A Content Analysis of Canadian Professional Association Resources on Diet and Tooth Decay

M. Fotheringham[1], L. Forbes[2], P. Papagerakis[3], J. Lieffers[1]

[1]College of Pharmacy & Nutrition, University of Saskatchewan, Saskatoon, SK, [2]Department of Family Relations & Applied Nutrition, University of Guelph, Guelph, ON, [3]College of Dentistry, University of Saskatchewan, Saskatoon, SK

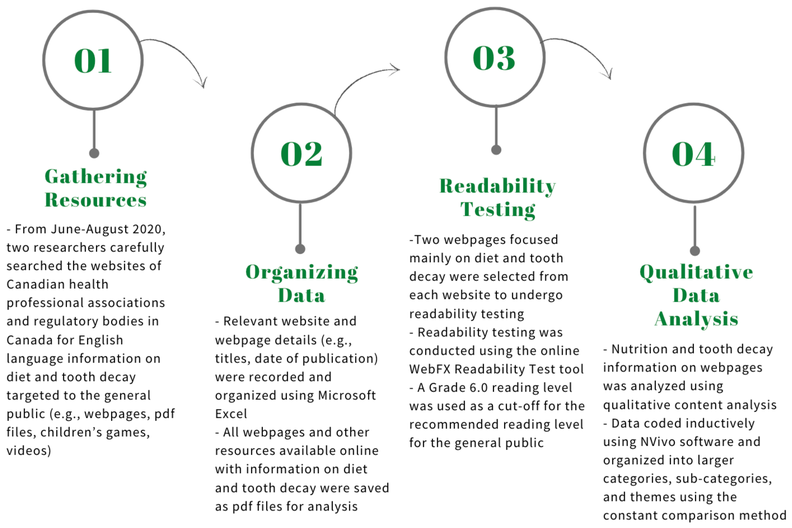
INTRODUCTION

- Tooth decay is the most common chronic disease worldwide and affects individuals of all ages[1]
- Tooth decay happens when bacteria metabolize dietary fermentable carbohydrates (e.g., sucrose) which produces acid and damages tooth structures[2]
- Tooth decay is prevalent in Canada: 57% of children 6-11y, 59% of children 12-19y, and 96% of adults have had cavities[3]
- Tooth decay treatment is most common indication for day surgery among preschool aged children in Canada. If left untreated, tooth decay can interfere with growth, sleeping, eating, speech development, and can cause poor self-esteem[4]
- Several different approaches are used to prevent tooth decay (e.g., optimizing dietary intake[2])
- Both chemical and physical properties of foods and beverages, as well as how they are consumed (e.g., frequency), can impact tooth decay risk[5]
    - Diets high in fermentable carbohydrates are associated with increased risk
    - Diets rich in vegetables and fruit are associated with decreased risk
- The Internet is a common strategy for the public to access health information[6]
- To our knowledge, no analyses have been conducted on the types of written information available online to the general public on diet and tooth decay from health professional organizations in Canada

PURPOSE

To assess the information available from websites of professional organizations in Canada that are targeted to the public on diet and tooth decay.

METHODS



RESULTS

- In total, 23 websites were found to contain information on diet and tooth decay
    - 213 webpages collected, inc. 188 written resources, 11 videos, and 14 children's activities from the 23 websites
    - Majority sourced from provincial dentist and dental hygienist associations; very few from RDs (only UnlockFood.ca)
- Information scattered everywhere - only 38 (18%) of collected webpages focused directly on diet and tooth decay
    - Remaining webpages focused on a broad range of other topics (e.g., dental hygienist factsheets, FAQ pages, dental insurance pamphlets, cannabis handouts)
- Readability was assessed in n=37 webpages and was often higher than recommended
    - Few webpages met the grade 6.0 reading level cut-off (range: 3-27% depending on readability score used)
    - Mean grade level score was 8.6 ± 1.7 (σ)
- Three major themes identified in the Qualitative Content Analysis:

- Sugar was a central topic as it was embedded within each theme
    - 19 websites (83%) and 142 webpages (67%) mentioned 'sugar' and/or 'sweet' in any context
    - Overall message: sugar is linked to tooth decay; therefore, intake should be limited
- No interprofessional referrals to RDs

CONCLUSIONS

- Overall, an abundance of diet and tooth decay information available to the public in these websites
- Dominant message was limit sugar and eat a tooth-friendly diet; limited mixed messaging was present
- Information found in many different forms under a wide variety of webpage topics
    - Scatteredness, high frequency, and recurrence of information demonstrates a strong and important link between diet and tooth decay
    - However, general statements (e.g., 'eat a healthy diet') may not be as useful to the general public
- Readability of webpages was often higher than recommended grade 6 level which has been identified elsewhere[7,8]
    - Some information may be difficult for the general public to understand; may exacerbate health disparities
- Few resources mentioned where to get more help with this topic; dietitians were not listed
- Increased collaboration between oral professionals, dietitians and other professionals will help to ensure that the public is provided with the best information on diet and tooth decay
    - Increased collaboration between dietitians and oral health professionals has been recommended[5,9]
    - Oral health is an exciting and emerging area of dietetic practice

REFERENCES

1. Canadian Dental Association. The State of Oral Health in Canada. Available from: https://www.cda-adc.ca/stateoforalhealth/_files/TheStateofOralHealthinCanada.pdf
2. Gondivkar SM, Gadbail AR, Gondivkar RS, Sarode SC, Sarode GS, Patil S, Awan KH. Nutrition and oral health. Disease-a-Month. 2019 Jun 1;65(6):147-54.
3. Statistics Canada. Canadian Health Measures Survey. Available from: https://www.canada.ca/en/health-canada/services/healthy-living/reports-publications/oral-health/canadian-health-measures-survey.html
4. Canadian Institute for Health Information. Treatment of Preventable Dental Cavities in Preschoolers: A Focus on Day Surgery Under General Anesthesia. Available from: https://secure.cihi.ca/free_products/Dental_Caries_Report_en_web.pdf
5. Touger-Decker R, Mobley C. Position of the Academy of Nutrition and Dietetics: oral health and nutrition. Journal of the Academy of Nutrition and Dietetics. 2013 May 1;113(5):693-701.
6. Statistics Canada: Canadian Internet Use Survey 2020 [Internet]. Government of Canada, Statistics Canada. 2022. Available from: https://www150.statcan.gc.ca/n1/daily-quotidien/210622/dq210622b-eng.htm
7. Daraz L, Morrow AS, Ponce OJ, Farah W, Katabi A, Majzoub A, Seisa MO, Benkhadra R, Alsawas M, Larry P, Murad MH. Readability of online health information: a meta-narrative systematic review. American Journal of Medical Quality. 2018 Sep;33(5):487-92.
8. Skierkowski DD, Florin P, Harlow LL, Machan J, Ye Y. A readability analysis of online mental health resources. American Psychologist. 2019 May;74(4):474.
9. Dietitians Australia, Dental Health Services Victoria. Joint Position Statement on Interdisciplinary Collaboration between Accredited Practising Dietitians, Nutrition and Oral Health Professionals for Oral Health and Nutrition. Available from: https://dietitiansaustralia.org.au/sites/default/files/2022-03/FINAL%20VERSION%20JPS%20OH_Nutrition%20Collab_16032022.pdf

ACKNOWLEDGEMENTS

- Saskatchewan Health Research Foundation Establishment Grant Program for financial support
- Student Undergraduate Research Experience program at the University of Saskatchewan