Between a rock and a hard place: Smoking trends in a Manitoba First Nation

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ABSTRACT

OBJECTIVES: The purpose of this study is to estimate and compare smoking prevalence over two time periods in a Manitoba First Nation community.

METHODS: Data from two independent Diabetes Screening Studies in Sandy Bay First Nation, collected in 2002/2003 ($n = 482$) and 2011/2012 ($n = 596$), were used. Crude prevalence of current and ever smoking as well as current smoke exposure was estimated. Change over time was tested using a χ^2 statistic.

RESULTS: The crude prevalence of current smoking was 74.0% (95% confidence interval [CI]: 70.1, 78.0) in 2002/2003 and 80.0% (95% CI: 76.8, 83.2) in 2011/2012. The crude prevalence of ever smoking was 83.0% in 2002/2003 and 91.4% in 2011/2012. The prevalence of both current smoking status and ever smoking were significantly higher in 2011/2012 compared to 2002/2003 ($p = 0.020$ and $p < 0.001$ respectively). Among participants who were not current smokers, 58.5% (95% CI: 49.6, 67.4) and 76.5% (95% CI: 68.9, 84.1) reported at least one person who smoked in the home in 2002/2003 and 2011/2012 respectively ($p = 0.003$). In 2011/2012, 96.5% (95% CI: 94.8, 98.2) of those who reported having any children under the age of 18 living in the home were either a current smoker and/or reported that someone else smoked in the home.

CONCLUSION: Public health and policy initiatives are needed to address the increase in smoking prevalence in the study community.

KEY WORDS: Smoking; First Nation; Aboriginal; community-based participatory research; sovereignty

La traduction du résumé se trouve à la fin de l'article.

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The harmful effects of smoking are well established and include damage to cardiovascular, respiratory and metabolic systems and development of certain cancers.[1–4] In the general populations of the United States and Canada, prevalence of smoking has decreased substantially since the 1970s and smoking initiation has also dropped.[5–7] Though some challenges remain, including flavoured tobacco products and the increasing popularity of smokeless tobacco options like e-cigarettes and chewing tobacco, strong public health efforts have contributed to decreases in smoking prevalence and initiation.

Smoking continues to be a major health issue among some populations. Indeed, significant disparities in prevalence and initiation are found among some population groups, including those in lower socio-economic strata and some marginalized populations.[7,8] In Canada, one population group for which a disparity in smoking remains is First Nations. While there has been an overall decrease in smoking prevalence among Canadian Aboriginal populations,[1] including First Nations, the Canadian Aboriginal population has a smoking prevalence that is three times higher than the general Canadian population.[1] There is also a higher burden of smoking-related conditions in First Nations populations, such as diabetes, cardiovascular disease, and diabetes-related neuropathy.[3,4,9–11] Although there are other contributing factors to the chronic disease burden among First Nations, smoking must be considered one of the major ones.

The purposes of this paper are to estimate and compare smoking prevalence over two time periods in Sandy Bay Ojibway First Nation as well as estimate second-hand smoke exposure among adults, children and youth, and age of smoking initiation. The community with which we partner has a disproportionate burden of smoking-related chronic disease compared to the general population,[10–13] and this study aims to examine one particular risk factor, smoking, that can be targeted through policy.

MATERIALS AND METHODS

Setting

The study community is Sandy Bay Ojibway First Nation, located in southwest Manitoba, Canada. The nearest large urban centre is Winnipeg, nearly 200 km away, and the community is accessible year round by road. The total on-reserve population in 2011 was

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approximately 4100 people, 50% of whom were under 19 years of age.

Design

Data from the 2002/2003 Diabetes Screening Study were included as a baseline sample for the repeated cross-sectional design. Detail regarding the 2002/2003 screening study can be found elsewhere.[11] The second cross-sectional study (2011/2012) occurred between July 2011 and June 2012 and has also been previously described.[10] Both studies were approved by the University of Manitoba Health Research Ethics Board.

Sampling

All adults ≥18 years of age and non-pregnant were invited to participate in both study periods (convenience samples). A random sampling strategy was not considered acceptable to the study community. Inclusion criteria were: a registered member of Sandy Bay First Nation or a registered member of another First Nation but living in Sandy Bay. A total of 482 community members participated in 2002/2003 or 44% of the eligible population. The sample was representative of the community at the time of data collection according to age, sex and employment status.[11] The 2011/2012 sample recruited 596 participants, representing 28% of the eligible population. We have previously reported that the sample is also representative of the population according to age and sex, based on age and sex distributions of the community population.[10] Overall, 171 participants were included in both samples. We attempted to follow up with previous participants from 2002/2003 as well as recruit new participants in 2011/2012. Participants from 2002/2003 not included in the 2011/2012 sample were those who either declined to participate or had passed away, or who we were unable to locate.

Outcomes

The main outcomes were current smoking status, ex-smoking status (among ever smokers), and number of cigarettes smoked per day (among current smokers). Current smoking includes occasional smokers. Ex-smoking status was determined based on a positive response to ever-smoking status and negative response to current smoking status. Secondary outcomes were the proportion of non-smoking participants who report presence of smokers in the home other than themselves and the proportion among those with any children <18 years old in the home. Adults were asked about number of children in the home; multiple adults from one home may have been surveyed, therefore a home with children was likely counted multiple times. This proportion is therefore not an estimate of number of children exposed to smoke in the home but rather a crude indicator of the potential burden of smoke exposure among children. Another secondary outcome was the age at which participants currently 18–29 years old started smoking, which was determined by subtracting the number of years they reported smoking from their age. This assumes no significant time period of smoking cessation.

Statistical analysis

The study samples were described on age, sex, education, employment (either part-time or full-time), marital status, and fluency in an Aboriginal language using frequencies and percentages. Overall crude and sex- and age-specific prevalence (95% confidence interval) of current smoking, second-hand smoke exposure, and no exposure was estimated for each time period. Among ever-smokers, the prevalence of ex-smoking status was estimated. The proportion of respondents who were current smokers or who were exposed to cigarette smoke at home and who had any children <18 years old in the home was reported. Age groups were categorized as: 18–29, 30–39, 40–49, and 50 years and older. Median number of cigarettes smoked per day was reported for current smokers as well as categorized into tertiles. Mean age of smoking initiation was estimated for respondents who were 18–29 years old at the time of each survey.

Differences between time periods were tested using chi-square statistics for categorical variables, t-tests for continuous variables, and non-parametric tests for skewed variable (i.e. number of cigarettes smoked per day). A generalized linear model with random intercept was initially fit to the data to test for differences over time; however this model did not converge, indicating that the amount of dependence was too minimal to adopt a parametric model for clustered data. For all estimates, 95% confidence intervals were computed. All statistical analyses were conducted using the current version of SPSS (version 22). Statistical significance was set at $\alpha = 0.05$.

RESULTS

There were a total of 482 participants in the 2002/2003 sample and 596 participants in the 2011/2012 sample. Both samples have been described in Table 1. The 2011/2012 sample is significantly younger ($p = 0.001$) but has similar proportions of men and women ($p = 0.131$). There was a significantly lower proportion of respondents who reported speaking an Aboriginal language fluently and who were employed in 2011/2012 compared to 2002/2003 ($p < 0.001$ and $p = 0.002$). There was also a significantly higher proportion of respondents with highest level

Table 1. Description of the study samples (*n* (%))

	2002/2003 (*n* = 482)	2011/2012 (*n* = 596)	*p*-value†
Sex			
Men	230 (47.7)	313 (52.5)	0.117
Women	252 (52.3)	283 (47.5)	
Age group, years			
18–29	142 (29.5)	237 (39.8)	0.001
30–39	144 (29.9)	127 (21.3)	
40–49	108 (22.4)	134 (22.5)	
≥50	88 (18.3)	98 (16.4)	
Highest level of education			
< grade 9*	248 (53.0)	159 (27.2)	<0.001
≥ grade 9	220 (47.0)	426 (72.8)	
Employed			
Yes	137 (28.8)	123 (20.6)	0.002
No	338 (71.2)	473 (79.4)	
Marital status			
Never married	184 (39.3)	189 (36.1)	0.070
Married/common-law	255 (54.5)	281 (53.7)	
Separated/divorced/widow/ widower	29 (6.2)	53 (10.1)	
Speak an Aboriginal language fluently			
Yes	407 (86.2)	382 (64.1)	<0.001
No	65 (13.8)	214 (35.9)	

* Based on median split in 2003 sample.
† Based on χ^2 test.

of education > grade 9 in 2011/2012 compared to 2002/2003 ($p < 0.001$).

The crude prevalence of current smoking was 74.0% (95% CI: 70.1, 78.0) in 2002/2003 and 80.0% (95% CI: 76.8, 83.2) in 2011/2012. The crude prevalence of current smoking was significantly higher in 2011/2012 compared to 2002/2003 according to χ^2-test ($p = 0.020$). A sex-stratified analysis indicated that smoking prevalence increased significantly among men ($p = 0.015$) but not among women ($p = 0.394$). The sex- and age-specific prevalences of current smoking in both time periods are illustrated in Figure 1. The largest increase in prevalence of smoking between time periods was seen in the 50+ age group. Among men in this age group, the crude prevalence increased from 60.5% to 77.6%, and among women, from 50.0% to 67.3%. The highest increase in any other age and sex group was among men aged 18–29 years, where the crude prevalence of current smoking went from 73.6% to 83.7%. While there was variability in the change in prevalence over time among the age and sex groups, none of these differences were statistically significant.

Among ever-smokers, prevalence of ex-smoking status ranged from 9–13% among men and women in both time periods (Table 2). Crude prevalence of ex-smoking was not significantly different between time periods ($p = 0.424$). Among current smokers, there was not a significant difference in number of cigarettes smoked per day between time periods according to tertiles ($p = 0.595$) or medians (men: $p = 0.299$; women: $p = 0.637$) (Table 2). The number of cigarettes smoked per day according to tertiles also did not differ between the sexes in either time period (2002/2003 $p = 0.394$; 2011/2012 $p = 0.897$).

Among participants who were not current smokers, 58.5% (95% CI: 49.6, 67.4) and 76.5% (95% CI: 68.9, 84.1) reported at least one person who smoked in the home in 2002/2003 and 2011/2012 respectively ($p = 0.003$). In other words, only 11.4% and 4.7% of the samples were not current smokers and were also not exposed to second-hand smoke in the home in 2002/2003 and 2011/2012 respectively. In 2011/2012, among those who reported having any children under the age of 18 living in the home, 96.5% (95% CI: 94.8, 98.2) were current smokers and/or reported that someone else smoked in the home.

Among current smokers 18–29 years old, the average age that they started smoking was not significantly younger in 2011/2012 compared to 2002/2003 (independent sample t-test; $p = 0.203$). Among those 18–29 years old, the mean age reported at which they started smoking was 16.1 (SD: 3.36) years old in 2002/2003 compared to 15.6 (SD: 2.85) years old in 2011/2012.

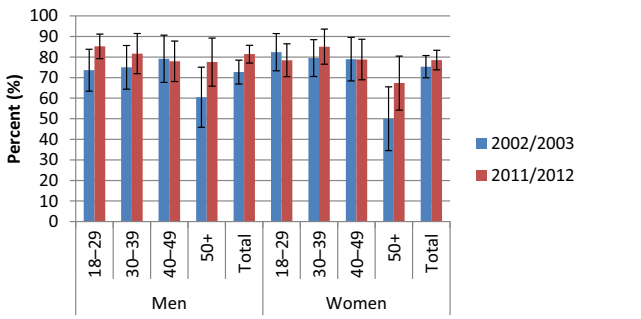

Figure 1. Sex- and age-specific prevalence of current smoking status in each time period
Error bars denote 95% confidence intervals

DISCUSSION

The proportion of current smokers in the study community in 2011 (80.0%) was considerably higher than the Canadian prevalence (19.9%).[5] Similarly, the proportion of current smokers in 2002/2003, at 74.0%, was higher compared to the general First Nations population in 2002. According to the Assembly of Manitoba Chiefs' review of the First Nations Regional Longitudinal Health Survey, 62.4% of First Nation adults are current smokers, including occasional smokers.[14] Community-specific data from Sandy Lake First Nation, Ontario indicated that 82% of youth aged 15–19 were current smokers (data collected between 1993 and 1995).[4] This prevalence is similar to the prevalence reported here for those 18–29 years old at 85.2% and 78.4% for men and women respectively in 2011/2012.

Godel and colleagues[1] reported that the smoking prevalence is slowly decreasing among the Canadian Aboriginal population. It must be noted that their conclusion was drawn from multiple studies completed during an earlier time period and across various First Nations/Aboriginal groups. In contrast, the crude prevalence of current smoking was significantly higher in 2011/2012 compared to 2002/2003 in the study community. The largest increase in prevalence of smoking was seen in the 50+ age group. This increase in current smoking prevalence was likely partly driven by a cohort effect; that is, those previously in the 40–49 year age group in 2002/2003 have now moved into the 50+ age range, along with their high smoking prevalence. A second driving force behind this increase in prevalence of current smoking appears to be an increased number of young men beginning smoking. In addition, other research has shown that over half of smokers on-reserve start smoking between the ages of 13 and 16,[15] which is similar to the age of initiation reported here. Therefore, the increase in smoking prevalence is likely not driven by individuals over 18 years old who have now started smoking.

The increase in smoking may be due to increased social pressures to smoke. Others have shown that while parent and sibling smoking were not associated with youth smoking, having friends who smoked was.[16] Similarly, the presence of another smoker in the home was the strongest risk factor identified for current smoking among Manitoba First Nations pregnant women.[17] A qualitative study among BC First Nation women also reported that smoking has an important social dimension, which increases the pressure to smoke.[18] Specifically, Bingo halls were identified as a social gathering, which promoted group smoking.[19] Similarly, authors of a qualitative study including Australian Aboriginal women reported social networks and the normalization of smoking within these networks as a major theme in the initiation of smoking in this population.[20] Although this discussion is based on results from other Indigenous communities, which may not be applicable to the study community, these results highlight the potential 'double-edged sword' role for possible relations between tobacco use and social cohesion and social relationships among First Nations communities.

Table 2. Crude prevalence (95% confidence interval) of smoking-related behaviours in a Canadian First Nation community

	2002/2003		2011/2012	
	Men	**Women**	**Men**	**Women**
Current smoker	72.7 (66.9, 78.5)	75.3 (69.9, 80.7)	81.4 (77.1, 85.7)	78.5 (73.7, 83.3)
Ex-smoker*	8.8 (4.7, 13.0)	12.5 (8.0, 17.0)	11.8 (8.1, 15.5)	13.3 (9.1, 17.4)
Number of cigarettes smoked/day†				
≤5 per day	25.8 (19.1, 32.5)	30.1 (23.4, 36.7)	27.1 (21.6, 32.5)	32.1 (26.0, 38.3)
6–11 per day	28.2 (21.3, 35.1)	34.4 (27.5, 41.3)	33.3 (27.5, 39.1)	33.9 (27.7, 40.2)
>11 per day	46.0 (38.4, 53.7)	35.5 (28.6, 42.5)	39.6 (33.6, 45.6)	33.9 (27.7, 40.2)
Median (IQR)	10.0 (5.0, 15.0)	10.0 (5.0, 12.0)	10.0 (5.0, 12.0)	8.0 (5.0, 12.0)

* Among ever-smokers.
† Among current smokers.

Lemstra and colleagues[16] report that smoking youth in a Saskatchewan First Nation were more likely to report stress as a reason to start smoking compared to non-smoking youth. Previous qualitative research in the current study community also indicates stress as a major contributor to smoking (unpublished data). In addition, qualitative data from a nutrition study recently completed with this study community suggest smoking may be used as a coping strategy for dealing with hunger and food insecurity (unpublished data). Therefore, beyond addiction, these factors must also be taken into account when attempting to address smoking rates in the community.

Policy strategies employed in the general population, such as media campaigns, smoking cessation services, community awareness initiatives, smoke-free spaces, litigation, and taxation of tobacco products, have proven effective in reducing population smoking rates.[21,22] However, in Canada as well as other developed countries, smoking rates have decreased over time to a much greater extent among those with higher levels of education compared to those with less education.[6–8] Recently, Dwyer-Lindgren and colleagues[7] also report the persistence of higher rates of smoking among American counties with large Native American populations. These results indicate that the previously mentioned policy strategies have been much less effective in low socio-economic groups, including indigenous populations. This difference in effectiveness of policy interventions targeting smoking may be responsible for increasing or maintaining the health equity gap. In this regard, Tjepkema and colleagues[23] have recently reported disease-specific variation in the association between measures of socio-economic status and age-standardized mortality rates of various causes of death. Many of the largest gaps were for causes of death closely associated with smoking, such as chronic obstructive pulmonary disease, diabetes, ischemic heart disease, and lung cancer.

Another important consideration in the discussion regarding smoking among First Nations is the issue of sovereignty. Tobacco sales are an important contributor to some First Nations economies and a source of self-determination. Also, most of the previously listed policies are not in effect on-reserve due to jurisdictional differences with regard to tobacco. Tobacco products are exempt from taxation on-reserve, making the average cost for a carton of cigarettes sold on-reserve to a First Nation person 44% less compared to a carton purchased off-reserve. According to Bill C–93, First Nation communities have the authority to tax tobacco products sold to First Nation and non-First Nation people.[22] However, as reported by the Canadian Revenue Agency in 2006, fewer than 2% of bands tax tobacco.[22] A detailed commentary on the implementation, benefits and challenges of a tobacco tax in a First Nation community has previously been reported.[22] However, what is not discussed by Samji and Wardman is the close geographical proximity between some First Nation communities, particularly for the study community, which suggests that individual community laws would be ineffective. Additionally, Wardman and Khan[24] suggest that tobacco taxation may not be culturally appropriate for First Nation communities and the effectiveness of tobacco taxation on smoking rates in First Nation communities has not been investigated. For any policy to be effective, there must be agreement by more than individual First Nation communities. Policies to address smoking on-reserve must also acknowledge and allow for the important traditional use of tobacco for First Nations people.

While we do not report the proportion of children exposed to smoke in the home directly, our results indicate a high burden of exposure. The proportion of children exposed to household second-hand smoke is likely less than the 96% estimated here because we surveyed multiple adults per household as compared to children directly; nevertheless, the exposure prevalence is still very high. Smoke exposure among children in the community is concerning for three reasons: second-hand smoke, role modeling of smoking, and increased access. The dangers of second-hand smoke for children have been well documented.[25,26] In 2008, a law was instituted in Manitoba that prohibited anyone from smoking tobacco in a motor vehicle with children under the age of 16.[27] As of 2010, seven Canadian provinces and territories have enacted similar laws protecting children from tobacco smoke in motor vehicles.[26] However, children are not protected in the home, which further increases the likelihood that children will take up smoking during their youth. This combined with the decreasing smoking rate among the general Canadian population suggests that the health equity gap will further increase for smoking-related diseases between First Nations and non-First Nations populations.

There are several important strengths and limitations of the study. First, in keeping with the community-based participatory framework, the researcher team will continue to work with the community to translate the findings and support policy changes at the community level. Second, this study provides a rich description of changes with regard to an important public health-related behaviour in this population. With respect to limitations, data for smoke exposure among children were not

collected in 2002/2003. Issues of sample dependence may also be considered a limitation as well as representativeness of the study samples. The study was limited by the convenience sampling strategy; however, our community partners agree that the results reflect their perceptions of community socio-demographic distributions and smoking behaviours. Finally, there may be limited external generalizability to other Canadian First Nations communities. However, it has recently been reported using the Manitoba First Nations Regional Health Survey, that smoking among pregnant First Nations women in Manitoba has also increased from 1997/98 to 2008/2010.[17] Therefore, the rise in current smoking in this community may reflect increasing rates in other First Nation communities in Manitoba as well.

In conclusion, culturally appropriate public health and policy initiatives are needed to address the burden of smoking in the First Nations population. These efforts must be led by First Nations in partnership with public health agencies and other government organizations. This research also indicates that smoke exposure among non-smokers has significantly increased and modeling of smoking to children is high, which does not give rise to optimistic expectations for lowered smoking prevalence or reductions in the health equity gap in the near future.

REFERENCES

1. Godel J. Use and misuse of tobacco among aboriginal peoples - update 2006. *Paediatr Child Health* 2006;11(10):681–92.
2. Houston TK, Kiefe CI, Person SD, Pletcher MJ, Liu K, Iribarren C. Active and passive smoking and development of glucose intolerance among young adults in a prospective cohort: CARDIA study. *BMJ* 2006;332(7549):1064–69. PMID: 16603565.
3. Ley SH, Hegele RA, Harris SB, Mamakeesick M, Cao H, Connelly PW, et al. HNF1A G319S variant, active cigarette smoking and incident type 2 diabetes in Aboriginal Canadians: A population-based epidemiological study. *BMC Med Gen* 2011;12:1. PMID: 21208426. doi: 10.1186/1471-2350-12-1.
4. Retnakaran R, Hanley AJ, Connelly PW, Harris SB, Zinman B. Cigarette smoking and cardiovascular risk factors among Aboriginal Canadian youths. *CMAJ* 2005;173:885–89. PMID: 16217111. doi: 10.1503/cmaj.045159.
5. Janz T. *Current Smoking Trends. Health at a Glance.* Statistics Canada Catalogue no. 82-624-X. Date modified, June 19, 2012. Available at: http://www.statcan.gc.ca/pub/82-624-x/2012001/article/11676-eng.htm (Accessed March 6, 2014).
6. Pierce JP. International comparisons of trends in cigarette smoking prevalence. *Am J Public Health* 1989;79:152–57. PMID: 2913832.
7. Dwyer-Lindgren L, Mokdad AH, Srebotnjak T, Flaxman AD, Hansen GM, Murray CJL. Cigarette smoking prevalence in US counties: 1996-2012. *Popul Health Metr* 2014;12:5. PMID: 24661401. doi: 10.1186/1478-7954-12-5.
8. Smith P, Frank J, Mustard C. Trends in educational inequalities in smoking and physical activity in Canada: 1974-2005. *J Epidemiol Community Health* 2009;63:317–23. PMID: 19147632. doi: 10.1136/jech.2008.078204.
9. Tjepkema M, Wilkins R, Goedhuis N, Pennock J. Cardiovascular disease mortality among First Nations people in Canada, 1991-2001. *Chronic Dis Inj Can* 2012;32:200–7. PMID: 23046802.
10. Riediger ND, Lix LM, Lukianchuk V, Bruce S. Trends in diabetes and cardiometabolic conditions in a Canadian First Nation community. *Prev Chronic Dis* 2014;11(E198):1–8. PMID: 25393746. doi: 10.5888/pcd11.140334.
11. Bruce SG, Young TK. Prevalence and risk factors for neuropathy in a Canadian First Nation community. *Diabetes Care* 2008;31(9):1837–41. PMID: 18509208. doi: 10.2337/dc08-0278.
12. Bruce SG, Riediger ND, Zacharias JM, Young TK. Obesity and obesity-related co-morbidity in a Canadian First Nation population. *Prev Chronic Dis* 2011; 8:A03.
13. Riediger ND, Bruce SG, Young TK. Cardiovascular risk according to plasma apolipoprotein and lipid profile in a Canadian First Nation. *Prev Chronic Dis* 2011;9(1):A05. PMID: 21159217.
14. AMC Health Information Research and Governance Committee (HIRGC), Elias B, LaPlante J. *Manitoba First Nations Regional Longitudinal Health Survey (RHS) Report (2002/03).* 2006. Available at: http://amc.manitobachiefs.com/images/pdf/mb_fns_rhs_report_2002_03.pdf (Accessed November 18, 2013).
15. Health Canada. *First Nations & Inuit Health – Tobacco.* Date last updated, July 19, 2011. Available at: http://www.hc-sc.gc.ca/fniah-spnia/substan/tobac-tabac/index-eng.php (Accessed February 4, 2014).
16. Lemstra M, Rogers M, Thompson A, Moraros J, Tempier R. Prevalence and risk indicators of smoking among on-reserve First Nations youth. *Pediatr Child Health* 2011;16(10):e71–77. PMID: 23204910.
17. Phillips-Beck W. Want pregnant moms to stop smoking? Create a smoke free home and a supportive environment: Smoking in pregnancy in the context of First Nation Communities in Manitoba. Poster presented at the International Network for Indigenous Health Knowledge & Development Conference, October 5–10, 2014. Winnipeg, MB.
18. Bottorff JL, Johnson JL, Carey J, Hutchinson P, Sullivan D, Mowatt R, et al. A family affair: Aboriginal women's efforts to limit second-hand smoke exposure at home. *Can J Public Health* 2010;101(1):32–35. PMID: 20364535.
19. Bottorff JL, Carey J, Mowatt R, Varcoe C, Johnson JL, Hutchinson P, et al. Bingo halls and smoking: Perspectives of First Nations women. *Health Place* 2009;15(4):1014–21. PMID: 19482540. doi: 10.1016/j.healthplace.2009.04.005.
20. Passey ME, Gale JT, Sanson-Fisher RW. "It's almost expected": Rural Australian Aboriginal women's reflections on smoking initiation and maintenance: A qualitative study. *BMC Women's Health* 2011;11:55. PMID: 22152218. doi: 10.1186/1472-6874-11-55.
21. Corsi DJ, Lear SA, Chow CK, Subramanian SV, Boyle MH, Teo KK. Socioeconomic and geographic patterning of smoking behavior in Canada: A cross-sectional multi-level analysis. *PLoS One* 2013;8:e57646. PMID: 23469038.
22. Samji H, Wardman D. First Nations communities and tobacco taxation: A commentary. *Am Indian Alsk Native Ment Health Res* 2009;16(2):1–10. PMID: 19639542.
23. Tjepkema M, Wilkins R, Long A. Socio-economic inequalities in cause-specific mortality: A 16-year follow-up study. *Can J Public Health* 2013;104: e472–78. PMID: 24495823.
24. Wardman D, Khan NA. Registered Indians and tobacco taxation: A culturally-appropriate strategy? *Can J Public Health* 2005;96(6):451–53. PMID: 16350872.
25. US Department of Health and Human Services, Centers for Disease Control and Prevention. *Surgeon General's Report—The Health Consequences of Involuntary Exposure to Tobacco Smoke.* 2006. Available at: http://www.cdc.gov/tobacco/data_statistics/sgr/2006/index.htm (Accessed December 8, 2013).
26. Exposure to second hand smoke in vehicles, Canada, 2009. *Tobacco Use in Canada: Findings from the CCHS.* Physicians for a Smoke-free Canada. June 2010. Available at: http://www.smoke-free.ca/factsheets/pdf/cchs/Canada-2009-shs-vehicles.pdf (Accessed February 28, 2014).
27. Bill 5. *3rd Session, 39th Legislature, Manitoba, 57 Elizabeth II,* 2008. Available at: http://web2.gov.mb.ca/bills/39-3/pdf/b005.pdf (Accessed February 28, 2014).

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RÉSUMÉ

OBJECTIFS : L'objectif de l'étude est d'estimer et de comparer la prévalence de la cigarette pendant deux périodes dans une collectivité des Premières Nations au Manitoba.

MÉTHODES : Ce sont les données de deux Enquêtes sur le dépistage du diabète dans la Première Nation de Sandy Bay recueillies en 2002–2003 (n=482) et en 2011–2012 (n=596) qui ont servi. On a estimé la prévalence brute de la cigarette actuelle et jusqu'aujourd'hui de même que l'exposition actuelle à la fumée. Le changement au fil du temps a été testé au moyen de la statistique χ^2.

RÉSULTATS : La prévalence brute actuelle de la cigarette était de 74,0 % (intervalle de confiance [IC] de 95 % : 70,1, 78,0) en 2002–2003 et de 80,0 % (IC de 95 % : 76,8, 83,2) en 2011–2012. La prévalence brute de la cigarette jusqu'aujourd'hui était de 83,0 % en 2002–2003 et de 91,4 % en 2011–2012. La prévalence de la cigarette actuelle et jusqu'aujourd'hui était sensiblement supérieure en 2011–2012 par rapport à 2002–2003 (p = 0,020 et $p < 0,001$ respectivement). Parmi les participants qui ne fumaient pas à ce moment, 58,5 % (IC de 95 % : 49,6, 67,4) et 76,5 % (IC de 95 % : 68,9, 84,1) ont déclaré qu'au moins une personne fumait au foyer en 2002–2003 et en 2011–2012 respectivement (p = 0,003). En 2011–2012, 96,5 % (IC de 95 % : 94,8, 98,2) de ceux qui déclaraient avoir un enfant de moins de 18 ans qui vivait au foyer fumaient ou déclaraient que quelqu'un fumait au foyer, ou les deux.

CONCLUSION : Des initiatives de santé publique ou politiques sont essentielles pour traiter la prévalence accrue de la cigarette dans la collectivité de l'étude.

MOTS CLÉS : cigarette; Première Nation; autochtone; recherche participative axée sur la collectivité; souveraineté