance and highlights the importance of early recognition.

## PURPOSE

The purpose of this study was to assess changes in parents' understanding of MH before and after reading an educational book titled, [It's Just One of Those Things SAM](#).

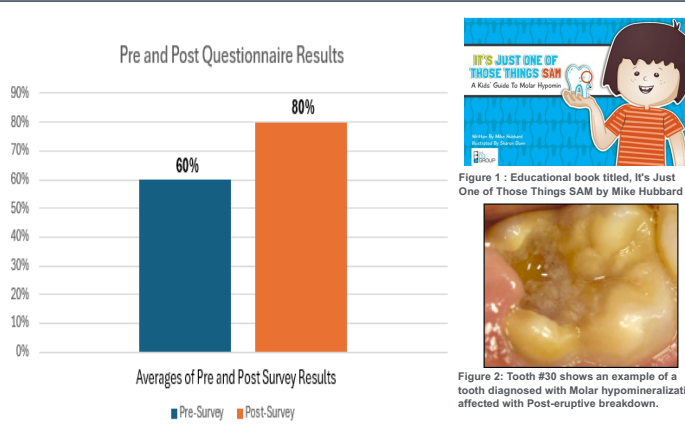
## METHOD

A pre-post study was conducted among parents/caregivers of pediatric dental patients, ages 0-17, receiving care at Chesapeake Health Care Dental Clinic on the Eastern Shore of Maryland. First, parents/caregivers completed a pre-intervention survey consisting of ten questions to assess participants' baseline knowledge of molar hypomineralization. Additionally, demographic data was obtained including patient's age, parental age, parental race and ethnicity and level of highest education. Following this, the participants were provided with a concise, evidence-based informational book describing the etiology, clinical presentation, and management considerations of MH. After reviewing the book, participants completed a post-intervention questionnaire consisting of the same knowledge-based questions. Demographic data including patient age were collected. Pre- and post- survey scores were recorded as percentages and compared to evaluate changes in parental knowledge following the educational intervention.

## RESULTS

A total of 63 participants were included in the analysis. On average participants got six out of ten questions correct on the pre-survey questionnaire, scoring 60%. The highest pre-survey score was 100% and the lowest was 10%. The average post-survey score was 80%, with the highest score being 100% and the lowest being 40%. For every 1- unit increase in pre-survey score, the post-survey scores increased by 31.3%, holding patient age constant. Participants with higher baseline knowledge tended to have higher post-intervention scores. Each additional year of patient age was associated with only a 0.32% increase in post-survey score. The effect was not statistically significant, which implies that Age does not meaningfully influence post-intervention scores after adjusting for baseline. Overall, there was a clear positive shift in knowledge, with majority of participants demonstrating improved understanding after the intervention. The greatest improvement was observed in questions assessing recognition and etiology of MH.

## FIGURE (FOR PLACEMENT ONLY)



## DISCUSSION

The findings of this study show that a targeted educational resource can significantly improve parental knowledge of molar hypomineralization (MH). This pre-survey scores demonstrate variable and generally limited parental knowledge, with many participants scoring in the lower to moderate range. Following exposure to the educational book, post-survey scores showed a consistent and notable improvement across participants, with many achieving higher percentage scores. From a clinical perspective, these results reinforce the value of incorporating simple, accessible educational materials into pediatric dental settings. However, several limitations should be considered. The questionnaire was administered only in English, which may have excluded or limited comprehension among non-English speaking parents/caregivers, particularly Spanish- and Haitian Creole-speaking populations. Additionally, the clinical environment may have introduced distractions. Parents/caregivers of children with behavioral challenges may have found it difficult to focus on the educational material and complete the questionnaire, which could have impacted the accuracy of responses. Future research should focus on expanding educational resources into multiple languages, incorporating visual or digital formats, and evaluating long-term knowledge retention. Further studies could also explore whether improved parental understanding translates into measurable clinical outcomes, such as earlier diagnosis or reduced severity of MH-related complications.

## CONCLUSIONS

Parental knowledge of molar hypomineralization is limited at baseline but can be significantly improved through brief, targeted educational interventions. The use of the book, [It's Just One of Those Things SAM](#) resulted in measurable improvements in understanding, supporting its value as a practical and efficient educational tool in pediatric dental settings. Improving caregiver awareness of molar hypomineralization may facilitate earlier recognition, enhance preventive care, and contribute to better clinical outcomes for affected children.

## REFERENCES

Goel, Nancy et al. "Molar Incisor Hypomineralization: Clinical Characteristics with Special Emphasis on Etiological Criteria." *Journal of pharmacy & bioallied sciences* vol. 13, Suppl 1 (2021): S651-S655. doi:10.4103/jpbs.JPBS\_801\_20 Weerheijm, Karin. (2004). Molar Incisor Hypomineralization (MIH): Clinical Presentation, Aetiology and Management. Dental Update. 31, 9-12. 10.12968/denu.2004.31.1.9. "D3 Merchandise." *The3group.org*, 2020, www.the3group.org/d3g-merchandise.html. Accessed 13 Apr. 2026.