The oral health experience of First Nations children requiring treatment under general anesthesia for early childhood caries: A qualitative approach to decolonizing research in dentistry.

By

Sheri McKinstry

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Department of Preventive Dental Science

Dr. Gerald Niznick College of Dentistry

Division of Pediatric Dentistry

University of Manitoba

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Abstract

Background

Due to legacies of colonization and inequities in social determinants of health, First Nations children experience high rates of early childhood caries (ECC), and in some of these cases, require full mouth rehabilitation under general anesthesia. This study investigates the dental experiences contributing to ECC in status First Nation children requiring dental rehabilitation under general anesthetic for treatment.

Methods

All parent(s)/caregiver(s) presenting to the Children's Dental Clinic at the Health Sciences Centre in Winnipeg, Manitoba with registered First Nation children requiring dental surgery under general anesthesia for ECC were invited to participate. Participants (n=12) engaged in a semi-structured conversational method. This study followed grounded theory approach and data analysis was performed using Dedoose software.

Results

Using grounded theory, three categories emerged from the data: experiencing barriers to dental care; identifying unique experiences and challenges to First Nation communities; and lastly identifying direct contributors to ECC.

Conclusion

First Nations children and families present with various obstacles and complications when it comes to oral health and accessing oral health care. This study identifies and discusses some those barriers and hardships in a social context.

Acknowledgment

Traditional Territories Acknowledgement: The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

I would like to acknowledge all of the participants in this study that placed their trust in me, for this I am grateful. I would also like to thank Elder Margaret Lavallee and Rhonda Campbell of First Nations Health and Social Secretariat of Manitoba for their guidance and knowledge. I would also like to acknowledge Dr. Bradley Klus for his contribution not only on the committee, but for his support in the program. I would also like to acknowledge my recruiters for this study, Mrs. Diane Whitwel, Ms. Valerie Friesen, and Ms. Brittany Bonneteau. You three and the past and present support staff are all the greatest humans that I have come to know. A special thank you to Diane Whitwell for going above and beyond, to recruit most of my participants for this study. I could not have competed this project without your dedication.

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Dedication

I would like to dedicate this study to all resilient Indigenous families and children living with the unfair distribution of the social determinants of health such as that discovered in this study.

And of course, to my husband Andrew, and children Michael, Nathan, Jacob and Natasha for putting up with me through many years of academia, it is not over yet.

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INTRODUCTION

For centuries, Indigenous people have been treated poorly in Canada. In an attempt to deal with the 'Indian' problem, the Canadian government committed physical, biological, and cultural genocide against Indigenous people in an attempt to "eliminate Aboriginal as distinct peoples and to assimilate them into Canadian mainstream against their will" (The Truth and Reconciliation Commission of Canada, 2015, p. 2). Sadly, many of their colonizing tools such as residential schools, 60s Scoop mass child apprehensions, disregarded treaties, and child welfare system were aimed at children to eliminate and control Indigenous people to assert control over Indigenous land (The Truth and Reconciliation Commission of Canada, 2015, p. 1).

Because this historical oppression is not well known and understood in Canadian society today, these deep historical roots result in a strained relationship between Indigenous people and Canadian society that continues to negatively impact Indigenous living conditions today. Factors that influence our living conditions where we were born, grow, live, work and age, are known as the social determinants of health (SDH) , more specific to the historic trauma, social standing, and systemic racism impacting Indigenous health however are the Indigenous SDH (Government of Canada, 2018; Reading & Wien, 2019)

For eligible status First Nations Canadians, healthcare (including oral health care) responsibilities fall in the hands of the federal government. The lack of historical knowledge in this group of Canadians results in misguided policies that create health inequalities, including oral health inequalities. Sadly, Indigenous communities and

individuals confront structural violence in healthcare that has become entrenched in policies because of either racism or a lack of knowing and understanding Indigenous history in Canada (Loppie, National Collaborating Centre for Indigenous Health [Webinar], 2015).

It is known that Indigenous children experience high rates of early childhood caries (ECC) (First Nations Information Governance Centre, 2018; Schroth et al., 2005; Schroth et al., 2013). In many of these cases, treatment under general anesthesia (GA) in the operating room (OR) is required due to young age, behavior, pre-existing medical conditions or the extent of treatment needs requiring full mouth rehabilitation. These children are impacted with: pain and discomfort; suffering; loss of sleep, functional limitations; impaired growth; impact on general health; missed school/impact on educational attainment; impact on esthetics/reduced self-esteem; speech impairment; social isolation; fear/anxiety; eating difficulties; and infections to name a few (Sheiham, Conway, & Chestnutt, 2015, p. 4).

For decades, this health crisis has plagued Indigenous children despite multilevel agency efforts to reduce this preventable disease. It is necessary to tackle this issue aggressively considering Statistics Canada predicts that the Indigenous population will continue to grow rapidly, reaching over 2.5 million in the next two decades (Statistics Canada, 2017). Unless we effectively address this issue, we can only anticipate that many more Indigenous children will continue to suffer.

This study starts by exploring the oral health experience of First Nations children to identify the factors contributing to ECC, or what used to be referred to as baby bottle tooth decay. The purpose of this study is to explore the dental experience of First

Nations children to determine the contributing factors to ECC and highlight some potential solutions moving forward.

METHOD

Setting

This qualitative study included parent(s)/caregiver(s) of ASA Class I (healthy), and ASA Class II (mild-moderate systemic disturbance/disease) (American Society of Anesthesiologists, 2020) status First Nations children requiring GA for treatment of ECC at either the Health Sciences Centre or Misericordia hospital operating rooms in Winnipeg, Manitoba. ECC is defined as “the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces (dmfs) in any primary tooth in a child under the age of six” (American Academy of Pediatric Dentistry, 2019c, p. 71)

Participants were either existing patients or were referred from Winnipeg or rural/remote community dental clinics in Manitoba. A convenience sample was selected, and parent(s)/caregiver(s) were invited to participate in this study when it was determined that their child was eligible for dental rehabilitation under GA for ECC. A total of 12 parent(s)/guardian(s) were interviewed for this study.

Design

Qualitative research was favoured for this study as it enables health care researchers, such as the principal investigator (PI) to “understand how social practices and patterns in health care are created and what meaning these practices have for people within specific and/or varied contexts” (Foley & Timonen, 2016, p. 1197).

Grounded theory (GT) methodology was used for this study to develop theories that could be considered contributors to ECC in First Nations children through data gathering and analysis. Given the complexities of what we know of Indigenous health, GT was chosen as it focuses on social practices or action (Sbaraini, Carter, Evans, & Blinkhorn, 2011, p. 2), and offers "systematic approaches for discovering significant aspects of human experience that remain inaccessible with traditional verification methods" (Charmaz, 1995, p. 30). More specifically, Constructivist GT not only pushes the researcher to further examine the data, researcher and research process, it also "locates the research process and product in historical, social, and situational conditions" (Charmaz, 2017, p. 34), a much needed consideration for Indigenous health research for the reasons mentioned in this document.

Dental assistants of the Children's Dental Clinic recruited the participants in the absence of the PI once the child was confirmed for dental rehabilitation under GA for ECC treatment. The recruitment approach was guided by a culturally aware predetermined script to ensure full disclosure and consent could be obtained (see Appendix B).

Data gathering consisted of conversational method interviewing by the First Nations PI. This conversational method, a "means of gathering knowledge found within Indigenous research" (Kovach, 2010, p. 40) was guided by semi-structured questions that were reviewed by an elder (ML) at the University of Manitoba. This method of interviewing was preferred over traditional interviewing, as it "aligns with an Indigenous worldview that honours orality as means of transmitting knowledge and upholds the relational which is necessary to maintain a collectivist tradition" (Kovach, 2010, p. 42).

Tobacco was offered to the Elder in Residence at the University of Manitoba (ML) for guidance. A member of the First Nations Health and Social Secretariat of Manitoba (RC) was also consulted via email communication. This study received ethics approval from the University of Manitoba's Health Research Ethics Board (HREB).

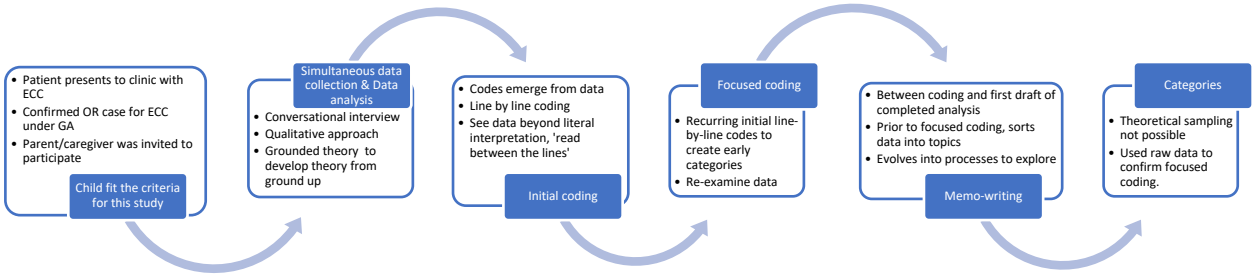

Figure 1. Research design process for this study. Modified from Charmaz (1995) for the limitations of this study.

Data collection and analysis

The interview included one or two parent(s)/caregiver(s) that provided consent to participate and was able to meet for an approximately one-hour semi-structured conversational interview (see Table 1 for list of interview questions). The PI was responsible for contacting and setting up the meetings with the participants following confirmation that consent was obtained. Times and locations were determined by the participants; this ensured that the participants were in an environment that they perceived as safe.

Participants were instructed prior to the session that they were not obligated to answer all questions, and that they could stop the interview at any time. Support information was made available to the participants due to the potential for emotional

hardship while exploring sensitive topics. Collected data included participant demographics, audio recorded sessions, transcripts, and field notes compiled by the PI.

To examine fully the data from a clinical and cultural perspective, the First Nations PI used open coding and thematic analysis.

Table 2. Semi-structured interview questions.

Interview questions
1. Are you the parent, foster parent or relative? Is the child in Child and Family Services care? Do you know his/her past dental experience?
2. Do you live in or near Winnipeg? Or are you from out-of-town? Where (remote/rural). Do you think it is difficult to get dental care from the dental therapist, dental hygienist, or dentist for your child where you live? If so, why?
3. Is your community water fluoridated? Does your child drink water from this water supply?
4. How often are you able to brush your child's teeth? Are there any difficulties in brushing your child's teeth, like no toothpaste, toothbrush, access to clean or running water?
5. Have you ever been exposed to any kind of dental education? Did you have prenatal dental education?
6. Do you think baby teeth are important? What were your parent's attitudes toward cavities? Do you think it is normal for baby teeth to get cavities? Do you think children have to go for dental surgery to treat cavities?
7. Describe your child's past dental visits: When was his/her first visit? Why did you take your child to the dentist? Did they find cavities? Did your child need to return for treatment? If so, what treatment? Was there anything that prevented you from returning for this treatment?
8. Why do you think your child has cavities? Did you know your child had cavities before you came to the Children's Dental Clinic?
9. What is your understanding as to why your child needs surgery? How do you feel about your child having/needing dental surgery? Would you be willing to have fluoride that stops cavities but turns cavities black placed on your child's teeth if it meant your child could avoid surgery? Would you consider oral sedation if it meant your child could avoid surgery?
10. Did you receive guidance/help from your community or Child and family service to attend this appointment? Did you need help, and if so what kind of help getting here?
11. To your understanding, what dental services do you think are covered under the Non-Insured Health Benefits (NIHB)?
12. Did you have any trouble receiving dental care for your child? Was there a dental provider available? Were there any difficulties with the referral process? Were there any issues with NIHB? What was the transportation experience?
13. Did you or any of your family have a negative dental experience? Are there bad dental stories in your family?
14. Can you think of any issues that make it difficult to brush your child's teeth (in your home/community), such as running water, access to toothbrush, toothpaste etc.?
15. Did the Children's Dental Clinic staff explain the reason why your child needed dental surgery-could it have been explained better? Did the staff explain how to prevent future cavities? Were you able to ask necessary questions? Is there anything the clinic can do to make sure you and your family are more likely to return?
16. Do you have any family members that attended residential school? Do you think their experience impact you or your child's life? If so how? Did they ever mention if they had any bad experiences with dental or medical?

Twelve conversational method interviews were conducted, audio recorded and professionally transcribed in English. All participants answered every question and none of the interviews were aborted. The interviews were transcribed for coding purposes, and transcriptions were anonymized for data analysis.

Data were stored, organized, managed and reconfigured using Dedoose Software. Coding was completed by the PI with the guidance of the supervisors for this study. Unfortunately, due to the time, financial and geographic limitations of this study, the traditional subsequent theoretical sampling was not possible as half of the participants were not easily recalled for follow-up interviews as instructed in Sbaraini (Sbaraini, Carter, Evans, & Blinkhorn, 2011, p. 5) and Charmaz (Charmaz, 1995, p. 45). Instead, to address theoretical sampling, the conversational interviews enabled discussion directions to explore emerging topics of interest during the interview, and better prepare the PI for these emerging themes for subsequent interviews. The modification allowed within conversational interviewing also enabled data collection around emerging questions and themes (Charmaz, Grounded theory, 1995, p. 33).

Simultaneous data collection and data analysis allowed the PI to shape data collection. Once data were gathered, the PI completed the initial line-by-line coding. Initial coding enabled the PI to produce ideas inductively from early data (Sbaraini, Carter, Evans, & Blinkhorn, 2011, p. 5), remove personal experiences (Charmaz, 1995, p. 37) and see the data beyond its literal interpretation. Next, focused coding was completed by the PI based on the previous recurring initial line-by-line codes and placed in early categories. Memo-writing no longer focused on sorting data into topics, but rather examined the coding as processes to explore (Charmaz, 1995, p. 43). Lastly,

although participants could not be recalled for subsequent interviews for theoretical sampling, working and refining focused coding by re-examining raw data enabled category development (Sbaraini, Carter, Evans, & Blinkhorn, 2011, p. 5). Focused coding was organized in Dedoose and reviewed by the supervisors in this study. Lastly, the final codes were reviewed with a supervisor for considerations and amendments.

RESULTS

Although more themes emerged than can be discussed here, three of the prominent themes from data are highlighted and discussed: experiencing barriers to dental care; identifying unique experiences and challenges to First Nation communities; and lastly identifying direct contributors to ECC.

Experiencing barriers to dental care

Several participants identified barriers to oral health care for young First Nations children. One barrier included lack of consistent access to community dental care (see Box 1 for responses about community dental access). Half of the participants (n=6) indicated issues with access to a community dental provider. It was also mentioned that dentists coming through the community changes, so they were not sure ‘what kind of dentist they were getting’. Two participants left their community to have their child referred to specialty dental clinics. A quarter of the participants (n=3) found that receiving dental care and referral off the reserve was much easier than the on-reserve referral system.

Box 1: Responses about community dental access.

"It's really easy to come by dental when you're actually in the city, but when you're in the reserve it's really hard to get help for that"
"they only have dentists that, I don't know, come in whenever they feel like it seems lately"
"He comes in I think- I can't remember. Twice a year, I think"
"There was hardly any dental- They had a dentist there, but it was always so busy"
"Actually, they never really had dental care over there"
"There was never a dentist there. When there was a dentist, he was booked"
"If they're always there then just take a regular check-up right? So they won't be scared, nothing. They will get used to it"

Two of the children visited the Emergency Room at the Children's Hospital, Health Sciences Centre for facial cellulitis/infection prior to coming to the Children's Dental Clinic. Both of these children were not previously seen by a dental provider and did not have a dental home. Including these two, seven children experienced obvious pain and/or infection prior to or while waiting for dental surgery under GA. While participants had no complaints about the OR wait list time at the Children's Dental Clinic, this shows that children experience dental pain while waiting for surgery.

Participants also raised financial barrier concerns about the non-insured health benefit (NIHB) insurance program for registered/status First Nations persons. The NIHB insurance program (Government of Canada, 2019a) provides vision care, dental care, mental health counselling, medical supplies and equipment, prescription and over-the-counter medications, and medical transportation to eligible First Nations (registered First Nation individuals registered under the *Indian Act*) and Inuit clients when these services are not covered by other plans.

One participant shared an experience where one dental clinic in Winnipeg instructed the family that they required $250 before they could take treaty, another encountered at least one dental clinic in Winnipeg that did not direct bill NIHB. Sadly, when dental clinics fail to direct bill, or if the clinics expect a deposit for treatment, many First Nations families cannot afford to pay out of pocket. This creates a barrier to obtaining dental treatment for First Nations children and families.

Another participant spoke about the hesitation to provide the child's registration First Nation number to the dental office because they were concerned about being judged for having NIHB coverage (see Box 2 for NIHB coverage and mistrusting dental providers). First Nations individuals may be apprehensive when using their Indian status/registration number for NIHB coverage for various reasons, including the discriminatory stigma associated with this coverage in Canada. While this example falls in issues with NIHB coverage, it also fits into mistrust in dental providers. Discrimination and its history in Canada will be discussed later on in this document.

Box 2. Response about NIHB coverage and mistrusting dental providers.

"I don't know. I get nervous, that I'm like…they might look down on me, like oh, it's just another Indian person"

Identifying unique experiences and challenges to First Nation communities

There are various descriptions of how participants mistrusted dental providers in this study. This included the lack of obtaining informed consent, past negative dental experiences, fear that the dentist would hurt their child and fear that dental providers' motivations were economically driven, or not in the best interest of the child (See Box 2 and 3: mistrusting dental providers).

Box 3. Mistrusting dental providers.

"I find these dentists as crooks, they just want to gain and profit from First Nations, with the work that's not necessary in their mouth"
"we just worried about the dentist, being rough with my baby"
"I remember some kids were just crying and they were scared. And they were held down…the dentist assistants would hop on the dentist chair and hold the child down…I don't know if parents were aware of that kind of treatment that was given to those kids and they were small".
"they don't even try they just might go and pull his teeth out"

Addressing mistrust (See Box 3. Mistrusting dental providers) is a complicated issue. To start, providing dental care to First Nations communities and individuals based on the needs of dominant society by treating 'everyone the same' is colour-blind and is a form of racism (Loppie, National Collaborating Centre for Indigenous Health [Webinar], 2015). Cultural safety training for dental providers, especially for those providing dental care to Indigenous individuals and communities is highly recommended as colour-blind health care delivery poses many respect and cultural challenges.

The consequences of culturally unsafe practice include: emotional and social harm; lack of trust in the system; diminished utilization of critical services; non-compliance with essential interventions; and poor health outcomes (Loppie, Cultural safety lecture, 2015). Without the health care provider introspection that is one of the key components to cultural safety, many providers knowingly or unknowingly perpetuate colonial ideologies through explicit or implicit racism, creating harm on the patients they're supposed to be helping. Not to mention, pushing dental care on First Nation communities that is catered for dominant society is no different than the expectations of

the 20th century agenda “to assimilate and acculturate Indigenous peoples into the dominant culture” (Reading & Wien, 2009, p. 23).

According to Loppie (2015), the trajectory of racism first begins with the belief that race exists, and second that racial categories are regarded in a hierarchy. Unfortunately, those that are placed in the lower rungs of this hierarchy, such as Indigenous people, become identified with mostly negative qualities and stereotypes that develops the foundation of discrimination for all of that group. This results in unequal treatment of Indigenous people placed in this category and relative position in that hierarchy. This trajectory of racism in healthcare ultimately results in health inequity (Loppie, National Collaborating Centre for Indigenous Health [Webinar], 2015). This is why it is essential to unpack this baggage through cultural safety training when providing care for Indigenous and visible minority patients/clients.

Second, emerging evidence from the data points to a deficiency of informed consent with Indigenous patients and legal guardians. Informed consent is an ethical and legal obligation by which a health care provider gives pertinent information regarding diagnosis and treatment needs to a patient or legal guardian for a child so that a voluntary and educated decision can be made by the patient and/or legal guardian (American Academy of Pediatric Dentistry, 2019d). Autonomy over health care choice is a patient’s right, and this ability to have control and autonomy is known as self-determination. This is another reason for providers to have cultural safety training, where the transfer of power from the provider to the recipient is another key concept of cultural safety.

Third, frustration around the dental delivery in communities as expressed by the participants can be attributed to the policies established by First Nation and Inuit Health Branch (FNIHB) in Manitoba. Not only does FNIHB or the federal government determine the providers, frequency of visits to the community, and acceptable procedure production, the FNIHB policies or processes of referral from the community differs from that of private clinics.

While these processes for referral do have benefits, they also pose challenges for the dental provider and community. For example, one participant was frustrated with the failure of an orthodontic referral and commented that after leaving the community, the referral to an orthodontist from a private clinic was executed immediately. Another referral frustration involved referral to a pediatric dentist where the family could see a cavity, but the dentist in the First Nation community did not refer. After a couple of appointments with no referral, the family took the child to a nearby community for a referral, for which the referral was done immediately.

This difference in referral policy creates frustration and places the blame on the community dental provider for following referral policies, resulting in misplaced mistrust. This difference in policy and treatment in First Nation communities is known as structural racism. Structural racism “emerges when the dominant group is established and its power is reinforced through inequitable laws, policies, rules and regulations, as well as access to resources” (Reading C. , 2013, p. 5). Structural racism in a healthcare setting results in longer wait times, fewer referrals, and disrespectful treatment (Loppie, National Collaborating Centre for Indigenous Health [Webinar], 2015).

Dental delivery based on procedure production in the community is risky dental delivery that could not only result in unnecessary procedures, but also may support culturally unsafe dental delivery necessary for First Nation communities. Incentivising practitioner's procedure production with financial gain or punishment is an approach used in Manitoba First Nation communities. Furthermore, incentivising practitioners to do more procedures while in the communities does not address oral health inequities, it is just a patch that allows it to appear as if a difference is being made.

Almost all (n=10) participants indicated that they had family that had been in a residential school, one answered that they were unsure, and one answered that her family member hid from the agents that came to take them away. One common theme in this study was that those family members that attended residential school did not speak much about their experience to their families, this included dental experiences.

Knowing the residential school experience of the participants is important to this study because residential school is a known distal determinant of health. According to Reading & Wien (2009), the distal determinants of health has the "most profound influence in the health of populations because they represent political, economic, and social contexts that construct both intermediate and proximal determinants" (p. 22). It is well documented that the health and well-being of those with residential school experience are negatively impacted (Wilk, Maltby, & Cooke, 2017, pp. 17-19).

This historic trauma is however not confined to the generation that suffered the atrocities of the residential school. Known as intergenerational trauma, the "lasting effects of residential schooling on the current Indigenous population are complicated and stretch through time and across generations" (Wilk, Maltby, & Cooke, 2017, p. 20).

This was confirmed in a recent survey, the First Nations Information Governance Centre regional health survey found that the “impact of residential schools in the health and well-being of First Nations people are similar, whether they attended the residential schools themselves or are descended from someone who did” (CBC News, 2018; First Nations Information Governance Centre, 2018, pp. 140, 163). This is significant in that although the memories of residential schools for fellow Canadians diminishes with the past, the negative impact from residential schools on the contemporary Indigenous population persists in Indigenous health and oral health outcomes.

Identifying direct contributors to ECC

Most parent(s)/caregiver(s) (n=11) were unaware that children should be seen before the age of one. All participants that were able to answer (n=7) if their child was seen by a dentist before one year old, responded negatively. This finding is relevant in that the American Academy of Pediatric Dentistry’s (AAPD) policy on the dental home (American Academy of Pediatric Dentistry, 2019b, p. 34), based on the American Academy of Pediatrics medical home model, is to provide comprehensive and quality primary care.

The establishment of a dental home is not always possible in First Nation communities when access to a community dental provider, and access to healthy choices are not always possible. Additionally, while anticipatory guidance (family education, instruction and motivation) attempts to diminish the paternalistic and prescriptive approach to deliver oral home care support, it fails when it comes to the two motivational approaches (motivational interviewing and self-determination theory) because both are based on supporting autonomy, the key element to behaviour change

(Nowak, Christensen, Mabry, Townsend, & Wells, 2019, p. 208). Sadly, autonomy is contrary to persisting colonialism that frowns upon autonomy and self-determination in the very paternalistic and prescriptive policy that governs health care delivery, especially oral health care delivery in First Nations communities. This is discussed further later in this document.

Almost half of the participants (n=5) indicated that access to oral hygiene products such as a toothbrush and toothpaste is sometimes a problem. Four of the responses were related to access and cost. The fifth response was associated with visiting family in need of their toothbrush supply because the family did not have toothbrushes of their own. One participant indicated that a toothbrush is $9.00, and toothpaste $15.00 in their community, while another participant substantiated that the cost of oral hygiene products was a barrier. When asked, another participant indicated that toothbrushes were not available from the nursing station, only from the dentist. The last participant indicated that her children sometimes play with the toothbrush, resulting in having to discard it; they cannot afford to replace the toothbrush until money becomes available. A quarter (n=3) of the participants indicated that they purchase these products while away from the community to be able to afford them.

Most of the participants (n=9) when asked how often they were brushing their child's teeth indicated that the child was brushing their own teeth, with two specifying to not brushing the child's teeth at all. One of these participants implied that they now brush their child's teeth since finding out that their child required dental surgery. Three quarters (n=9) indicated that their child was not brushing enough (less than once a day). In an ideal setting, when a dental home is established prior to the child turning one year

of age, not only is anticipatory guidance delivered, but oral health home care instructions are provided as well. This includes instruction to parents, giving them the responsibility of brushing their child's teeth and are to remain engaged with oral hygiene practices by supervising as their child becomes capable of brushing his/her own teeth (Nowak, Christensen, Mabry, Townsend, & Wells, 2019, p. 224). The AAPD's policy statement supports implementing oral hygiene habits no later than the time of the eruption of the first tooth, and that toothbrushing should be done by the parent twice daily using the appropriate amount of toothpaste (American Academy of Pediatric Dentistry, 2019c, p. 72).

Almost half of the participants (n=5) report that they believe that bottle use contributed to their child's cavities. Chocolate milk was mentioned in three interviews, with two pertaining to it commonly being put in bottles. According to the Centers for Disease Control and Prevention (CDC), chocolate milk is considered a sugar sweetened beverage (SSB) and ranks flavored milk as a drink to limit (Centers for Disease Control and Prevention, 2018). Furthermore Canada's food guide classifies chocolate milk as sugary drink and that sugary drinks may lead to an increased risk of obesity, type II diabetes and cavities in children (Government of Canada, 2019b). One study concluded that SSB intake during infancy significantly increased the likelihood of consuming one or more SSBs a day at 6 years of age (Park, Pan, Sherry, & Li, 2014, p. S61). This risky beverage consumption has consequences beyond oral disease as the child gets older.

Moreover, the CDC recommends only breast milk or infant milk to be given to the infant in the bottle (Centers for Disease Control and Prevention, 2018). The AAPD

recommends avoiding SSBs in the baby bottle, and to discontinue bottle use after 12-18 months (American Academy of Pediatric Dentistry, 2019c, p. 72). More prevention, promotion and research are needed in First Nations families to explore not only the use of chocolate milk in bottles, but the consumption of sugar-sweetened beverages overall.

All but one of the home interviews (n=2) offered the interviewer bottled water, not tap water as bottled water was their primary source of drinking water. All participants that offered bottled water prior to starting the interview were located in Winnipeg. One of these two responded that they prefer bottled water over tap water because of its portability, the other indicated that they prefer bottled water due to a history of contaminated water. One participant from a First Nation community shared that they prefer bottled water because they did not care for the taste of the community water supply. A third (n=4) drink the community water, but all participants are unaware if the community water is fluoridated.

While bottled water is a good alternative as a non-caries risk beverage, especially when chosen over juice or other sugary beverage, it typically lacks fluoride which is considered a protective factor against ECC. This study also revealed the potential for bottled water consumption due to mistrust in community water supply, this is understandable with the history of water contamination and boil water advisories in First Nation communities in Canada. More research is needed to explore bottled water consumption, and dental providers should be educating and advocating for water fluoridation.

Discussion

It is important to understand that dental caries is a complex disease influenced by biological, social, behavioural, educational, environmental, and health systems factors (American Academy of Pediatric Dentistry, 2018, p. 12). For example, Schroth, Halchuk & Star (2013) that found that children with a family history of residential school presented with a higher prevalence of severe ECC (p. 7, paragraph 6). By omitting or ignoring the factors outside the biological factor, especially for First Nation Canadians, we are mistakenly de-socializing ECC and making it an individual problem, rather than the societal problem that it actually is (Farmer, Nizeye, Stulac, & Keshavjee, 2006, p. 1690).

Therefore, we should be able to understand that dental treatment intervention for ECC alone will not reduce oral health inequalities, it actually may even widen inequalities (International Centre for Oral Health Inequalities, 2015, p. 3). As a matter of fact, literature shows unacceptable recurrence of decay following dental rehabilitation under GA for ECC (Berkowitz, Amante, Kopycka-Kedzierawski, Billings, & Feng, 2011, p. 513). This is because comprehensive dental treatment for ECC under GA is not treatment for the disease, it is only a treatment of the symptom. This silo approach to treatment fails to identify and address the intricacy of most Indigenous health issues (Reading & Wien, 2009, p. 8). In order to address this, we have to comprehend the root causes of ECC, and understand what health and well-being mean to First Nation communities.

Indigenous ideologies “embrace a holistic concept of health that reflects physical, spiritual, emotional, and mental dimensions” (Reading & Wien, 2009, p. 8) which is best recognized with the medicine wheel teachings and the four directions. The holistic view of health and well-being shows that health goes beyond the physical body to include the surrounding environment, and that the primary factors to impact health come from the living conditions that one experiences known as the SDH (Mikkonen & Raphael, 2010, p. 7). As a matter of fact, Mikkonen and Raphael (2010) include Aboriginal Status as a SDH (p. 9).

Ultimately, we believe that we are treating ECC in the OR, but are in fact just patching up these children and sending them right back into the environment that created the dental disease in the first place (McKinstry, 2017, p. e221). As a matter of fact, one study shows that high caries experience in early childhood previously treated with comprehensive dental rehabilitation under GA was “related to a significantly higher caries burden in adulthood” (Jordan, Becker, Jöhren, & Zimmer, 2016, p. 117). Another study found that children with caries in the primary dentition impacts their future disease trajectory in the permanent dentition compared to children who are caries free (Hall-Scullin, et al., 2017, p. 766).

Sadly, children with ECC in childhood are destined for dental disease in adulthood. This is detrimental considering that the “mouth is a window to the rest of the body, impacting upon general health and quality of life of an individual” (International Centre for Oral Health Inequalities, 2015, p. 32). By continuing on with the status quo, we are dooming our First Nations children to compromised health outcomes and future failure.

Unfortunately, consistent with uninformed policies and societal ideas concerning Indigenous health, individual choice and behaviour is frequently employed as the cause for hardships and disease, in this case ECC. It is not the intention of this study to portray Indigenous children as unhealthy, nor is it to place the blame on Indigenous families. The intention of this report is to bring light to the upstream issues concerning ECC in First Nations oral health.

When we approach ECC downstream or focus on ECC at an individual level, we become distracted into believing that personal motivation and resulting behaviour change is the answer to oral health inequities in First Nations communities. Oral health behaviours "must be considered within the socio-political context of Aboriginal peoples' lives lest an individualistic perspective predominate the analysis" (Reading & Wien, 2009, p. 11). It is from this individualistic perspective that many practitioners and society perceive that First Nations children and families choose not to brush and floss their teeth and conclude that this is why First Nations children experience ECC.

Limitations

Although the PI's own experience providing dental care in First Nation communities provided insight into the unique experiences of the participants, her own despair and frustration as a status First Nations individual, provider and patient introduced bias from her own experiences.

Due to the time, financial and geographic limitations of this study, only one interview per participant was planned. Theoretical sampling was achieved by continuing to include participants that were relevant to the study (parents(s)/caregiver(s) with First

Nations children that required treatment for ECC under GA) that could further elaborate on earlier emerging variables to develop theories.

The intention behind adopting a conversational method of interviewing is based on trust and openness that comes from the development of a relationship or friendship. Due to the time limitation of this study, the PI felt that she was unable to develop a trusting relationship with all participants in the brief, one-hour meeting. There seemed to be a component of hesitancy for some participants to speak the truth, although most participants spoke easily. In addition to this, the PI feared that there was a lack of reciprocity, as the PI was gaining information from the participant but was only able to give back in the form of a gift card.

Conclusion

The common foundation of the findings in this study is rooted in colonialism and government policies (including but not limited to neocolonialism and structural racism) resulting in inequity. There is a difference between health inequality and inequity, and it should be understood so that the approaches for addressing not only dental, but health needs as well are appropriate (See Figure 2: Inequality versus Inequity. (Maguire, July 13, 2016)). “Health inequalities which are systematically related to people’s unequal positions in society are often defined as health inequities, a designation given to inequalities which are considered unjust and unfair” (Graham, 2007, p. 17). Hancock goes on to explain that while equality may not be equitable, and that inequity is not only unjust and unfair, it is also avoidable and unnecessary in cases where disadvantaged communities with high needs receive the same level of service as dominant society.

When this happens, disadvantaged communities and individuals suffer inequity (Hancock, 2015).

The goal of the Government of Canada is to support the reduction of health inequalities “to help give everyone the same opportunities to be healthy, no matter who they are or where they live” (Government of Canada, 2018). This study shows that they fall short of providing equal access to oral health care, let alone address inequity.

The inequitable distribution of the determinants of health for Indigenous peoples results in not being able to appreciate the same possibilities or opportunities for health (Reading & Wien, 2009, pp. 23-24). We cannot continue to provide the status quo oral health care to Indigenous communities and individuals based on the needs and what works for the dominant society in an attempt to address health inequity.

It is time for change. Change in general would come from policy changes and sincere reconciliation with respect to Canadian society, and decolonization and self-determination for First Nations. Far too many First Nations children are suffering with ECC because they lack adequate physical, political and social access to oral health care. It is time to stop the assault on First Nations children for the sake of possession of Indigenous lands and resources. If we continue on with the status quo, we are guilty for setting First Nations children up for future failure.

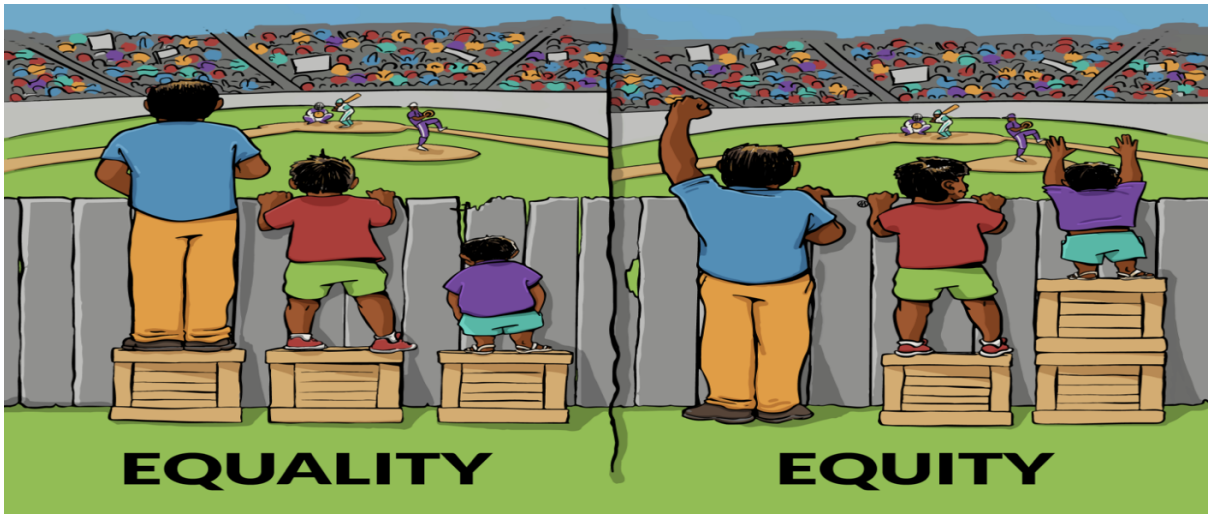

Figure 2. Used with permission. Artist: Angus Maguire. Interaction Institute for Social Change (adapted from original version: Craig Froehle 2012)

Data-sharing statement

This is a qualitative study and therefore the data generated is not suitable for sharing beyond that contained within the report. Further information can be obtained from the corresponding author.

Appendix A

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM
Individual Interview

Title of Study: "The oral health experience of First Nation children requiring treatment under general anesthesia for Early Childhood Caries: A qualitative approach to decolonizing research in dentistry".

Principal Investigator: *Sheri McKinstry*
Co-Investigator:
Sponsor: *Not applicable*
Funder: *University of Manitoba Endowment Fund*

You are being asked to participate in a research study involving an individual interview. Please take your time to review this consent form and discuss any questions you may have with the study staff, your friends, and family before you make your decision. This consent form may contain words that you do not understand. Please ask the study staff to explain any words or information that you do not clearly understand.

Purpose of this Study

This research study is being conducted to study the dental history of First Nation children requiring dental surgery for treatment of early childhood caries under general anesthesia.

Participants Selection

You are being asked to participate in this study because as a First Nation participant, you can provide valuable information that will help influence future dental approaches and programs provided to First Nation communities and individuals.

A maximum of 15 participants will be asked to participate.

Study procedures

- The method of data collection for this study will be individual interviews.
- Participation in the study will be one session that will take approximately one hour.
- Dental assistants at the Children's Dental Clinic will obtain consent.
- For individual interviews, the principle investigator, a First Nation dental resident will be conducting the interview.
- You will be asked some questions relating to you and your child's past dental experience. These questions will help us to better understand the dental barriers facing First Nation children and their families.
- The interview sessions will be audio-recorded. The audio-recordings, identified only by an assigned number will be transcribed (or typed out) by the principle investigator and Transcript Heroes Transcription Services for analysis.
- Transcribers (Transcription Heroes Transcription Services) will sign a confidentiality agreement form protecting the information that is discussed in the interview.

- No one's name will be asked or revealed during the individual interviews. However, should you or your child's name be mentioned during the interview, the transcriber will be instructed to remove all names from the transcription or typed out interview.
- The audio-recordings will be stored in a locked cabinet in a locked office. The audio-recordings and transcriptions will be destroyed after five years.
- Results from the study will be made available to participants if requested; you must provide the Principle investigator with your preferred method (e-mail or physical address) of receiving the results.

Risks and Discomforts

There are no anticipated physical risks to participants.

There are very few risks to you by participating in this research. It is possible that talking about your child's dental experience might be emotional, embarrassing or stressful for you. You do not have to answer questions that you may find uncomfortable or upsetting. A resident elder from the University of Manitoba can be made available if you feel you need to talk about to someone. If you're experiencing emotional distress from the interview and would like to talk, First Nations and Inuit mental health and wellness offer Hope for Wellness Help Line (1-855-242-3310) or online hopeforwellness.ca. For a list of mental health providers, you can inquire at (204)985-4632 or (204)984-7094.

Benefits

Participating in this interview may not help you directly, but information gained may help other First Nation individuals, communities or family members experiencing barriers to dental care in future dental care programs.

Costs

There is no cost to you to participate in the interview.

Payment for participation

You will be given a Tim Horton's gift card of $20 per completed interview.

You will receive no payment or reimbursement for any expenses related to taking part in this study.

Confidentiality

We will do everything possible to keep your personal information confidential. A Master List with participant names and participant code/number will be stored in a secure/locked cabinet separate from the interview data. Your name will not be used to identify the study records (typed out/transcribed interviews). If the results of this study are presented in meetings, presentations or publications, you will not be identified as a participant in the study. The collection and access to personal information will be in compliance with provincial and federal privacy legislations.

Audio recordings of the interview will be transcribed or typed out by Transcript Heroes Transcription Services to be used for analysis and report preparation. The audio recordings and typed notes will be kept for 5 years in a secure locked file cabinet and office until they are

destroyed.

Some people or groups may need to check the study records to make sure all the information is correct. Please note that these organizations and individuals maintain the professional responsibility to protect your privacy.

These individuals, groups or organizations that may request access to these records are:

- The Health Research Ethics Board of the University of Manitoba which is responsible for the protection of people in research and has reviewed this study for ethical acceptability.
- Quality assurance staff of the University of Manitoba and my supervisors, Dr. Andrew Hatala and Dr. Robert Schroth to ensure the study is being conducted properly.

Handling of information:

Upon consent, participants will be assigned a participant code/number. This code/number will be recorded on a Master List that will be stored in a locked cabinet in a locked office separate from study data such as the recorded interviews, and transcribed or typed out interviews. The interview recordings and transcribed interviews will be identified only by this code/number. The interview recordings and transcribed or typed out interviews will be stored in a locked cabinet in a locked office. Only those persons identified above will have access to these records. Access to the study records will not reveal your identity, unless the master list and/or consent form is requested by the Health Research Ethics Board. No personal information will leave the University of Manitoba.

All study data will be stored in a locked file cabinet in a locked office at the University of Manitoba for 5 years until they are destroyed. The transcribed notes will be used for coding, where common themes and topics of interest will be put together for the final report. The report will be written on a secure, password protected computer, with no disclosure of personal information. Electronic communication pertaining to the interviews will be completed with a secure and password protected email with the Winnipeg Regional Health Authority (WRHA) or the University of Manitoba (UM) email system. Anticipated email communication with supervisors named above will be done so with the same email. No identifying personal information of the participants will be communicated via email. If requested, a copy of the results can be emailed or mailed to the participants.

Permission to Quote:
Although our intention is to gather common themes during coding of information, we may wish to quote your words directly in reports and publications. Note that your identification will not be revealed. With regards to being quoted, please check yes or no for each of the following statements:

Researchers may publish documents that contain quotations by me under the following conditions:	
No ☐ Yes ☐	I agree to be quoted directly if my name is not published (I remain anonymous).

Voluntary Participation/Withdrawal from the Study
Your decision to take part in this study is voluntary. Your decision not to participate or to withdraw from the study will not affect your care (or services received) at the Children's Dental Clinic.

Questions
If any questions come up during or after the study, contact the principal investigator:
Dr. Sheri McKinstry (204-787-2516 or ummckins@myumanitoba.ca)

For questions about your rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204)789-3389.

Consent Signature:

1. I have read all 4 pages of the consent form.
2. I have had a chance to ask questions and have received satisfactory answers to all my questions.
3. I understand that by signing this consent form I have not waived any of my legal rights as a participant in this study.
4. I understand that my records, which may include identifying information, may be reviewed by the research staff working with the Principal Investigator and the agencies/organizations and individuals listed in the Confidentiality section of this document.
5. I understand that I may withdraw from the study at any time and my data may be withdrawn prior to publication.
6. I understand I will be provided with a copy of the consent form for my records.
7. I agree to participate in the study.

Participant signature_____ **Date** _____
(day/month/year)

Participant printed name: _____

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given their consent

Printed Name: _____**Date** _____
(day/month/year)

Signature: _____

Role in the study: _____

Relationship (if any) to study team members:_____

Appendix B

HS22715 (H2019:128)
The oral health experience of First Nation children requiring treatment under general anesthesia for Early Childhood Caries: A qualitative approach to decolonizing research in dentistry

Script

One of our residents, Dr. Sheri McKinstry from Sagkeeng First Nation is doing a project to talk about the barriers and hardships facing First Nation families that deal with dental care. She is looking for First Nation volunteers with children that need dental treatment in the operating room to talk with about the family's dental experience. This informal interview will take about an hour, and your participation would be voluntary, confidential and anonymous. If you decide not to participate in this study, care for your child will not be affected in any way.

If you are interested, Dr. McKinstry would contact you directly by telephone to set up a meeting time and discuss the project further with you. Participants will be offered a $20 Tim Hortons gift certificate as a token of appreciation for your time.

To make sure that all important information is identified, the interview will be tape recorded and then transcribed or typed out by a professional service. Although we need to get your consent in writing, the interviews will be identified by number to protect you and your child's privacy and confidentiality. Neither you, nor your child will be identified in the final report.

The master list that links any personal information with the interview number will be locked at a secure location at the University of Manitoba that can only be accessed by the principle investigator (Dr. Sheri McKinstry) and her supervisors (Dr. Andrew Hatala and Dr. Robert Schroth) and although unlikely, by the governing body that ensures that the project is conducted in compliance with the University code of ethics. The final report for this project can be mailed or emailed to you if you would like, we would need your address or email address on the consent form to do this for you. Although the findings from this study may not benefit you directly, it may benefit First Nation families with problems accessing dental care in the future.

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