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Prevalence of early childhood caries among First Nations children, District of Manitoulin, Ontario

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Summary. *Background.* Epidemiological studies of Aboriginal communities in Canada and Native American populations in the United States have reported that early childhood caries (ECC) is highly prevalent. The purpose of this study was to determine the prevalence of ECC and dental caries in the First Nations population of 3- and 5-year-old children in the District of Manitoulin, Ontario to assist in developing effective dental health promotion strategies.

Methods. All 3- and 5-year-old children in elementary schools and day-care centres in seven First Nation communities were eligible for the survey examination. Three-year-old children at home and 5-year-old children attending school off-reserve in six of the communities were also eligible for epidemiological survey examination of oral health status including caries, gingival and soft tissue conditions. Cases of ECC were defined as children with caries or restorations on two or more primary maxillary incisors or canines or those having a total decayed, missing, filled primary teeth (dmft) score of 4 or greater.

Results. A total of 87 children (59% 5 years old, 54% females) were examined. Seventy-four per cent of children had one or more carious lesions. Forty-five cases of ECC were found, a prevalence of 52%. The mean dmft score for cases was 7·5 (95% CI 6·5–8·4) and 0·8 (95% CI 0·5–1·1) for non-cases ($P < 0·001$). Boys in both age groups were more likely to be affected by ECC than girls.

Conclusion. Our results indicate that dental caries and ECC are highly prevalent in this population, with ECC cases having 6.7 more dmft than non-cases.

Introduction

Early childhood caries (ECC) is a specific form of rampant dental caries that primarily affects the deciduous maxillary anterior teeth of infants and young children although other tooth-types can also be affected. The condition has also been referred to as 'nursing bottle tooth decay', 'baby bottle syndrome' or 'early childhood tooth decay'. Its aetiology is complex and multifactorial but has often been associated with inappropriate infant feeding. ECC prevalence in Canadian Aboriginal[1] and Native American[2] populations has been reported as ranging from 25% to 72% [1–12].

Childhood oral disease has significant health and financial consequences. Untreated caries in children

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[1]The term 'Aboriginal' used in this paper is consistent with the Canadian Constitution Act and includes all people of indigenous descent, the First Nations, Inuit, and Métis peoples of Canada.

[2]The term 'Native' American or 'Native' Canadian has an inconsistent use in the research literature and is frequently used to group together people of diverse indigenous origins.

has been associated with failure to thrive [13]. If the dental disease is advanced, children, especially the very young, may require treatment under general anaesthesia [14]. Premature loss of the primary dentition may predispose to malocclusion, and caries in the primary dentition is a predictor for developing additional decay in the permanent dentition [15,16]. The cost to treat ECC can be substantial. For example, in 1996, an estimated 10 200 (9.1%) children between the ages of 1 and 4 years were affected by ECC in the City of Toronto, Ontario. If the cost of treatment for each child with the disease is estimated at $300, the total cost to the health care system for dental care alone would be $3 060 000 (Ong *et al.* Study on early childhood tooth decay. Unpublished final report prepared for Toronto Public Health, 2000).

This epidemiological study is unique as it surveyed First Nations[3] children from a general reserve population. The majority of participants in this study reside on Manitoulin Island, in the District of Manitoulin, an island approximately 200 kilometres in length located in Lake Huron in Northern Ontario. The island is accessible all year round by bridge and the closest urban centre is Sudbury, approximately 150 kilometres away. The 4400 First Nations people residing in the Manitoulin district represent just under 50% of that district's total population. There are seven federally funded First Nations health clinics, one tribal health organization and one provincially funded Aboriginal health access centre in the district.

In 1998, Noojmowin Teg Health Centre, in collaboration with local First Nations communities[4], sponsored a dental health survey of First Nations children in schools and day-care centres in the Manitoulin district. The survey found that 43% of children had untreated dental decay and a recommendation was made to expand dental health programs (Maar *et al.*, Noojmowin Teg Dental Report of First Nations Children in the District of Manitoulin. Unpublished report prepared for Noojmowin Teg Health Centre, 1999). Noojmowin Teg Health Board decided to pursue the development of a research partnership between Noojmowin Teg Health Centre, the principle investigator (SP) and the University of Toronto's Department of Community Dentistry to address the issues raised in the survey report. This paper presents the results of the first of the three phases of this study, the epidemiological survey, which determined the prevalence of ECC and dental caries in this 3- and 5-year-old population of First Nations children. The second phase of this study investigated the behavioural, environmental and socioeconomic factors influencing ECC development through interviews with primary caregivers of children using a standardized questionnaire. The final phase of this study involved conducting in-depth, qualitative interviews using the grounded theory approach with selected primary caregivers to examine how social experiences differed between families of children with ECC and those without.

Methods

Research process

This study received ethical approval from the McMaster University Research and Ethics Board, the University of Toronto Ethics Review Office and was supported by the four local Aboriginal health boards and committees. The protocol complies with the standards and procedures as outlined in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans [17] and was conducted in collaboration with the local First Nations communities and Noojmowin Teg Health Centre following a participatory action research framework [18,19]. A partnership was formed through collaborations in which control over the various aspects of the research process were negotiated between the community-based steering committee (or community representatives) and external researchers. This framework allowed for a collaborative relationship between the university-based investigators and the health centre in all phases of the project.

Population

We set out to examine all children aged 3 and 5 years in seven First Nations communities in the Manitoulin District. These age groups were selected for later comparison since odd-aged children are surveyed by local health units using the Ontario Ministry of Health's Dental Index System. Three- and 5-year-old children at all elementary schools

[3]The term 'First Nations' has replaced the word 'Indian', which many people find offensive. Although there is no legal definition, it refers to both Status and Non-Status Indian people in Canada. http://www.ainc-inac.gc.ca/pr/info/info101_e.html

[4]'First Nation' or 'First Nation community' is normally used to replace the word 'band'. There are more than 630 First Nations communities in Canada. http://www.afn.ca/About%20AFN/description_of_the_ assembly_of_f.htm

and day-care centres were identified from classroom lists. Community Health Representatives (CHRs) serving six of seven communities who had knowledge of, and contact with, all families identified all of the 3-year-olds not attending day-care. In the seventh community, 3-year-olds at home and 5-year-olds attending schools off-reserve could not be included in the survey due to costs involved in accessing this target population, which was dispersed over a geographical area of 417 square kilometres. However, we estimate that a maximum of 10 children, aged 3 and 5 years, from this community were not included in the survey frame. The examined First Nations children lived on-reserve at the time of the survey. Children were not examined if they were absent or refused examination on the survey day, or if their caregiver did not provide positive consent.

Clinical examinations

All examinations were conducted over a four-month period from March to June 2000 by one dental hygienist (RT) calibrated to the Ontario Ministry of Health guidelines (Ontario Ministry of Health dental indices software program manual, unpublished document, 1997) by one of the investigators (JLL). The examiner was trained in the population to be surveyed and examined only children included in the study. All children were examined using a mirror, blunt probe and dental light in their school, day-care centre or home. Repeated exams were not conducted due to both the limited availability of the examiner and funding.

An ECC case was defined as a child with: active or filled caries on two or more primary maxillary incisors or canines or teeth missing due to caries; or a total decayed, missing and filled primary teeth (dmft) of 4 or more. Because the same case definition criterion was used for both 3- and 5-year-olds, ECC prevalence will be elevated for 5-year-olds. ECC prevalence was also determined using a more 'traditional' ECC definition limited to two or more affected primary maxillary anterior teeth (incisors and canines) only.

A lesion was considered active if: (i) the lesion was located in a pit or fissure, or on a smooth tooth surface and had a detectably softened floor, undermined enamel or softened wall; (ii) the explorer entered the dentine of an approximal surface lesion with examiner certainty; or (iii) a tooth had a temporary filling (Ontario Ministry of Health dental indices software program manual, unpublished document, 1997). Data were recorded on a standardized survey form.

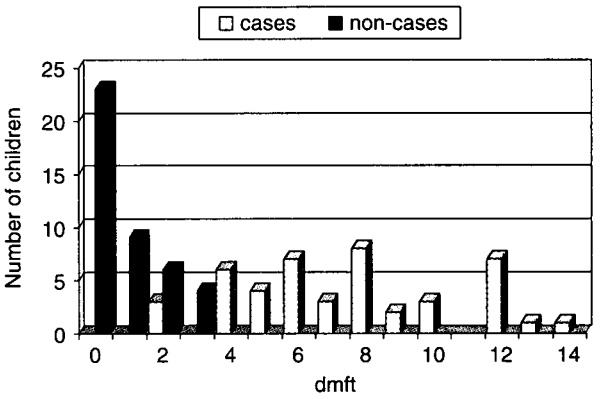

Fig. 1. Frequency distribution of dmft for cases and non-cases of ECC.

Data handling and analysis

Data recorded on the survey forms were entered into EpiInfo6 by the principle investigator (SP) and transferred to SPSS 10·1 for analysis (SPSS Inc., Chicago, Ill.). A frequency distribution of dmft for cases and non-cases was completed (Fig. 1). Chi-square and two-tailed *t*-tests were used to evaluate differences between cases and non-cases of ECC, age groups, gender and community of residence. ANOVA was used to evaluate effects of age and gender on dental health variables.

Results

We estimate that there were 122 children eligible of which 112 were invited to participate. We identified all 3- and 5-year-olds in all seven communities from day-care and classroom lists provided by schools. With the help of CHRs we identified all 3-year-olds at home and 5-year-olds attending schools off-reserve in six of the communities (whose total population comprises 40% of the First Nations population in the District of Manitoulin); a total of seven children. Using this information, we estimated that 10 eligible 3- or 5-year-olds either at home or attending schools off-reserve for the remaining community were not invited to participate. Eighty-seven of the 112 children were examined, a response rate of 78%. Response rates varied among communities from 67% to 100%. Seventy-three percent of 3-year-olds and 81% of 5-year-olds were included in the survey. Sixty-nine per cent of boys and 84% of girls were surveyed.

Table 1 shows the results for the two age groups. Caries prevalence was relatively high with more than

two-thirds of the 3-year-olds and more than three-quarters of the 5-year-olds being affected, however, the difference in prevalence between age groups did not reach statistical significance ($\chi^2 = 1{\cdot}502$, $P = 0{\cdot}2$). Similarly, the prevalence of ECC was high (52%), with 44% of 3-year-olds and 57% of 5-year-olds having the condition but again, the difference between younger and older children was not statistically significant ($\chi^2 = 1{\cdot}303$, $P = 0{\cdot}2$). Mean dmft scores were higher for 5-year-olds, but were not statistically different from 3-year-olds ($t = 1{\cdot}474$, $P = 0{\cdot}1$). For 5-year-olds, their proportion dmft of teeth filled (f/dmft) was 62% as compared to 34% for 3-year-olds; age had an effect on f/dmft ($P \leq 0{\cdot}001$). The mean dmft for 3-year-olds with a dmft ≥ 1 was 5·2 (SD 3·9) and 6·1 (SD 3·7) for 5-year-olds, but was not statistically different between age groups ($t = 0{\cdot}915$, $P = 0{\cdot}4$). Further analysis not shown in the table found the prevalence of ECC to be 38% using the 'traditional' ECC definition limited to two or more affected deciduous maxillary anterior teeth (incisors and canines) only.

Table 2 shows the results demonstrating definite differences by gender. Boys were more severely affected on every measure of disease. For example, ECC prevalence and mean dmft scores were one and a half times greater for boys in both age groups. The difference in prevalence of ECC between boys and girls for both 3- and 5-year-old boys was statistically significant ($\chi^2 = 5{\cdot}707$, $P = 0{\cdot}02$; $\chi^2 = 5{\cdot}347$, $P = 0{\cdot}02$, respectively). Also, the difference between the mean dmft scores for 3-year-old boys and girls was statistically significant ($t = 2{\cdot}393$, $P = 0{\cdot}02$), as was the difference between 5-year-old boys and girls ($t = 2{\cdot}098$, $P = 0{\cdot}04$). However, boys tended to have a higher proportion of dmft teeth filled but this finding did not reach a statistically significant difference for 3-year-olds ($t = 1{\cdot}247$, $P = 0{\cdot}2$) or 5-year-olds ($t = 1{\cdot}002$, $P = 0{\cdot}3$). More boys than girls had past or active caries (dmft ≥ 1), however, again the difference did not reach statistical significance for 3-year-olds ($\chi^2 = 2{\cdot}731$, $P = 0{\cdot}1$) or for 5-year-olds ($\chi^2 = 3{\cdot}062$, $P = 0{\cdot}1$).

Table 3 shows the results comparing the largest community, Wikwemikong Unceeded Indian Reserve, with all the other communities combined. Since there was no statistical difference between age groups for dental health parameters, the results were pooled. To control for the influence of gender, stratified analyses were conducted. Although a statistically significant difference was found between Wikwemikong (85%) and all other communities combined (64%)

Table 1. Comparison of 3-year-olds and 5-year-olds.

	Age	
	3	5
N	36	51
% male	53	41
% with ≥ 1 dmft	67	78
% with ECC	44	57
Mean (SD)		
decayed	1·9 (2·7)	1·2 (1·9)
missing	0·4 (1·2)	0·5 (1·3)
filled	1·2 (2·7)	3·0 (3·3)
dmft	3·5 (4·0)	4·8 (4·1)
Median dmft	2·0	5·0
f/dmft percentage	34	62

Table 2. Comparison between boys and girls by age.

	Age			
	3		5	
	Males	Females	Males	Females
N	19	17	21	30
% with ≥ 1 dmft	79	53	90	70
% with ECC	63	24*	76	43*
Mean dmft	4·9	1·9*	6·2	3·8*
Median dmft	4·0	1·0	6·0	2·5
f/dmft percentage	37	26	64	63

*Statistically significant differences between males and females, $P \geq 0{\cdot}05$.

Table 3. Wikwemikong *versus* all other communities combined.

	Wikwemikong	Other	Overall for all communities	*P*-value
N	40	47	87	
% male	43	49	46	
% males with ≥ 1 dmft	94	78	85	0·2
% females with ≥ 1 dmft	78	46	64	0·04*
% with ECC	58	47	52	0·3
Mean dmft (SD)	5·0 (4·1)	3·6 (4·1)	4·2 (4·1)	0·1
f/dmft percentage	62	44	55	0·2

*Unadjusted value.

Table 4. Comparison of children with and without ECC.

	ECC	No ECC	Test statistic	*P*-value
N	45	42		
(%) male	62	29	$\chi^2 = 9.904$	0·02
Proportion who were aged 5	64	52	$\chi^2 = 0.85$	0·3
Proportion who lived in Wikwemikong	51	40	$\chi^2 = 0.61$	0·4
Mean (SD)				
Males				
Decayed	2·2 (2·9)	0·7 (1·0)	$t = 2.555$	0·02
Missing	1·2 (2·0)	0 (0)	$t = 3.176$	0·04
Filled	4·2 (3·4)	0·2 (0·6)	$t = 6.044$	< 0·001
dmft	7·6 (3·5)	0·8 (1·0)	$t = 9.295$	< 0·001
f/dmft percentage	55	25		
Females				
Decayed	2·8 (2·4)	0·4 (0·8)	$t = 4.012$	0·001
Missing	0·4 (1·0)	0 (0)	$t = 1.461$	0·2
Filled	4·0 (3·8)	0·3 (0·8)	$t = 4.005$	0·001
dmft	7·2 (2·6)	0·8 (1·0)	$t = 9.785$	< 0·001
f/dmft percentage	56	38		
All				
Decayed	2·5 (2·7)	0·5 (0·9)	$t = 4.632$	0·001
Missing	0·9 (1·7)	0 (0)	$t = 3.419$	0·001
Filled	4·1 (3·5)	0·3 (0·8)	$t = 7.175$	< 0·001
dmft	7·5 (3·2)	0·8 (1·0)	$t = 13.366$	< 0·001
f/dmft percentage	55	38	$t = 1.419$	0·2

for the percentage of children with past or active decay ($\chi^2 = 4.980$, $P = 0.03$), the difference was limited to girls ($P = 0.04$) as no statistically significant difference was found between boys. The Mantel-Haenszel adjusted *P*-value for dmft ≥ 1 was 0·03 for females.

Stratified analyses found no differences between boys and girls by community for ECC prevalence, mean dmft score and f/dmft; therefore, results were again pooled. The number of children with ECC was greater in Wikwemikong, 58% of children who lived in this community had ECC, compared to 47% of children for all other communities combined, however, the results were not statistically different ($\chi^2 = 0.989$, $P = 0.3$). The mean dmft score was greater for children in Wikwemikong. Overall, children who lived in Wikwemikong had a higher mean dmft score of 5·0 (95% CI 3·7–6·3) compared with 3·6 (95% CI 2·4–4·8) ($t = 1.600$, $P = 0.1$). The proportion dmft of teeth filled (f/dmft) was greater for children who lived in Wikwemikong, 62% compared to 44% for children in all other communities combined ($t = 1.193$, $P = 0.2$).

Table 4 shows the results comparing children with and without ECC. As seen previously, boys were more likely to be affected by ECC than girls. Statistically, cases were not more likely to occur among 5-year-olds or in Wikwemikong ($P = 0.4$). Children with ECC had on average a greater number of filled teeth (4·1 vs. 0·3; $P \leq 0.001$), but also five times the amount of untreated decay as non-cases (2·5 *vs.* 0·5; $P \leq 0.001$). The mean dmft score for children with ECC was nine times that of non-cases ($P < 0.001$). Gender did not influence the mean dmft, decayed, missing or filled scores ($P \geq 0.1$) between cases and non-cases.

Discussion

We set out to examine the dental health in First Nations children aged 3 and 5 years in the District of Manitoulin. The overall response rate was 78%; with more girls participating, which resulted in 5-year-old boys being underrepresented in the survey. To minimize the effect of the participation rate on the findings, we conducted examinations at places of residence to increase the participation to the greatest extent. The reason for fewer boys participating was not known. In spite of this, we feel that our findings closely represent the population values. A gender balanced sample would have minimally increased the mean dmft score by 0·2 to 5·0 for 5-year-olds, and decreased the mean dmft score by 0·1 to 3·4 for 3-year-olds.

Fewer children residing in Wikwemikong participated in the study. Residents of Wikwemikong are

dispersed in many satellite communities over a large geographical area, some households were without telephones and many unreturned consent forms could not be followed up because no CHRs were available. A total of 10 children who were either a 3-year-old at home or a 5-year-old attending school off-reserve were not reached in this study. However, there were no important differences in all but one of our measures among 3- and 5-year-old children between Wikwemikong and the other communities so we feel exclusion of these children and the lower response rate in this community did not affect the results.

Wikwemikong, the largest reserve in the district is the only one where dental services are available on–reserve and so the children residing there were compared with children from all other communities combined. However, private dentists have offices in off-reserve communities that are equally as accessible for all First Nations communities. To the best of our knowledge, the dentist in Wikwemikong speaks English with his patients, and has similar dental qualifications and training to other dentists in the surrounding area. Although, we did not collect specific data for all children regarding location of their dentist, there did not appear to be a difference in dental health status with regards to ECC prevalence and numbers of caries-free boys between the two communities. Similarly, the treatment level was comparable between both groups.

We believe any bias arising from examiner reliability has been kept to a minimum. The standardized survey instrument measured only cavitated lesions and therefore is less subjective than those that include non-cavitated (d1) and cavitated (d2, d3) lesions. The present examiner has had extensive experience using this standardized survey instrument and was previously calibrated and participated in the national study (Leake JL (ed.). Oral health survey of Canada's Aboriginal children aged 6 and 12, 1990–91. Department of Community Dentistry, University of Toronto and National School of Dental Therapy, unpublished document, 1992) and was subsequently recalibrated for this study.

Recent investigations of the dental health status of young children in First Nations communities in Canada are limited. A 1987 survey of children on reserves in Saskatchewan reported a mean deft (decayed, extracted, filled deciduous teeth) score of 4·8 for 5-year-olds with 21·4% of children caries-free [20]. The 5-year-olds surveyed in 1988 on reserves in British Columbia had a mean deft of 7·5 with 12·5% of children caries-free [21]. A study of Inuit children in the Kativik region reported a mean dmft of 9·7 for 3-year-olds and 9·9 for 5-year-olds [8].

In the 1990–1991 national survey, 6-year-old Aboriginal children in Ontario had a mean DMFT+ deft score of 11·1, and in 1996–1997, the most recent national survey found this mean DMFT+ deft had increased to 11·7. This compares with a national average of 8·2 affected primary teeth for Aboriginal 6-year-olds. The 1990–1991 national survey also reported that 6-year-olds in M'Chigeeng (formerly West Bay) and Wikwemikong, both in the District of Manitoulin, had mean deft scores of 4·4 and 4·3, respectively (Leake JL op cit). Similarly, United States surveys of Native American children reported a trend towards slightly higher mean dmft scores of 4·5 and 6·6, and 5·1 and 4·9 in 3- and 5-year-old Navajo and Alaskan Native children, respectively [6,9]. In contrast, a 2000 survey of 5-year-old non-Aboriginal children in the Sudbury and District Health Unit, the region immediately adjacent to Manitoulin, found a mean dmft score of 1·45 (Survey of 5-year-olds, Sudbury District Health Unit, Ontario Ministry of Health, unpublished data, 2000).

Caution should be used when making comparisons among surveys because diagnostic criteria for caries and participant selection may be different. In this case, these standards were virtually the same for this, the 1996–1997 [23] and the 1990–1991 national surveys. Our findings of dmft = 3·5 at age 3 and dmft = 4·8 at age 5 places this population in somewhat better health than estimates of caries severity nationally for 6- and 12-year-olds, [22] in comparison to other available published data on 3- and 5-year-old First Nations children in British Columbia, Canada [7,21], Inuit children in the Kativik region [8] and Native American [11] children. Comparisons at the individual community level between the findings from the national survey in 1990–1991 and this 2000 survey demonstrate an increase in caries severity. The 5-year-olds included in this survey already have higher mean dmft scores than children 1 year older from the previous survey (Leake JL op cit).

The better oral health measures in this population, when compared to First Nations children in British Columbia, may be the result of participant selection. Children presenting for 'treatment planning' in British Columbia likely included more children with dental needs than in this population. Similarly, the

predominance of lower income families in the Native American studies could account for higher caries levels than are observed.

Behavioural and environmental factors, as well as socioeconomic status influence caries development in children [23,24]. Accordingly, the lower mean dmft scores in the Manitoulin District population may be the result of more accessible dental services, and/or higher socioeconomic levels or other factors not analysed for this report.

Prevalence estimates may also vary due to case definitions. Using our definition of ECC, we found a prevalence of 52%. We also used the definition of the National Institute of Dental and Craniofacial Research (NIDCR) [25]. The NIDCR definition classifies a child with 1 or more affected teeth as having ECC and in this higher risk population almost all children (74%) were classified as cases. Using the 'traditional' case definition limited to two or more affected primary maxillary anterior teeth (incisors and canines) only, this population has an ECC prevalence (38%) approximately 4 times that reported in the general population of 4-year-olds in the former city of North York, Ontario (Abbey P. A case-control study to determine the risk factors, markers and determinants for the development of nursing caries in the 4-year-old population of North York, 1999, unpublished Master's thesis, University of Toronto).

Other investigators studying children aged 3–5 years using an ECC case definition based on primary maxillary anterior teeth only, have reported ECC prevalence higher than this population; ranging from 53% to 70% [2,3,6]. In one study, however, a 1991 survey of 3-year-old dental patients by Indian Health Service (IHS) in the United States found an ECC prevalence of 23% [26]. As can be seen, inconsistent case definitions and diagnostic criteria for caries make direct comparisons among studies difficult. Taking account of all the available information, it appears our disease prevalence is mid-point for this age group.

We found that boys in both age groups were more likely to be affected by ECC; this observation has been previously reported in a study of children aged 2–5 years in the City of Zagreb, Croatia [27]. However, several studies of Aboriginal and non-Aboriginal children investigating gender as a factor influencing early childhood caries development did not find a significant difference [8,28–34].

Similarly, we found that boys in both age groups were more likely to be affected by dental caries, contrary to a previous study of Canadian Aboriginal children which found no difference between gender [21] and contrary to previous reports which show that females usually have more caries experience than males of the same age [35]. This observed gender difference was also found in a parallel study of surveyed 7- and 13-year-olds from this population [36]. The reason for more boys being affected by ECC and dental caries is not known at this time.

We found a greater proportion of teeth filled after age 3 indicating children are being brought to the dentist after this age but before the age of 5: the number of teeth filled more than doubled between the two age groups (1·2 vs. 3·0). Younger children present more behavioural problems in dental clinics and this could be another reason why the number of filled teeth in these children was lower compared to the older group. This trend has also been reported in the 1991 IHS survey in which 0–4-year-olds had a mean number of filled teeth of 0·9 but 5–9-year-olds had 2·6 filled teeth on average [26]. Furthermore, our recorded treatment levels (f/dmft) are higher than reported elsewhere in the literature [21,37].

In summary, our results indicate that dental caries and ECC are highly prevalent among these children. Children with ECC have high levels of treatment and additional unmet needs. First Nations children in the District of Manitoulin have mean dmft scores three times the level of non-Aboriginal children in approximately the same geographical area in Northern Ontario. Also, the trend to increasing severity of dental caries is alarming given the reduction in caries in the general population of American and Canadian children [38,39] and the completely insured access to dental care offered to First Nations people.

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Résumé. *Situation.* Les études épidémiologiques sur les communautés aborigènes du Canada et les populations natives d'Indiens des USA ont rapporté que les caries précoces de l'enfants (ECC) étaient hautement prévalentes. L'objectif de cette étude a été de déterminer la prévalence de l'ECC et des caries dentaires au sein des populations des Premières

Nations chez les enfants âgés de 3 à 5 ans du District de Manitoulin, Ontario pour aider au développement de stratégies efficaces de prévention bucco-dentaire.
Méthodes. Tous les enfants de 3 à 5 ans des écoles élémentaires et des crèches de sept communautés de Premières Nations ont été sélectionnés pour cette enquête. Les enfants de 3 ans vivant à la maison et ceux de 5 ans fréquentant la pré-école de six de ces communautés ont également été sélectionnés pour l'enquête épidémiologique sur l'état bucco-dentaire incluant les caries et l'état de la gencive et des tissus mous. Les cas de ECC ont été définis comme étant les enfants présentant des caries ou des restaurations sur au moins deux incisives ou canines maxillaires ou ceux ayant un score de caod de 4 ou plus.
Résultats. Au total, 87 enfants (59% âgés de 5 ans, 54% de filles) ont été examinés. Soixante-quatre pour cent des enfants avaient au moins une lésion carieuse. Quarante-cinq cas de ECC ont été trouvés, soit une prévalence de 52%. Le caod moyen pour les cas était de 7,5 (95% CI 6,5–8,4) et de 0,8 (95% CI 0,5–1,1) pour les non ECC ($p < 0{,}001$). Dans les deux groupes d'âge, les garçons étaient les affectés par l'ECC.
Conclusion. Nos résultats indiquent que les caries dentaires et l'ECC sont hautement prévalentes dans cette population, de nombreux cas d'ECC n'étant pas traités.

Zusammenfassung. *Hintergrund.* Epidemiologische Studien hatten eine erhöhte Prävalenz von frühkindlicher Karies (early childhood caries, ECC) bei Indianern in Kanada und den U.S.A. gezeigt. Ziel dieser Studie war es, die Prävalenz von Karies und ECC in einer Population von Dreijährigen und Fünfjährigen in sieben Gemeinden im District Manitoulin, Ontario, um daran mitzuwirken, verbesserte Strategien der Zahngesundheitsförderung zu entwickeln. Die Dreijährigen wurden zuhause und die Fünfjährigen in der Schule untersucht hinsichtlich Karies, Gingiva- und Weichgewebeverhältnisse. Fälle von ECC wurden definiert als Kinder mit Karies oder Restaurationen an zwei oder mehr Oberkiefer-Milchfrontzähnen sowie solche, die einen dmft-wert von 4 oder größer aufwiesen.
Ergebnisse. Insgesamt wurden 87 Kinder untersucht (59% Fünfjährige, 54% Mädchen). Vierundsiebzig Prozent der Kinder wiesen Karieserfahrung auf. Es wurden 45 Fälle von ECC identifiziert, dies entspricht einer Prävalenz von 52%. Der mittlere dmft-Wert für diese Fälle lag bei 7.5 (95% CI 6.5–8.4) und bei 0.8 für die übrigen Kinder (95% CI 0.5–1.1, $p < 0.001$). Jungen waren in beiden Altersgruppen häufiger von ECC betroffen.
Schlussfolgerungen. Unsere Ergebnisse zeigen, dass ECC in der untersuchten Population eine hohe Prävalenz aufweist mit einem hohen Behandlungsbedarf in betroffenen Fällen.

Resumen. *Antecedentes.* Estudios epidemiológicos de comunidades de Aborígenes en Canadà y Americanos Nativos en Estados Unidos han señalado que la CNP tiene una alta prevalencia. La propuesta de este estudio fue determinar la prevalencia de la caries del niño pequeño (CNP) y la caries dental en la población de las Primeras Naciones entre 3 y 5 años en el distrito de Manitoulin, Ontario para ayudar en el desarrollo de estrategias efectivas en la promoción de la salud dental.
Métodos. Se eligieron para el examen todos los niños entre 3 y 5 años de escuelas elementales y centros de cuidados de día en siete comunidades de la Primera Nación. También se eligieron en seis de las comunidades, niños de tres años en sus casas y niños de 5 años en la escuela fuera de la reserva, para el examen epidemiológico de la salud oral que incluía caries, estado gingival y de los tejidos blandos. Los casos de CNP se definieron como niños con caries o restauraciones en dos o más incisivos deciduos superiores o caninos teniendo un índice total de caries, ausencia y obturación en los dientes temporales (caod) de 4 ó más.
Resultados. Se examinaron un total de 87 niños (59% de 5 años, 54% niñas). El 74% de los niños tenían una o más lesiones de caries. Se encontraron 45 casos de CNP, con una prevalencia del 52%. El índice medio caod para los casos fue 7,5 (95% IC 6,5–8,4) y 0.8 para los no considerados casos (95% IC 0,5–1,1) ($p < 0{,}001$). Los niños en ambos grupos de edad tenían más probabilidad de estar afectados por CNP.
Conclusión. Nuestros resultados indican que la caries dental y la CNP son de alta prevalencia en esta población, estos casos de CNP conllevan altas prestaciones en el tratamiento y necesidades no resueltas.

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