Knowledge, attitudes and behaviours related to dietary sodium among 35- to 50-year-old Ontario residents

Sophia Papadakis PhD(c) MHA[1], Andrew L Pipe CM MD[1], Isabella A Moroz PhD[1], Robert D Reid PhD MBA[1], Christopher M Blanchard PhD[2], Danielle F Cote APR[1], Amy E Mark PhD[1]

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BACKGROUND: Excessive consumption of dietary sodium is an important public health issue. Little is known about the knowledge, attitudes and behaviours related to sodium consumption among Canadians.
OBJECTIVE: To examine knowledge, attitudes and behaviours related to sodium consumption among a sample of Canadians 35 to 50 years of age.
METHODS: A random-digit-dial telephone survey was conducted among adults aged 35 to 50 years of age in two regions in Ontario. Logistic regression was used to examine the likelihood of having taken action in the past 30 days to reduce sodium consumption, and the likelihood that respondents were intending to reduce sodium in the next six months.
RESULTS: A total of 3130 interviews were completed. The majority of respondents were aware of excessive sodium consumption as a health issue and reported that they were taking action to reduce their dietary sodium intake. A large proportion of respondents did not correctly identify many foods as being high in sodium and, consequently, may have incorrectly believed they were consuming healthy amounts of sodium. Respondents who believed sodium reduction was important were more likely to have taken action to reduce sodium within the previous 30 days. Respondents who self-identified as consuming too much sodium were less likely to have taken action.
CONCLUSIONS: The findings of the present study suggest that in addition to policy changes designed to reduce the sodium content of foods, there is a need to address the low levels of knowledge surrounding sources of excessive sodium in popular Canadian foods, the importance of a reduced intake of sodium and the availability of lower-sodium alternatives.

Key Words: *Attitudes; Behaviours; Hypertension; Intentions; Knowledge; Prevention; Self-efficacy; Sodium*

Les connaissances, les attitudes et les comportements liés au sodium alimentaire chez des habitants de l'Ontario de 35 à 50 ans

HISTORIQUE : La consommation excessive de sodium alimentaire constitue un important problème de santé publique. On ne sait pas grand-chose des connaissances, des attitudes et des comportements liés à la consommation de sodium chez les Canadiens.
OBJECTIF : Examiner les connaissances, les attitudes et les comportements liés à la consommation de sodium au sein d'un échantillon de Canadiens de 35 à 50 ans.
MÉTHODOLOGIE : Les chercheurs ont mené une enquête téléphonique clinique à composition aléatoire auprès d'adultes de 35 à 50 ans dans deux régions de l'Ontario. La régression logistique a permis d'examiner la possibilité d'avoir pris des mesures au cours des 30 jours précédents pour réduire la consommation de sodium et la possibilité que les répondants aient l'intention de réduire leur consommation au cours des six mois suivants.
RÉSULTATS : Au total, 3 130 entrevues ont été exécutées. La majorité des répondants savaient que la consommation excessive de sodium constitue un problème de santé et déclaraient prendre des mesures pour en réduire leur consommation. Une forte proportion de répondants ne distinguaient pas correctement de nombreux aliments comme riches en sodium et, par conséquent, pensaient peut-être à tort en consommer de saines quantités. Les répondants qui trouvaient la réduction de sodium importante étaient plus susceptibles d'avoir pris des mesures pour en réduire leur consommation depuis les 30 derniers jours. Les répondants qui déclaraient eux-mêmes consommer trop de sodium étaient moins susceptibles d'avoir pris des mesures.
CONCLUSIONS : D'après les résultats de la présente étude, en plus des modifications aux politiques conçues pour réduire le contenu en sodium des aliments, il faut réagir au peu de connaissances entourant les sources excessives de sodium dans les aliments populaires au Canada, l'importance d'une consommation réduite de sodium et la disponibilité de produits plus pauvres en sodium.

One-quarter of Canadians are known to have hypertension and it is estimated that more than 90% of those 55 to 65 years of age with normal blood pressure will develop hypertension during their lifespan (1,2). A recent meta-analysis (3) based on 19 cohort samples found that higher salt intake was associated with greater risk of stroke (pooled RR 1.23, 95% CI 1.06 to 1.43; P=0.007) and cardiovascular disease (pooled RR 1.14, 95% CI 0.99 to 1.32; P=0.07). Given the mounting evidence, the World Health Organization and many public health authorities have called for a reduction in dietary sodium intake as a key strategy for reducing high blood pressure and cardiovascular disease (4-6).

National data indicate that Canadians consume, on average, 3100 mg of sodium per day, excluding salt that is added to food – this is more than twice the recommended amount of 1200 mg/day to 1500 mg/day (7,8). It has been estimated that reducing dietary sodium by 1840 mg/day (approximately one teaspoon of table salt per day) would produce a population-wide 5 mmHg to 6 mmHg reduction in systolic blood pressure and decrease the prevalence of hypertension in Canada by 30% (9). The primary sources of dietary sodium in the Canadian diet are processed foods (77%), with salt added to foods at the table or in cooking accounting for an estimated 11% of sodium intake (8). Strategies to influence dietary sodium consumption include

[1]*Minto Prevention and Rehabilitation Centre, University of Ottawa Heart Institute, Ottawa, Ontario;* [2]*Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia*
Correspondence and reprints: Dr Sophia Papadakis, Minto Prevention and Rehabilitation Centre, H2358, University of Ottawa Heart Institute, 40 Ruskin Street, Ottawa, Ontario K1Y 4W7. Telephone 613-761-5489, fax 613-761-5336, e-mail spapadakis@ottawaheart.ca
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TABLE 1
Sociodemographic characteristics of the two health regions sampled, as well as Ontario and Canada

Variable	Champlain LHIN	South West LHIN	Ontario	Canada
Total population (2006)*, n	1,147,209	901,123	12,160,282	31,612,897
Population 35 to 50 years of age (2006)*, n	276,920	199,495	2,908,375	7,439,320
Urban population†, %	79.4	71.5	85.1	80.2
Male sex (2006)*, %	48.6	48.9	48.8	49.0
Population who are immigrants (2006)†, %	17.6	14.8	28.3	19.8
Labour force participation rate, age 15 years or older (2006)*, %	68.6	67.5	67.3	66.8
Unemployment rate, age 15 years or older (2008)†, %	5.0	6.2	6.5	6.1
Low income†, %	13.8	11.1	14.7	15.3
Population who did not graduate high school, age 25 to 29 years (2006)†, %	8.2	14.5	10.3	13.3
Postsecondary graduates, age 25 to 64 years (2006)†, %	68.2	57.4	63.5	62.6
High blood pressure, age 12 years or older (2008)†, %	16.4	16.7	16.6	16.4

**Statistics Canada Community Profiles (22); †Statistics Canada Health Profile (23). LHIN Local Health Integration Network (located in Ontario)*

public education designed to alter social norms regarding sodium ingestion, changes to public policy, and improved regulations and food manufacturing practices.

Evidence from Australia and the United Kingdom (10,11) reveals that there are significant gaps in public knowledge related to sodium, its sources, recommended levels of daily intake, food label comprehension and the specific actions required to reduce sodium consumption. Limited comparable information is available for Canada. The aim of the present study was to examine knowledge, attitudes and behaviours related to sodium consumption among a sample of Canadians 35 to 50 years of age.

METHODS

Design and sample

In July 2009, a population survey was conducted in two health regions (Champlain and South West Local Health Integration Networks) of Ontario. Table 1 presents a comparison of the sociodemographic characteristics of the health regions sampled, as well as Ontario and Canada. The sampled communities had a sociodemographic profile that was similar to the rest of Canada. Representative samples of adults living in two communities were identified using a random-digit-dialing methodology using publicly available telephone listings from two large health regions in Ontario. A computerized, survey-sampler program was used to obtain a representative sample of adults 35 to 50 years of age from each community with an estimated margin of error of ±2.5%. A telephone interview of one eligible adult from each consenting household was completed by a trained telephone interviewer.

Participants were eligible to participate in the study if they were 35 to 50 years of age, and capable of completing the interview in English or French. This age group was identified as being an important segment of the population for the prevention of high blood pressure. The evaluation protocol was approved by the University of Ottawa Heart Institute (Ottawa, Ontario) Human Research Ethics Board.

Survey instrument

The interview addressed knowledge, attitudes and self-efficacy related to the consumption of dietary sodium, added salt and processed foods; actions taken to reduce sodium/added salt/processed foods in the past 30 days; intentions to reduce sodium consumption in the next six months; self-reported consumption of top-ranked sources of sodium in Canada; the presence of chronic disease (eg, heart disease, heart failure, high blood pressure) and participant demographics. The survey was developed using a socioecological framework (12), and included constructs from social cognitive theory (13) and the theory of planned behaviour (14).

Knowledge

Participants were asked about trends related to sodium consumption and sources of sodium in the Canadian diet. Respondents were also provided with a list of popular foods and asked to categorize the food as being low, moderate or high in sodium.

Beliefs, attitudes, self-efficacy and intentions

Personal beliefs were assessed using a single question: "Would you say that you personally consume too much sodium, just the right amount or too little?" Importance of, self-efficacy regarding and intentions related to sodium consumption were examined individually for the consumption of added salt, the consumption of processed foods and overall sodium consumption. Importance was evaluated by asking respondents to indicate their agreement with the following statement: "reducing your (added salt intake/processed food intake/sodium intake) is definitely important to you". Self-efficacy was assessed by agreement with the following statement: "considering a typical week in the next six months, it would be extremely easy for you to reduce the amount of (salt you add to the foods you eat/processed foods you eat/sodium you eat)". Intentions were assessed by the following statement: "considering a typical week in the next six months you definitely intend to reduce the amount of (salt you add to the foods you eat/processed foods you eat/sodium you eat)". Respondents were asked to rank their agreement on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree) for each statement.

Sodium-reducing behaviours

Actions taken by respondents to reduce dietary sodium consumption in the 30 days before the telephone interview were assessed using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Actions evaluated included limiting the amount of salt added to foods, limiting the consumption of processed or fast foods, looking at the sodium content of food before buying or consuming it, as well as a global assessment of sodium reduction.

Dietary sodium consumption

The frequency with which respondents consumed known sodium-containing processed foods was evaluated. Food items were based on the largest contributors to sodium consumption among Canadians as identified in the 2004 Canadian Community Health Survey (8). Respondents were asked to indicate the frequency with which they consumed each of the sodium-containing foods. Additional survey items related to added salt and sodium from processed food have been selected based on previous validation work (8,15,16). The survey also asked participants to identify the frequency with which they added salt to foods during cooking and at the table.

Analysis

Descriptive statistics were used to determine frequency distributions. Logistic regression was then used to examine the characteristics of respondents who reported taking action to reduce sodium consumption, and who reported intentions to reduce sodium consumption in the next six months. In the first analysis, the outcome of interest was

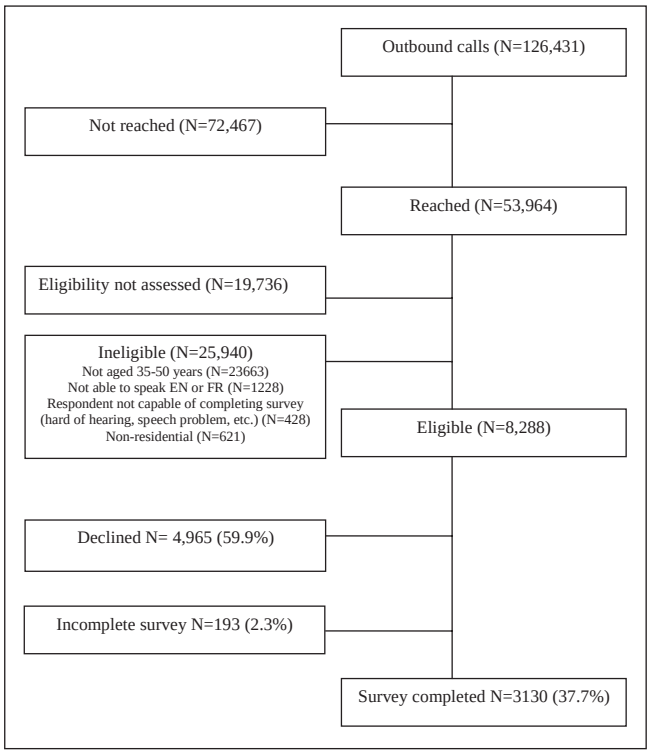

Figure 1) *Summary of recruitment flow. EN English; FR French*

action taken to reduce sodium consumption in the past 30 days (1 = strongly agree; 0 = all other responses). Bivariate logistic regression was also used to examine the relationship between intentions to reduce sodium in the next six months with personal beliefs about sodium consumption, the importance of reducing sodium consumption, self-efficacy regarding sodium and actions taken to reduce sodium. Adjusted ORs and 95% CIs were determined using stepwise multivariate logistic regression. Demographic variables that were independently related to the outcome (P<0.2) were retained for multivariate logistic regression analysis. The multivariate models included respondent sociodemographic characteristics, personal beliefs about sodium consumption and the importance of sodium reduction. Self-efficacy and intentions were not included in this model because the time frame for these variables was the next six months. The present analysis was repeated using intentions (1 = strongly agree; 0 = all other responses) to reduce sodium consumption as the dependent variable. The multivariate model included sociodemographic characteristics (significant at P<0.2), personal beliefs about sodium consumption, the importance of reducing dietary sodium consumption, as well as actions taken to reduce sodium and self-efficacy related to sodium consumption. Sample weights were used in the analysis to obtain results representative of the population. Analyses were performed using SAS version 9.2 (SAS Institute Inc, USA).

RESULTS

Participants

A total of 3130 participants (n=1565 from each region) completed the telephone interview. The sample represents approximately 37% of eligible participants (Figure 1). The demographic profile of respondents is presented in Table 2. The majority of respondents were women with college or university education, and were married or living with a partner. A total of 69.9% of respondents categorized their ethnic background as Caucasian (Canadian, Irish, English, Scottish or French descent), 17.2% as other European, 1.9% as South Asian, 1.2% as Asian, and 1.7% as North American Indian or Métis.

TABLE 2
Demographics

Parameter	Survey sample (n=3130)
Age, years mean ± SD	44.8±9.6
35–40	30
41–45	30
46–50	40
Men	36.1
Education	
Less than high school	1.2
High school	21.7
College or trade school	36.3
University bachelor's degree or higher	39.9
Marital status	
Married or common law	76.8
Divorced/separated/widowed	8.8
Single	13.0
Children living at home	
None	36.2
1	19.8
2	28.8
3 or more	13.7
Language spoken at home	
English	84.8
French	9.8
Other	4.7
Chronic disease*	13.3

*Data presented as % unless otherwise indicated. *Chronic disease defined by participant response to the following question: "Do you have a chronic disease or condition that requires you to limit your sodium intake (eg, congestive heart failure, high blood pressure, heart disease)?"*

Knowledge

Table 3 presents a summary of responses to the assessment of knowledge related to dietary sodium. Ninety per cent of respondents were aware that Canadians consumed too much sodium. While almost all respondents knew that processed foods were the largest source of sodium in the Canadian diet, many respondents were not able to correctly identify many of the foods forming part of the mainstream Canadian diet that are high in sodium. More specifically, approximately 50% of respondents did not identify the following foods as being high in sodium: processed cheese, hamburgers, canned vegetables or vegetable juice, canned or bottled tomato sauce, bottled salad dressing, and mustard and ketchup.

Personal beliefs and attitudes

Table 4 presents a summary of responses of self-reported attitudes, self-efficacy and intentions related to sodium consumption. Only 35% of respondents believed they personally consumed too much sodium. More than one-half of the respondents indicated that they strongly agreed that reducing sodium intake was important. Interestingly, more respondents indicated that they strongly agreed that a reduction in the consumption of high-sodium processed foods was more important than the reduction of sodium intake at-large or added salt.

Actions to reduce sodium

Table 5 presents a summary of data on self-reported actions to reduce sodium. Almost 50% of respondents reported that they strongly agreed they had attempted to reduce the amount of salt they added to foods in the past 30 days.

Self-efficacy and intentions in the next six months

Approximately 35% of respondents strongly agreed that it was "extremely easy" to reduce the amount of sodium and more than 75% reported that they definitely had intentions to reduce their consumption of dietary sodium in the next six months (Table 6). Similar responses were reported for added salt and processed food consumption.

TABLE 3
Knowledge of sodium intake as a health issue and sources of sodium

Parameter	%
Would you say that Canadians in general consume too much dietary sodium/salt, just the right amount or too little?	
Too much	88.9
Which of the following do you think is the single largest source of sodium or salt in the Canadian diet?	
Salt added at table	6.2
Salt in home cooking	3.6
Salt in processed foods	89.6
Do not know	0.6
Correctly identified high-sodium foods*	
Pizza	78.1
Processed cheese	48.5
Sausages and hot dogs	88.7
Hamburgers	47.3
Luncheon meats	87.1
Frozen breaded meats	73.1
Canned, cured or smoked meats	85.1
French fries	69.3
Frozen dinners	82.8
Salted snacks	96.6
Bacon	94.4
Canned entrees	80.2
Canned vegetables or vegetable juice	53.6
Tomato sauce	51.6
Canned or dehydrated soups	79.8
Bottled salad dressings	52.2
Soya sauce	88.6
Mustard and ketchup	47.8

**Identiifed food as being high in sodium based on the following question: "Would you consider this food to be: low, moderate or high in sodium?"*

TABLE 4
Beliefs and importance

Personal beliefs	%
Would you say that you personally consume too much sodium, just the right amount or too little?	
Too much	35.4
Just the right amount	53.4
Not enough	9.7
Do not know	1.5
Importance	
Reducing the amount of *salt you add* to foods is definitely important to you	
Strongly disagree	1.8
Disagree	6.4
Neither agree nor disagree	5.8
Agree	31.5
Strongly agree	55.7
Reducing the amount of *processed foods* you eat is definitely important to you	
Strongly disagree	1.3
Disagree	3.1
Neither agree nor disagree	2.8
Agree	28.4
Strongly agree	63.9
Reducing your *sodium intake* is definitely important to you	
Strongly disagree	1.4
Disagree	5.8
Neither agree nor disagree	5.8
Agree	32.6
Strongly agree	54.0

TABLE 5
Actions taken in the past 30 days

Actions*	%
Limited adding salt to the foods you ate	
Strongly disagree	2.9
Disagree	8.9
Neither agree nor disagree	4.3
Agree	34.2
Strongly agree	48.1
Not applicable	1.2
Reduced the amount of sodium you ate	
Strongly disagree	3.9
Disagree	12.4
Neither agree nor disagree	9.7
Agree	35.8
Strongly agree	36.2
Not applicable	1.3
Checked the nutrition facts on the package for sodium content before choosing a food	
Strongly disagree	6.9
Disagree	19.6
Neither agree nor disagree	5.8
Agree	28.3
Strongly agree	36.1
Not applicable	1.0

**'Actions' was defined by participant response to the following question: "Would you say you strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree that in the past 30 days, you have…"*

Sodium consumption

The survey assessed the frequency at which respondents consumed foods known to contribute most to population-level consumption of sodium in Canada. Among foods that are high in sodium (more than 400 mg/serving) (17), the following were consumed an average of two or more times per month by survey respondents: pizza, prepackaged processed mixes for potatoes, rice, pasta, stuffing, salted snacks, french fries, bacon, canned vegetables and vegetable juice, tomato sauce and other sauces, cheese and processed cheese, regular canned or dehydrated soups, hamburgers, sausages, hot dogs, luncheon meats, bottled/packaged salad dressing/mayonnaise, pickled foods such as olives or pickles, mustard/ketchup and soya sauce. Participants also reported adding salt at the table to raw or cooked dishes, and in the preparation of food, a mean (± SD) of 11.0±18.3 and 14.3±19.4 times, respectively, in the past month.

Prediction of action to reduce sodium and intention to reduce sodium in the future

The results of the bivariate regression analysis revealed that personal beliefs about current sodium consumption, the importance of reducing sodium, self-efficacy regarding sodium (intention only) and actions taken to reduce sodium (intention only) were all significantly ($P<0.001$) related to having taken action in the past 30 days to reduce sodium and the likelihood of intending to reduce sodium over the next six months. Results of the multivariate regression analysis examining the likelihood of having taken action in the past 30 days to reduce sodium and the likelihood of intending to reduce sodium in the next six months are presented in Table 7. Respondents who believed sodium reduction was important were more likely to have taken action to reduce sodium intake within the previous 30 days, whereas those who believed they were consuming too much sodium were less likely to have taken action. The likelihood of intending to reduce sodium in the next six months was related to attitudes about the importance of

TABLE 6
Self-efficacy and intentions in the next six months

Self-efficacy*	%
Limit the amount of *salt you add* to your food?	
Strongly disagree	2.2
Disagree	7.6
Neither agree nor disagree	5.3
Agree	42.3
Strongly agree	41.6
Reduce the amount of *processed foods* you eat?	
Strongly disagree	2.0
Disagree	8.9
Neither agree nor disagree	6.7
Agree	42.3
Strongly agree	38.9
Reduce the amount of *sodium* you eat?	
Strongly disagree	1.8
Disagree	9.7
Neither agree nor disagree	6.2
Agree	46.9
Strongly agree	34.5
Intentions†	
Definitely intend to reduce the amount of *salt you add* to the foods you eat	
Strongly disagree	3.1
Disagree	11.1
Neither agree nor disagree	10.0
Agree	38.3
Strongly agree	36.1
Definitely intend to reduce the amount of *processed foods* you eat	
Strongly disagree	2.0
Disagree	8.8
Neither agree nor disagree	8.3
Agree	41.3
Strongly agree	37.6
Definitely intend to reduce the amount of *sodium* you eat	
Strongly disagree	2.7
Disagree	10.4
Neither agree nor disagree	9.3
Agree	42.2
Strongly agree	34.1

**Self-efficacy defined as participant response to the following statement: "Considering a typical week in the next 6 months, it would be extremely easy for you to…"; †Intentions defined as participant response to the following statement: "Considering a typical week in the next 6 months you…"*

TABLE 7
Likelihood of having taken action in the past 30 days to reduce sodium intake and the likelihood of intending to reduce sodium intake in the next six months

Variable	Action taken to reduce sodium OR (95% CI)	Intention to reduce sodium OR (95% CI)
Presence of comorbid condition	1.35 (1.06–1.71)	1.64 (1.21–2.21)
Ethnicity	1.07 (0.95–1.21)	1.04 (0.89–1.22)
Language	–	1.34 (0.93–1.93)
Sex	1.15 (0.96–1.37)	1.13 (0.90–1.43)
Age, years		
35–39	(referent)	(referent)
40–44	1.02 (0.81–1.30)	0.99 (0.73–1.35)
45–50	1.38 (1.11–1.71)	1.04 (0.79–1.37)
Education	1.24 (1.01–1.52)	–
Personal belief about sodium consumption	0.43 (0.35–0.51)	1.01 (0.80–1.28)
Importance of reducing sodium	6.32 (5.26–7.59)	2.61 (2.06–3.32)
Self-efficacy about sodium reduction	–	18.1 (14.5–22.6)
Actions taken to reduce sodium	–	3.01 (2.40–3.78)

Adjusted for region (Champlain [Ontario] versus control)

reducing sodium, self-efficacy regarding sodium and actions that were taken to reduce sodium in the previous 30 days. The presence of chronic disease that required respondents to limit sodium consumption was also positively related to both actions and intentions to reduce dietary sodium. Respondents with higher levels of formal education who were between the ages of 45 and 50 years were also more likely to indicate strong intentions to reduce sodium in the next six months.

DISCUSSION

Excessive dietary sodium consumption is an important national public health issue (18). In the present study, the majority of respondents were aware that sodium consumption was a health issue and were aware that processed foods are the primary source of sodium in the Canadian diet. Just over one-half of respondents agreed or strongly agreed that reducing sodium consumption was important, suggesting that more work is required to ensure the general public recognizes the value of sodium reduction as a public health measure. The majority of respondents reported that they were taking some action to reduce their sodium consumption.

Previous research has reported Canadians to be knowledgeable about nutrition (19). Until recently, the best available information on actions taken to reduce sodium consumption was data collected as part of the national Tracking Nutrition Trends survey (19). That 2008 survey found that 71% of respondents indicated that salt or sodium content was influencing their choice of food, with 30% of respondents reporting that it was "very influential". However, only a small fraction of 35- to 50-year-old adults reported restricting their use of salt (0.9%). No other information on sodium-related behaviours was gathered as part of the survey. The present survey suggests that consumer awareness is increasing.

Despite the positive trends reported as a result of the present survey, there is disturbing evidence regarding consumer knowledge of the sodium content of many popular foods high in sodium. These foods are reported to be consumed very frequently by respondents, suggesting that this gap in knowledge is affecting food choices and self-rated assessments of personal dietary sodium intake. This finding is further validated by the low number of respondents who believed they personally consume too much sodium. Two hypotheses may explain this observation. First, the sample of participants in the present study may not be representative of the Canadian population and are, in fact, consuming healthy amounts of sodium. Data on the frequency at which high-sodium foods are consumed seems to contradict this possibility. The second is that many Canadians are not aware of the amount of sodium in many of the popular foods being consumed relative to recommended levels of sodium, and are misjudging their own intake of sodium or the impact of any efforts they are presently making to reduce sodium. Finally, it is interesting to note the frequency at which salt is added to foods: our findings suggest that respondents are adding salt to foods an average of 25 times per month.

The present study found that respondents were more likely to report they reduced their sodium intake in the 30 days before the survey if they believed sodium reduction was important. We also observed that intentions to reduce sodium were related to importance, self-efficacy and past behaviours related to sodium. These data may suggest that consumer behaviours related to sodium reduction may be influenced by health communication messages that aim to educate and persuade consumers about the importance of sodium reduction as well as supports that assist with making eating lower-sodium foods easy. In addition to education, policy changes designed to reduce the sodium content of processed foods in the Canadian food supply and increase the availability of lower-sodium food options may have an important

influence on the relative ease with which consumers are able to reduce their sodium.

While public awareness of the need to reduce sodium, and the reported actions taken to do so are positive findings, further activity may be required to refine knowledge and better direct the actions taken to reduce personal sodium consumption. Such activity may, in turn, assist with increasing the speed at which lower-sodium food products are introduced to the food supply. A strategy that combines strong public policy changes with consumer education is likely to be the most effective approach for increasing the speed at which changes in actual sodium consumption occur.

Limitations

There were limitations in the design of the present study that should be noted. The use of telephone-based assessments means that persons who do not have a telephone line were excluded, which may have biased against individuals in lower socioeconomic groups. The study was conducted in French or English and, therefore, would have excluded new residents or immigrants unable to respond in either official language. The telephone surveys were based on self-reported data and do not include any laboratory validation of sodium consumption. Previous research (20,21) on dietary behaviours has shown that respondents may be susceptible to social approval bias, which may drive self-report data toward more socially desirable responses. The response rate to the survey was 37.7%. There is a risk that the sample of respondents was biased, which is a limitation of population-level telephone surveys. Finally, the survey involved a random sample of residents from two representative health regions in Ontario. As described in Table 1, the health regions sampled have a sociodemographic profile that is similar to the rest of Canada. Some differences, however, were noted in the proportion of low-income families, educational attainment and proportion of the population who are immigrants. In evaluating the generalizability of these findings to other health regions in Canada, consideration should be given to the sociodemographic characteristics of the population relative to the sample surveyed as part of the present study.

CONCLUSION

The majority of respondents surveyed considered sodium to be an important issue and were taking action to reduce personal sodium consumption. Many respondents did not correctly identify many high-sodium foods, indicating that they may incorrectly believe they are consuming healthy amounts of sodium. In addition to requiring changes to food manufacturing processes to lower the sodium content of foods, there is a fundamental need to ensure Canadians are educated about the sources of sodium and lower-sodium alternatives in their food supply.

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