

Using Social Media to Better Understand Parents' Experiences Managing Teething Pain

Kathryn O'Donnell¹, DDS; Christine T. Chambers^{2,3,4}, RPsych, PhD; Jennifer A. Parker⁴, PhD; Justine Dol⁴, PhD; and Mary McNally¹, DDS, MA

¹ Faculty of Dentistry, Dalhousie University

² Faculty of Science, Dalhousie University

³ Faculty of Medicine, Dalhousie University

⁴ Centre for Pediatric Pain Research, IWK Health Centre, Halifax, Nova Scotia, Canada

DOI: 10.15273/hpj.v3i2.11594

Abstract

Teething in infants is a natural process that is associated with a variety of signs and symptoms. Many teething pain management strategies exist, yet there is a lack of research investigating which strategies are used by parents and whether they are evidence based. Using an established social media initiative, this study sought to better understand parents' experiences managing teething pain and to determine which strategies are evidence based. **Methods:** Parents' experiences with managing teething pain were gathered through a Facebook post in partnership with researchers and a Canadian digital publisher, YummyMummyClub.ca. This Facebook post, part of a larger social media initiative called #ItDoesntHaveToHurt, asked the following question: "What do you do when you think your baby has teething pain?" Comments underwent descriptive thematic analysis to identify common management approaches. An evidence review of literature was undertaken to determine if the most frequently used pain management strategies reported by parents are supported by research. **Results:** The post received 163 comments. Analysis identified that the most frequently mentioned strategies were frozen/chilled objects, over-the-counter oral analgesics, frozen fruits/vegetables, oral anesthetic gels, and teething necklaces. The evidence review findings suggest a lack of research in the area of teething pain management. Professional dental associations recommend rubbing the gums with a clean finger or using chilled teething toys and over-the-counter analgesics as effective management strategies. Evidence indicates that oral anesthetic gels and teething necklaces are unsafe. **Conclusion:** Parents use a variety of teething pain management strategies for their infants, many of which are unsafe and not supported by evidence. What information is used by parents and how they select teething pain management strategies is an area that requires further research.

Keywords: primary tooth eruption, pain management, pediatric pain, qualitative, knowledge translation, Facebook

Teething is a natural physiological process that occurs in infants when the primary teeth move from their pre-eruptive positions in the alveolar bone to their post-eruptive

positions in the oral cavity (Memarpour et al., 2015). Teething usually begins around six months of age and continues until around 30–36 months of age when the final primary tooth erupts (Meer & Meer, 2011). The physiological process is often accompanied by undesirable local and systemic signs and symptoms including general irritability, increased salivation, crying, increased biting, runny nose, chin rash, and sleep disturbances (Holt, 2000; Meer & Meer, 2011; Ramos-Jorge et al., 2011; Wake et al., 2000). Symptoms vary from infant to infant, and there is often disagreement regarding which of these symptoms can be attributed to teething, as some of these features may be explained by other undiagnosed non-teething etiologies such as a flu virus or other minor infections (McIntyre & McIntyre, 2002; Wake et al., 2000). Although controversial, systemic symptoms such as fever and diarrhea are also often attributed to teething (Macknin et al., 2000; Memarpour et al., 2015). Mild temperature elevation has been found to be associated with teething and is likely to be mistaken or misreported as a fever (Macknin et al., 2000; Memarpour et al., 2015). This may contribute to parents' conceptions that teething causes a fever. Several studies have found no association between tooth eruption and systemic symptoms, such as temperature elevation, fever, and diarrhea (Memarpour et al., 2015; Wake et al., 2000).

In recent years, there has been a significant amount of research investigating the signs and symptoms associated with teething, yet there has been little research addressing the management of these signs and symptoms (McIntyre & McIntyre, 2002; Memarpour et al., 2015). Generally accepted pain management strategies recommended by health professionals include chilled teething rings; chewing on frozen food items (e.g., ice cubes, frozen bananas, sliced fruit, vegetables); cold or frozen pacifiers; rubbing gums with a clean finger, cool spoon, or wet gauze; and reassurance (McIntyre & McIntyre, 2002). However, it is unclear which of these strategies have been demonstrated to reduce teething pain. Pharmacological pain management

strategies directed toward achieving analgesia, anesthesia, or sedation are also used to control teething pain, including ibuprofen, acetaminophen, and teething gels containing local anesthetics, such as benzocaine and lidocaine (McIntyre & McIntyre, 2002). In recent years, teething products that contain local anesthesia have been contraindicated for various reasons (Markman, 2009). The U.S. Food and Drug Administration (FDA) has issued numerous statements (FDA, 2011, 2018) to warn parents of the risks of benzocaine oral products. According to the FDA, these products provide little to no benefit for treating teething pain, and they can cause methemoglobinemia, a blood disorder in which an abnormal amount of methemoglobin is produced. This condition leads to lack of oxygen delivery to cells and can be life-threatening. In 2014, the FDA issued a safety statement to warn parents about the risks of lidocaine in oral teething products, as it can result in seizures, severe brain injury, or heart problems if ingested by infants and children (FDA, 2014). Additionally, the use of amber teething necklaces has become more widespread, despite warnings from Health Canada about the risk of strangulation and foreign body aspiration. There have been recent published reports of death and non-fatal infant strangulation cases, secondary to amber teething necklaces (Abdulsatar et al., 2018; Cox et al., 2017).

Currently, there is little research investigating what strategies have been adopted for use by parents during the teething process and whether these strategies are supported by research as effective measures of pain management without contraindications or risk to the child's health and well-being. Parents are using unsafe teething remedies including amber teething necklaces, despite a lack of evidence regarding efficacy and warnings against their use (Abdulsatar et al., 2018). There is a need for further investigation into what teething pain management strategies caregivers choose and why. A key step is to gather information from parents regarding their experiences and the strategies they employ to manage teething pain.

In recent years, social media has become an increasingly popular platform to investigate and explore children's health (Tougas et al., 2018), and parents are increasingly using social media communities to help inform their decisions about health (Frey et al., 2022). Social media studies that have explored these areas have focused more on content and engagement of shared information than on whether the information being shared is backed by evidence (Tougas et al., 2018).

The aim of this study was to use parent-reported experiences shared on a popular online social media platform that were collected as part of an established social media initiative, #ItDoesntHaveToHurt, to gain a better understanding of parents' experiences managing teething pain and to determine whether parents' practices align with the research evidence and clinical practice guidelines.

Methods

Our research focused on two key questions: (a) What teething pain management strategies are being used by parents? And (b) what evidence exists to support these strategies? Two approaches were used to address the research questions: (a) A qualitative analysis of social media comments left by parents on a public Facebook post that was posted by a popular online parenting magazine regarding teething pain management as part of the #ItDoesntHaveToHurt initiative, and (b) a Level 1 evidence review of pain management strategies for teething pain.

Social Media Qualitative Analysis

A Facebook post about teething pain management was posted to the Yummy Mummy Club (YMC) Facebook page on May 2, 2016 (YMC, 2016). The Facebook post was part of a Canadian Institutes of Health Research-funded social media initiative and science-media partnership called It Doesn't Have to Hurt (It Doesn't Have to Hurt, n.d.). This initiative was created in partnership with YMC, a leading

Canadian online magazine for parents that reaches millions of readers worldwide every month (Canadian Institutes of Health Research, 2021). It Doesn't Have to Hurt spanned 12 months (September 2015–September 2016) of targeted dissemination and discussion of content about children's pain via blog posts, YouTube videos, Facebook posts, Twitter parties, and Instagram images, posted and promoted on the YMC website and social media channels. Several Facebook posts were made through the YMC Facebook page that asked parents to comment on different topics regarding child pain. This study focused on one specific post that asked parents to comment on teething pain management strategies.

The Facebook post asked, "What do you do when you think your baby has teething pain?" Parents were asked to answer the question in the comment section attached to the post. Each person who commented was entered into a draw to win a \$75 CAD Visa gift card as an incentive. A descriptive thematic analysis method was undertaken to systematically describe and summarize comments from parents to the YMC Facebook post regarding their experiences managing teething pain. This analytic approach involved six phases: (a) familiarization with the data, (b) generation of initial codes, (c) search for themes, (d) review of themes, (e) definition and naming of themes, and (f) summarization of findings (Braun & Clarke, 2006).

The Facebook comments (n=163) were transferred to a Microsoft Excel spreadsheet. The comments were reviewed (Author 1) and code words were generated, each representing a specific teething pain management strategy reported in the comments section of the Facebook post. Researchers did not have any relationship to the participants, and the comments were de-identified prior to conducting the descriptive thematic analysis. Comments were iteratively reviewed and coded until saturation was reached. Once an extensive list of code words had been generated and saturation occurred, the codes were reviewed and interpreted to identify common themes.

Level 1 Evidence Review

Based on the findings of the qualitative analysis, the most frequently mentioned teething pain management strategy themes were subsequently investigated in a literature search to identify whether they are supported by scientific evidence. This evidence search was limited to Level 1 evidence, which included systematic reviews as well as evidence-informed clinical practice guidelines based on systematic reviews (Melnyk & Fineout-Overholt, 2005). These types of studies integrate findings of multiple studies and provide a clear and comprehensive overview of available evidence that often informs evidence-based clinical practice for health and social service providers. The evidence search (Author 1) was conducted using PubMed and the Cochrane Database of Systematic Reviews. Key individual search terms included “teething rings,” “teething objects,” “teething toys,” “primary tooth eruption,” “teething necklace,” and “teething gel.” The Boolean operator “AND” was used to combine the terms “teething” with “fruit,” “teething” with “vegetables,” and “teething” with “pain.” On PubMed, filters were applied to limit the search to “systematic reviews” and “books and documents.” All other types of studies were excluded from the search. The Cochrane Database of Systematic Reviews did not require any filters for article type, as the library itself is limited to systematic reviews. The original search was conducted in January 2020 and updated again on September 5, 2022. Clinical practice guidelines and recommendations from professional associations were investigated through the Canadian Dental Association (CDA), American Dental Association (ADA), and American Academy of Pediatric Dentistry (AAPD) websites.

Results

Social Media Qualitative Analysis

The Facebook post received 163 comments, 108 likes, and 47 shares. Based on Facebook analytics, it is estimated that the post

reached 4,229 unique Facebook users. There were over 20 different teething pain management strategies identified in the comment section of the Facebook post. The most common identified teething pain management strategy themes were the following: frozen/chilled objects, over-the-counter oral analgesics, frozen/chilled fruits and vegetables, oral anesthetic gels, and teething necklaces. Table 1 summarizes generated themes with their corresponding codes and example quotes from the Facebook post comment section.

Level 1 Evidence Review

The literature search revealed no clinical practice guidelines or systematic reviews to support any teething pain management strategies. However, several recommendations related to teething pain management strategies were identified through professional dental associations. Recommendations from the CDA include rubbing the gums with a clean finger, rubbing the gums with the back of a small, cool spoon, and using over-the-counter analgesics (CDA, n.d.). The CDA advises against oral anesthetic numbing gels and teething biscuits, and advises parents to not ignore a fever, as it is likely being caused by something other than teething. The ADA recommends rubbing the gums with a clean finger, moist gauze, or a small, cool spoon, as well as having the child chew on a clean teether made of solid rubber and not liquid-filled (MouthHealthy, n.d.). The AAPD advice regarding teething pain includes use of plastic and rubber chew toys, use of cold objects such as teething rings, massaging the gums, and use of over-the-counter oral analgesics (AAPD, 2021). The CDA, ADA, and AAPD all advise against teething necklaces and benzocaine-containing numbing gels. The FDA also warns parents of the risks of benzocaine-containing oral products and the risks of strangulation or choking associated with teething necklaces (FDA, 2018).

As described, qualitative findings indicate that parents are using a variety of teething pain management strategies, some of which are not evidence based and not supported

by professional dental associations. Table 2 outlines where parent-used strategies align with CDA, ADA, and AAPD recommendations.

Table 1

Generated Themes on Parents' Strategies for Teething Pain Management, Drawn From Facebook Post Comments

Themes	Codes	Example quotes
Frozen/chilled fruits and vegetables	Frozen/chilled fruits	<i>"I put chopped bananas and strawberries in the freezer my son loves to chew on it and the cold eased his pain."</i>
	Frozen/chilled vegetables	<i>"Nuby Nibblers stuffed with frozen treats like cucumbers..."</i>
Over-the-counter analgesics	Tylenol	<i>"... Tylenol worked best for my little guy!"</i>
	Advil	<i>"Advil, silicone teething necklace, cold carrot. But mostly advil."</i>
Oral anesthetic gels	Orajel	<i>"I get out the baby Orajel and massage their little gums!"</i>
	Anbesol	<i>"I found anbesol worked good for my kids..."</i>
Teething necklaces	Amber teething necklace	<i>"... I tried an amber necklace and found that for him it worked wonders..."</i>
	Silicone teething necklace	<i>"I used frozen washcloths and those silicone teething rings. Frozen fruit in a mesh feeder for a treat, too!"</i>
Frozen/chilled objects	Frozen/chilled teething ring	<i>"With my first I used frozen teething rings, that was 7 years ago though, everything's changed. It was so effective though that I will try the same with our new little guy..."</i>
	Frozen/wet washcloth	<i>"I gave my son a cold facecloth to chew on #ItDoesntHaveToHurt"</i>

Table 2

Frequently Used Teething Pain Management Strategies Recommended (✓), Contraindicated (X), and Neither Recommended nor Contraindicated (-) by Professional Dental Associations

Pain management strategy	CDA	ADA	AAPD
Frozen/chilled objects	✓	✓	✓
Over-the-counter analgesics	✓	-	✓
Frozen/chilled fruits and vegetables	-	-	-
Oral anesthetic gels	X	X	X
Teething necklaces	X	X	-

Note. CDA = Canadian Dental Association, ADA = American Dental Association, and AAPD = American Academy of Pediatric Dentistry.

Discussion

Overall, this study found that parents are using a wide range of teething pain management strategies and that teething pain management is an area that requires further research.

Some of the strategies that parents reported using, such as oral benzocaine numbing gels and teething necklaces, are now contraindicated. It must be recognized that data from the Facebook post was collected in 2016, and in 2018 the FDA issued its second statement regarding the risks of benzocaine-containing oral products and a statement to warn parents of the risks of teething necklaces. In 2018, Health Canada stopped authorizing benzocaine products for use in children under the age of two. New labelling requirements were introduced, and in August 2020, Health Canada issued a stop-sale for benzocaine products that had not updated their labelling (Government of Canada, 2020). There is still a concern that health care professionals are recommending these products, despite the FDA warnings and Health Canada actions (Government of Canada, 2020). Future research should explore the frequency of parents' use of benzocaine-containing oral products and teething necklaces to manage teething pain since these changes in recommendations, after the FDA statement was issued and Health Canada updated labelling

requirements. Other teething pain management strategies used by parents such as frozen/chilled objects and over-the-counter analgesics are recommended by the CDA, ADA, and AAPD as a method to reduce infants' teething pain.

A key area for future research should involve investigating where parents and health care providers are finding their sources of teething pain management recommendations. There are several sources of information available, both on the internet and through health care professionals. A study that compared teething information on the internet with advice from pediatricians concluded that websites should not replace advice from health care professionals, but that high-quality websites can be used as a tool to help enrich educational and counselling efforts (Haznedaroglu & Mentis, 2016). However, evidence also suggests that parents often seek out health information on the Internet, particularly for infants and young children, suggesting that online strategies such as science-media partnerships or open access research may be a way to reach parents with evidence-based information where they are already seeking it.

The findings from this study show a general lack of research in the area of teething pain management. Further primary research and systematic reviews of existing primary

literature regarding teething pain management strategies are required in order to reach conclusions on which strategies are safe and effective for managing teething pain. Social media campaigns may be an effective way to translate evidence-based information regarding teething pain management to parents and to help raise awareness regarding safety issues that exist with certain teething pain management strategies.

Limitations of the study include a population sample that was limited to social media users who engaged with the YMC Facebook post. The study did not capture responses from groups such as caregivers who do not have access to social media, or caregivers who choose to look elsewhere for health information. Given that the post was in partnership with the YMC, which is a magazine for moms, it is likely that the data represented strategies used mainly by mothers and may not capture strategies that are used by other types of caregivers. Information on demographics such as age, race, ethnicity, gender, sexuality, and employment status of YMC followers was not accessible. Another limitation of the study is that the Facebook post was created and published in 2016, prior to the FDA statements made in 2018 regarding risks of strangulation associated with amber teething necklaces and the risks of benzocaine-containing numbing gels. It wasn't until August 2020 that Health Canada issued a stop-sale for benzocaine products that had not updated their labelling to align with current labelling requirements. Although further research is required, it is likely that these updates would influence parents' decisions to limit the use of amber teething necklaces and benzocaine-containing numbing gels for pain management. Despite these limitations, the input offered by these engaged parents serves to raise awareness about what strategies they are using, the lack of evidence-based information that is available to parents regarding teething pain management, and the importance of using platforms such as social media to disseminate evidence-based knowledge.

Conclusion

Parents report using a variety of teething pain management strategies, some of which are supported by recommendations from professional dental organizations and some of which are contraindicated. Overall, there is a lack of research evidence about which—if any—of the strategies parents reported are effective in managing infant teething pain, and further investigation is required in order to draw conclusions about the safety and efficacy of different strategies. This research methodology using a social media platform also provides an innovative and promising approach to conducting patient-oriented research.

Acknowledgements

The authors would like to acknowledge the following individuals as important contributors to this research: the research team and the parent partner panel who developed the 2016 YMC Facebook post, as well as the Facebook post participants.

Funders: The #ItDoesntHaveToHurt initiative and research was supported by a Knowledge to Action Grant from the Canadian Institutes of Health Research (#336666). C.T. Chambers holds a Tier 1 Canada Research Chair, and her lab is supported by grants from the Canada Foundation for Innovation. C.T. Chambers's research is supported by the Canadian Institutes of Health Research.

Conflict of Interest

The authors declare no known conflicts of interest.

References

- Abdulsatar, F., Taheri, S., & Miller, M. (2018). Use of unsafe teething remedies in a mid-size city: A survey. *Pediatrics & Child Health*, 23(Suppl 1), e54. <https://doi.org/10.1093/pch/pxy054.135>

- American Academy of Pediatric Dentistry. (2021). Perinatal and infant oral health care. *The reference manual of pediatric dentistry* (pp. 277–281). https://www.aapd.org/media/policies_guidelines/bp_perinataloralhealthcare.pdf
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Canadian Dental Association. (n.d.). *Dental development*. Retrieved August 8, 2022, from http://www.cda-adc.ca/en/oral_health/cfyt/dental_care_children/development.asp
- Canadian Institutes of Health Research. (2021, December 6). *It doesn't have to hurt*. Government of Canada. Retrieved August 8, 2022, from <https://cihr-irsc.gc.ca/e/49821.html>
- Cox, C., Petrie, N., & Hurley, K. F. (2017). Infant strangulation from an amber teething necklace. *Canadian Journal of Emergency Medicine, 19*(5), 400–403. <https://doi.org/10.1017/cem.2016.342>
- Frey, E., Bonfiglioli, C., Brunner, M., & Frawley, J. (2022). Parents' use of social media as a health information source for their children: A scoping review. *Academic Pediatrics, 22*(4), 526–539. <https://doi.org/10.1016/j.acap.2021.12.006>
- Government of Canada. (2020, October 15). *Public advisory: Benzocaine products should not be used in children under two years of age*. Retrieved August 8, 2022, from <https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2020/74129a-eng.php>
- Haznedaroglu, E., & Menten, A. (2016). The Internet versus pediatricians as a source of infant teething information for parents in Turkey. *Clinics, 71*(8), 430–434. [https://doi.org/10.6061/clinics/2016\(08\)04](https://doi.org/10.6061/clinics/2016(08)04)
- Holt, R. D. (2000). Symptoms associated with teething. *Evidence-Based Dentistry, 2*(3), Article 68. <https://doi.org/10.1038/sj.ebd.6400047>
- It Doesn't Have to Hurt. (n.d.). *#ItDoesntHaveToHurt*. Retrieved August 8, 2022, from <https://itdoesnthavetohurt.ca/campaigns/itdoesnthavetohurt/>
- Macknin, M. L., Piedmonte, M., Jacobs, J., & Skibinski, C. (2000). Symptoms associated with infant teething: A prospective study. *Pediatrics, 105*(4), 747–752. <https://doi.org/10.1542/peds.105.4.747>
- Markman, L. (2009). Teething: Facts and fiction. *Pediatrics in Review, 30*(8), e59–e64. <https://doi.org/10.1542/pir.30-8-e59>
- McIntyre, G. T., & McIntyre, G. M. (2002). Teething troubles? *British Dental Journal, 192*(5), 251–255. <https://doi.org/10.1038/sj.bdj.4801349>
- Meer, Z., & Meer, A. (2011). Teething trouble and its management in children. *International Journal of Dental Clinics, 3*(2), 75–77.
- Melnyk, B. M., & Fineout-Overholt, E. (2005). *Evidence-based practice in nursing and healthcare: A guide to best practice*. Lippincott Williams & Wilkins.
- Memarpour, M., Soltanimehr, E., & Eskandarian, T. (2015). Signs and symptoms associated with primary tooth eruption: A clinical trial of nonpharmacological remedies. *BMC Oral Health, 15*, Article 88. <https://doi.org/10.1186/s12903-015-0070-2>
- MouthHealthy. (n.d.). *Teething*. American Dental Association. Retrieved September 1, 2022, from <https://www.mouthhealthy.org/en/az-topics/t/teething>
- Ramos-Jorge, J., Pordeus, I. A., Ramos-Jorge, M., & Paiva, S. M. (2011). Prospective longitudinal study of signs and symptoms associated with primary tooth eruption. *Pediatrics, 128*(3), 471–476. <https://doi.org/10.1542/peds.2010-2697>
- Tougas, M. E., Chambers, C. T., Corkum, P., Robillard, J. M., Gruz, A., Howard, V., Kampen, A., Boerner, K. E., & Hundert, A. S. (2018). Social media content about

- children's pain and sleep: Content and network analysis. *JMIR Pediatrics and Parenting*, 1(2), Article e11193. <https://doi.org/10.2196/11193>
- U.S. Food and Drug Administration. (2011, April 7). *FDA drug safety communication: Reports of a rare, but serious and potentially fatal adverse effect with the use of over-the-counter (OTC) benzocaine gels and liquids applied to the gums or mouth.* <https://www.fda.gov/drugs/drug-safety-and-availability/fda-drug-safety-communication-reports-rare-serious-and-potentially-fatal-adverse-effect-use-over>
- U.S. Food and Drug Administration. (2014, June 26). *FDA drug safety communication: FDA recommends not using lidocaine to treat teething pain and requires new Boxed Warning.* <https://www.fda.gov/drugs/drug-safety-and-availability/fda-drug-safety-communication-fda-recommends-not-using-lidocaine-treat-teething-pain-and-requires>
- U.S. Food and Drug Administration. (2018, May 23). *Risk of serious and potentially fatal blood disorder prompts FDA action on oral over-the-counter benzocaine products used for teething and mouth pain and prescription local anesthetics.* <https://www.fda.gov/drugs/drug-safety-and-availability/risk-serious-and-potentially-fatal-blood-disorder-prompts-fda-action-oral-over-counter-benzocaine>
- Wake, M., Hesketh, K., & Lucas, J. (2000). Teething and tooth eruption in infants: A cohort study. *Pediatrics*, 106(6), 1374–1379. <https://doi.org/10.1542/peds.106.6.1374>
- Yummy Mummy Club [YMC]. (2016, May 2). *We're giving away another \$75 Visa gift card! What's one rite of passage every single baby goes through? Teething pain.* Facebook. <https://www.facebook.com/YMCBuzz/photos/a.283477661054/10154289020806055/?type=3>