Natural Health Product Use in Canada

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ABSTRACT

Objective: To quantify patterns of Natural Health Product (NHP) use in Canada.

Methods: The Food Habits of Canadians surveyed 1,543 Canadian adults using a 24-hour recall to record dietary supplements. Prevalence of use by user profile was examined.

Results: Forty-six percent of women and 33% of men reported taking at least one Natural Health Product with a mean of 2.3 among users. The highest prevalence of supplement use, 57%, occurred among women aged 50-65. Supplement users were older, less likely to smoke and perceived their health as better than non-users. Among supplement users, men had higher rates of use of garlic and vitamin C while women used iron, calcium, B complex, evening primrose oil and glucosamine sulfate.

Discussion: Supplement use by Canadians, at 38% for nutrients and 15% for herbal products, was similar to the rate of uses in the U.S., although differences in the reporting of types of supplements underline aspects of consumer behaviour as well as methodological issues specific to NHPs. Investigation of the use of NHPs in the healthcare setting is important given the widespread use and the potential health care consequences associated with supplement use.

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

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Natural Health Products (NHPs) include "traditional herbal medicines; traditional Chinese, Ayurvedic and Native North American medicine; homeopathic preparations; and vitamin and mineral supplements".[1] While U.S. studies consistently report that 40% of adults use some form of vitamin or mineral supplement[2-4] and 13% use herbal preparations,[5-7] data concerning the prevalence of use in Canada are lacking.

Dietary supplements may be used to enhance dietary quality, prevent disease or as a natural remedy for health problems. The new Dietary Reference Intakes (DRIs) recognize both the role of diet and of supplemental forms of nutrients in health promotion (e.g., synthetic folic acid used prior to and during early pregnancy to prevent neural tube defects (NTDs)).[8] Within the context of DRIs promoting synthetic nutrients and a booming herbal supplement market,[9,10] obtaining information on supplement use presents a practical challenge to healthcare professionals.

Currently there is limited government regulation of supplements and few scientific reports on the efficacy and outcomes of NHPs used in Canada. Moreover, consumers lack knowledge concerning appropriate use, with even the most common herbal supplements such as Echinacea being used at inappropriate levels.[11] The Natural Health Products Directorate (NHPD) has been mandated to address these issues, yet there is limited background available on current NHP use in Canada. The following report offers the first insight into the usage habits and characteristics of Canadian users.

METHODS

Sample design

The Food Habits of Canadians randomly selected and interviewed 1,543 (572 men, 971 women) Canadian adults aged 18-65. Eighty sample areas, representative of the Canadian population, were randomly selected using a probability of selection based on population size, from each of 5 regions, 4 census divisions, then 2 subdivisions and finally 2 enumeration areas. Using a telephone listing, the adult in the household with the next birthday was invited to participate in the study. Fifteen percent of the population isolated from major population centres and Aboriginal

TABLE I

Characteristics of Supplement Users Compared to Non-users

	Non Supplement Users	All Supplement Users	Nutritive Supplements Only*	Herbal‡ and Nutritive Supplements*	Herbal‡ Supplements Only*
Number (Total N=1543)	904	639	407	173	59
% of Population	58.6%	41.4%	26.4%	11.2%	3.8%
By Gender					
Males	67.1%	32.9%	19.9%	8.9%	4.0%
Females	53.5%	46.5%[a]	30.2% [a]	12.6% [a]	3.7%
Education					
<high school	64.2%	35.8%	23.7%	9.8%	2.3%
high school/tech	58.0%	42.0%	25.9%	12.1%	4.0%
≥ some university	57.9%	42.1%	27.1%	11.0%	4.0%
Mean Age	42.0	45.8 [b]	45.9 [b]	46.1	44.2
Mean # of Supplements†	0.0	2.3	1.8	3.6	1.5
Mean BMI	26.2	25.5 [c]	25.4 [c]	25.7	25.6
Smokers (%)	22.9%	15.7% [f]	16.5% [f]	15.6% [f]	11.9% [f]
Perceived Health					
Excellent/Very good	58.1%	65.5% [d]	64.3%	64.7%	76.3% [e]
Good	32.7%	26.0%	26.8%	27.8%	15.2%
Fair/Poor	9.2%	8.5%	8.9%	7.5%	8.5%

‡ All non-nutrients; mostly of herbal origin, but category includes users of glucosamine sulphate, acidophilus and melatonin.
* Sub Groups of All Supplement Users
† Supplements
a significantly higher use in women (p<0.001)
b significantly older than non-users (p<0.01)
c significantly lower BMI than non-users (p<0.01)
d significantly better self-perceived health rating than non-users (p<0.01)
e significantly better self-perceived health rating than non-users (p<0.05)
f significantly lower prevalence of smoking compared to non-users (p<0.05)

communities were excluded, as were pregnant and lactating women. Low-income individuals and young males had lower response rates. Twenty-four hour recalls were conducted in the home by a dietitian-interviewer, inquiring about the use of any dietary supplements on the recalled day. Full sampling methods and dietary intakes with and without nutritive supplements have been described previously.[12,13]

Variables

Data were analyzed in mutually exclusive categories of NHP use: non-users (NU), nutritive supplement only users (N), nutritive and herbal supplement users (NH), and herbal supplement only users (H), as well as by specific supplement user types (e.g., multivitamin users). Each group was compared to non-users using Chi-square tests for proportions and independent t-tests of means.

"Nutritive supplement" was defined as any supplement containing at least one micronutrient, with or without "herbal" content. Herbal (i.e., non-nutrient), whether or not said component (e.g., glucosamine sulfate) met the strict definition of an herb, identified those supplements with at least one component with no established nutritive value by acknowledging their predominant botanical derivation.

For nutritive supplements, multivitamins with or without minerals were grouped together. Vitamin B-complex preparations included B_{50} (containing 50 mg or µg of most B vitamins) and other B-vitamin formulations. Calcium supplements were those listing calcium as the main label ingredient. For herbal supplements with 2 or more main label ingredients (e.g., "garlic with lecithin"), each ingredient was counted separately. Products not listing specific components (e.g., "herb alive") were recorded as herbal mixes.

TABLE II

Commonly Reported Natural Health Products on 24hr Recalls

Supplement	Overall Use (Rank)	Males (Rank)	Females (Rank)
Multivitamin with or without minerals	259 (1)	78 (2)	181 (1)
Vitamin C	218 (2)	84 (1)*	134 (3)
Calcium	188 (3)	33 (4)	155 (2)*
Vitamin E	161 (4)	53 (3)	108 (4)
Vitamin B-Complex	73 (5)	11 (6)	62 (5)*
Garlic	58 (6)	26 (5)*	32 (7)
Herbal mix	48 (7)	11 (6)	37 (6)
Evening primrose oil	25 (7)	2 (20)	23 (8)*
Echinacea	24 (9)	10 (8)	14 (13)
Iron	23 (10)	1 (24)	22 (9)*
Vitamin D	21 (11)	2 (20)	19 (10)
Zinc	21 (11)	10 (8)	11 (16)
Ginseng	20 (13)	9 (10)	11 (16)
Lecithin	19 (14)	7 (11)	12 (14)
Vitamin B_6	19 (14)	4 (15)	15 (11)
Glucosamine sulfate	16 (16)	1 (24)	15 (11)*
Multimineral	16 (16)	4 (15)	12 (14)
Cod liver oil	15 (18)	4 (15)	11 (16)
Folic acid	15 (18)	5 (13)	10 (20)
Gingko biloba	13 (20)	3 (18)	10 (20)
Vitamin B_{12}	12 (21)	1 (24)	11 (16)
St. John's Wort	10 (22)	1 (24)	9 (23)
Magnesium	10 (22)	0 (n/a)	10 (20)
Beta carotene	10 (22)	2 (20)	8 (24)
Selenium	10 (22)	5 (13)	5 (25)
Vitamin A	10 (22)	7 (11)	3 (28)
Chromium	7 (27)	3 (18)	4 (26)
Halibut liver oil	6 (28)	2 (20)	4 (26)

* significantly higher use than supplement users of the opposite sex (p<0.05)

Age and education were each stratified into three levels: 18-34, 35-49 and 50-65 for age, and <high school, completed high school, and post-secondary for education. Self-rating of perceived health was divided into 3 categories: excellent/very good (VG), good, fair/poor. Smoking status and self-reported height and weight were recorded and the latter were used to calculate body mass index (weight (kg)/height^2 (m^2)).

TABLE III

Absolute Use of Non-Nutritive Supplements*,†

Supplement Type	N
Garlic	62
Echinacea	29
Bioflavanoid‡	28
Ginseng, evening primrose oil	26
Lecithin	23
Ginkgo biloba, glucosamine sulfate	17
Alfalfa‡	15
Bee pollen‡	14
Spirulina‡, rose hip‡	13
Grapeseed extract‡	12
St. John's Wort, acerola‡	11
Kelp‡, papain‡, unspecified herbal	8
Watercress‡, aloe vera, parsley‡	7
Peppermint‡, cayenne	6
Bromelain‡, astragalus	5
Unspecified herbal mix, licorice root	4
Wheat grass, pine bark, feverfew, acidophilus, dong quai, cranberry, milk thistle, valerian, Siberian ginseng, green tea extract, aspirin, devil's claw	3
Vegetable pill, gotu kola, barley, ginger, saw palmetto, bilberry, hops, garcinia, cascara, ubiquinone, sarsaparilla, tumeric/curcumin	2
White oak bark, vitex, Japanese sodder, green lipped mussel, green kamut, grape skin, dulse, chlorella, chidium seed, cat's claw, buckthorn, bitter orange extract, beschniakia herb, soy, Melissa, black radish, suma, codonopsis root, melatonin§, passiflora, stevia§, juniper, cornsilk, cassia tora, uva ursi, Chinese knot grass root, propolis, goldenseal root, pulsatilla, ma huang (Ephedra), wild yam, yucca	1

* Table provides a complete listing of all herbs (plus glucosamine sulphate, acidophilus and melatonin) reported including those found in the herbal mixes (reported in Table II) with each ingredient being recorded and counted here
† each individual entity separated by comma had the reported N shown in right-hand column
‡ found mainly in mixed herbal products
§ not sold in Canada

RESULTS

Of those surveyed, 41% used at least one NHP on the day in question (Table I). Women were more likely than men to take supplements. At least one nutritive supplement (N + NH) was used by 29% of men and 43% of women, while 13% and 16% used at least one herbal supplement respectively (NH + H). Women were more likely than men to use nutritive supplements (N + NH; p=0.001) but there were no gender-based differences in the use of herbal supplements (NH + H).

The average age of both male and female supplement users was higher than non-users (p<0.005). Among women, supplement use increased by 10% with each increasing age category (35%, 45%, 57% respectively; p=0.001) while the increase for men was significant for the oldest age category (28%, 29%, 42% respectively; p=0.007). Multivitamin users were not older than non-users but were significantly younger than other supplement users (p<0.01).

Women selected multivitamins, calcium and vitamin C, in ranked order, while men used vitamin C, multivitamins and vitamin E (Table II). The top herbal products were garlic, herbal mixes and evening primrose oil. Among supplement users, use of iron, calcium supplements, B-complex vitamins, evening primrose oil and glucosamine sulfate was significantly higher among women (p<0.05). Male supplement users reported a higher prevalence of garlic and vitamin C use than female users (p<0.02), while men and women were equally likely to take multivitamins, vitamin E, Echinacea, ginseng, lecithin and gingko biloba. The absolute use of each herb is presented in Table III, where counts include ingredients listed on herbal mix labels. The most common herbal products reported by this method were garlic, Echinacea and bioflavanoids in ranked order.

Fifty-seven percent of users took more than one supplement, not different by gender, with the highest number consumed by one individual being 12 (6 nutritive, 6 herbal). Seventy-six percent of individuals using at least one herb also consumed a nutritive supplement, however the inverse was not true with only 29% of nutritive supplement users taking an herbal supplement.

Lifestyle/Health

Supplement users overall (N + NH + H) and category H users had a better self-perceived health rating than non-users (p<0.01). Education level was not found to be associated with supplement use. Female supplement users had a mean BMI that was lower than non-users (p<0.02) while there were no BMI differences of male supplement users when compared to non-users.

Vitamin C, garlic and B-complex users were equally likely to smoke as non-users. Multivitamin users of both genders and Echinacea* users were significantly less likely to smoke as were women taking calcium supplements and men taking vitamin E (p<0.05). Overall, supplement users were significantly less likely to smoke than non-users in all categories (N, NH and H, p<0.05).

DISCUSSION

Canadians use a wide range of NHPs with users consuming multiple nutritive or a combination of nutritive and herbal supplements. Women were more likely to take supplements than men and use increased with age. Supplement users had a lower rate of smoking and better self-perceived health than non-users and supplement choices reflected gender- and age-related health concerns.

Relative use

With similar findings to NHANES and CSFII data, our study demonstrates that Canadians consume nutrient supplements at a rate similar to Americans (38% vs approx. 40%, respectively).[2,4] Our prevalence of herbal supplement use, 13% for men and 16% for women, was also similar to the 13% rate reported in the U.S.[5-7] Use is shown to peak in the 50-65 age category at a rate which is maintained in older persons for nutritive supplements but declines for herbal supplement use.[2,14]

While the enormous sales growth of herbal products from 1994 to 1999 might suggest our data underestimate current prevalence of use, over the previous decade the prevalence of use in the U.S. has not increased in relative proportions with NHANESIII (1988-1994) findings similar to NHANESII (1976-1980).[2,3] Because supplement users are long-term users and often consume >1 supplement, the sales growth may be attributed to increased use by existing consumers.[15,16]

* Sample size prevented stratification by gender.

Types of supplements

Consistent with U.S. data,[2,4,7,17] multivitamins, calcium, vitamin E and vitamin C are the top four nutritive supplements in Canada. Among our top Canadian herbal supplements were garlic, Echinacea, ginseng, evening primrose oil and ginkgo biloba, also found in the top 10 listed in American sales reports.[9,10] Importantly, however, goldenseal, St. John's Wort and saw palmetto were not ranked high in our study but are ranked consistently high in U.S. sales. Such discrepancies raise methodological considerations for future research and issues for health care. First, we question the accuracy of self-reported herbal supplement use. With only 11 reports of St. John's Wort and 2 of saw palmetto in our study and similarly low numbers in NHANESIII data, self-reported data have not detected the use of these herbs, which are ranked high in dollar sales during the study periods.[10,18-20] These herbs may not be reported given the stigma associated with the conditions they treat – depression and enlarged prostate, respectively.[21] We also failed to detect psyllium and creatine use, which may reflect the age distribution of our sample. Psyllium use is common in the elderly as a natural laxative with use increasing by age, while creatine use, for muscle building, is primarily used by young males, who responded at a lower rate to our survey.[22-24]

Second, market reports are based on sales ($) and given the varied price for herbs cannot directly reflect prevalence of use. As 19 pounds of garlic ($U.S. $2.60/lb) must be sold to equal 1 pound of goldenseal ($U.S. $50.00/lb) sales, much less goldenseal must be sold to establish a high sales rank.[25] Discrepancies may also reflect differences between Canadian and U.S. markets. Goldenseal (grown only in a narrow region of the North-eastern States and Southern tip of Ontario) is protected under CITES.* Most U.S. export permits were denied during the study period, preventing the importation of U.S. goldenseal into Canada (Bertrand Vonarx, Scientific Authority CITES and International Coordinator, Government of Canada) and may thus have affected the herb's availability. As research does not investigate the impact of trade restrictions on market trends, American sales data may not be a good marker for Canadian supplement use.

Patterns of use

Supplements commonly used by older women included calcium, glucosamine sulfate and garlic, used for the age-related diseases of osteoporosis, osteoarthritis and heart disease respectively. Women were also the main consumers of evening primrose oil (EPO) and B-complex vitamins, corresponding to EPO and pyridoxine's common application in treating premenstrual syndrome.[26,27] The use of vitamin E and garlic by men reflects their concern for cardiovascular disease. Such trends suggest that consumers are knowledgeable about the purported benefits of common supplements.

Multivitamins were used irrespective of gender, age and level of education and may be an appropriate tool by which DRI recommendations, promoting supplemental nutrients (e.g., folate), can be implemented. Developing effective strategies to provide supplemental nutrients to those with limited financial resources is important, although our data do not allow an evaluation of the frequency of supplement use by poorer households relative to others. Among low-income females using food banks in Toronto, 12% reported supplement use, well below our sample population's 46%.[28]

Health care considerations

While regulations on NHPs are still being developed, over 40% of Canadians partake in supplement use, feeling it is a "low risk" behaviour despite the fact that many NHPs contain metabolically active components and high levels of potentially hazardous nutrients.[11] To date, only British Columbia has drafted bylaws to regulate the education and professional status of traditional Chinese medicine therapists in an attempt to regulate and integrate the use of NHPs.[29] As supplement users were found to use multiple supplements, commonly taking >1 supplement and often >1 vitamin or mineral product, there is a risk of user-induced nutrient interactions or excessive nutrient intake as well as complications arising from herbal supplement interactions or effects. Dietary supplements sold in Canada, including vitamin/mineral and herbal products, contain levels of nutrients and herbal compounds that can lead to irreversible health outcomes such as sensory neuropathy (excessive pyridoxine), teratogenicity (vitamin A) and severe metabolic complications/death (ephedra/ma huang).[8,27,30-36] Even with regulations, further information on consumer self-selection of NHPs, as well as on their properties, could better place healthcare professionals to ensure these products provide a health benefit while avoiding potential harm.

* CITES, or Convention on International Trade in Endangered Species, is an international body which protects wild animal and plant species from species endangerment as a result of commercial trade. Goldenseal is listed in Appendix II, whereby export requires a permit from the country's management authority which declares the shipment does not threaten the propagation of the wild species.

REFERENCES

1. Health Canada. Office of Natural Health Products: Frequently Asked Questions. Available at: http://www.hc-sc.gc.ca/hpb/onhp/faq2_e.html. Site Accessed: February, 2001.
2. Balluz LS, Kieszak SM, Philen RM, Mulinare J. Vitamin and mineral supplement use in the United States: Results from the Third National Health and Nutrition Examination Survey. *Arch Fam Med* 2000;9:258-62.
3. Dickinson VA, Block G, Russek-Cohen E. Supplement use, other dietary and demographic variables and serum vitamin C in NHANESII. *J Am Coll Nutr* 1994;13:22-32.
4. United States Department of Agriculture. Continuing survey of food intakes by individuals: Table 28-Vitamin and mineral supplements: Percentages of individuals using and type, by sex and age, 1994-1996. Available at: http://www.barc.usda.gov/bhnrc/foodsurvey/pdf/supp.pdf Site Accessed: April, 2002.
5. Eisenberg DM, Davis RB, Ettner SL, Appel A, Wilkey S, Van Rompay M, Kieszak SM. Trends in alternative medicine use in the United States, 1990-1997. *JAMA* 1998;280:1569-75.
6. Foster DF, Phillips RS, Hamel MB, Eisenberg DM. Alternative medicine use in older Americans. *J Am Geriatr Soc* 2000;48:1560-65.
7. Sandler RS, Halabi S, Kaplan EB, Baron JA, Paskett E, Petrelli NJ. Use of vitamins, minerals and nutritional supplements by participants in a chemoprevention trial. *Cancer* 2001;91:1040-45.
8. Food and Nutrition Board, Institute of Medicine. *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin and Choline.* Washington, DC: National Academy Press, 2000.
9. Herb sales up 101% in mainstream market. *HerbalGram* 1998;43:61.
10. Blumenthal M. Herb Market Levels After Five years of Boom: 1999 Sales in Mainstream Market up Only 11% in First Half of 1999 After 55% Increase in 1998. *HerbalGram* 1999;47:64-65.
11. Gallo M, Sarkar M, Au W, Pietrak K, Comas B, Smith M, et al. Pregnancy outcome following gestational exposure to echinacea: A prospective controlled study. *Arch Intern Med* 2000;160:3141-43.
12. Troppmann LA, Gray-Donald K, Johns T. Supplement use: Is there any nutritional benefit? *J Am Diet Assoc* 2002;102:818-25.
13. Gray-Donald K, Jacobs-Starkey L, Johnson-Down L. Food habits of Canadians: Reduction in

fat intake over a generation. *Can J Public Health* 2000;91:381-85.
14. Frank E, Bendich A, Denniston M. Use of vitamin-mineral supplements by female physicians in the United States. *Am J Clin Nutr* 2000;72:969-75.
15. Patterson RE, Neuhouser ML, White E, Kristal AR, Potter JD. Measurement error from assessing use of vitamin supplements at one point in time. *Epidemiology* 1998;9:567-69.
16. Giovannucci E, Stampfer MJ, Colditz GA, Hunter DJ, Fuchs C, Rosner BA, et al. Multivitamin use, folate and colon cancer in women in Nurses' Health Study. *Ann Intern Med* 1998;129:517-24.
17. Medeiros DM, Bock MA, Carpenter K, Ortiz M, Raab C, Read M, et al. Long-term supplement users and dosages among adult westerners. *J Am Diet Assoc* 1991;980-82.
18. Top ten herb sales in selected health food stores. *Whole Foods Magazine* 1995.
19. Top selling herbs supplements in mass market - 1997. *HerbalGram* 1998;42:65.
20. Richman A, Wright JD. Echinacea #1 in natural food trade. *HerbalGram* 1997;41:53.
21. Searle GF. Stigma and depression: A double whammy. *Int J Clin Pract* 1999;53:473-75.
22. Stoehr GP, Ganguli M, Seaberg EC, Echement DA, Belle S. Over-the-counter medication use in an older rural community: The MoVIES project. *J Am Geriatric Society* 1997;45:158-65.
23. Juhn MS. Oral creatine supplementation: Separating fact from hype. *The Physician and Sports Medicine* 1999;27(5):47-61.
24. Radimer KL, Subar AF, Thompson FE. Nonvitamin, nonmineral dietary supplements: Issues and findings from NHANESIII. *J Am Diet Assoc* 2000;100:447-54.
25. Brevoort P. Top Selling Herbs in U.S. Commerce. *East Earth Herb Inc.* 1994.
26. Reader's Digest. *The Healing Power of Vitamins, Minerals and Herbs.* Montreal, Canada: Books and Home Entertainment, 1999.
27. Lininger SW, Gaby AR, Austin S, Brown DJ, Wright JV, Duncan A. *The Natural Pharmacy.* United States: Prima Publishing, 1999.
28. Tarasuk VS, Beaton GH. Women's dietary intakes in the context of household food insecurity. *J Nutr* 1999;129:672-79.
29. MacQueen K. The best of both worlds: British Columbia aids the merger of traditional Chinese practice with western medicine. *Maclean's* 2001;44-47.
30. Cupp MJ. Herbal remedies: Adverse effects and drug interactions. *Am Fam Phys* 1999;59:1239-44.
31. Food and Nutrition Board Institute of Medicine. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium and Zinc.* Washington, DC: National Academy Press, 2001.
32. Haller CA, Benowitz NL. Adverse cardiovascular and central nervous system events associated with dietary supplements containing ephedra alkaloids. *N Engl J Med* 2000;343:1833-38.
33. Health Canada. Advisory not to use products containing Ephedra or ephedrine. Available at: http://www.hc-sc.gc.ca/english/archives/warnings/2001/2001_67e.htm. Site Accessed: July, 2001.
34. Nightingale SL. New safety measures are proposed for dietary supplements containing ephedrine alkaloids. *JAMA* 1997;278:15.
35. Theoharides TC. Sudden death of a healthy college student related to ephedrine toxicity from a Ma Huang-containing drink. *J Clin Psychopharmacology* 1997;17:437-39.
36. White LM, Gardner SF, Gurley BJ, Marx MA, Wang P-L, Estes M. Pharmacokinetics and cardiovascular effects of Ma-Huang (Ephedra sinica) in normotensive adults. *J Clin Pharmacol* 1997;37:116-22.

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RÉSUMÉ

Objectif : Quantifier l'apport en produits de santé naturels (PSN) au Canada.

Méthodes : L'enquête d'habitudes alimentaires des Canadiens a mesuré l'apport de suppléments alimentaires sur 1 543 Canadiens rappelés sur une période de 24 heures. La prédominance de l'usage des suppléments était examinée.

Résultats : Quarante-six pour cent des femmes et 33 % des hommes ont rapporté au moins un produit de santé naturel, avec une moyenne de 2,3 parmi les usagers. La plus haute prévalence d'utilisation de suppléments, 57 %, a été reportée par les femmes âgées entre 50 et 65 ans. Ceux qui prenaient des suppléments étaient plus âgés, moins portés à fumer et ont perçu leur état de santé comme étant meilleur que les non utilisateurs. Parmi les utilisateurs de suppléments, les hommes avaient un plus haut taux d'utilisation d'ail et de vitamine C, alors que les femmes utilisaient le fer, le calcium, le complexe B, la primevère du soir et le sulfate de glucosamine.

Discussion : L'utilisation de suppléments de 38 % pour les nutriments et de 15 % pour les produits à base de plantes par les Canadiens est similaire au taux d'utilisation aux États-Unis, quoique les différences dans le rapport des types de suppléments soulignent les aspects de comportement du consommateur ainsi que les difficultés méthodologiques spécifiques aux PSN. L'investigation de l'utilisation des PSN dans le système de la santé est importante à évaluer étant donné l'utilisation répandue et les risques potentiels associés à l'utilisation de suppléments.

Coming Events / Activités à venir

To be assured of publication in the next issue, announcements should be received by **December 1, 2002** and valid as of **February 28, 2003.** Announcements received after **December 1, 2002** will be inserted as time and space permit.
Pour être publiés dans le prochain numéro, les avis doivent parvenir à la rédaction avant le **1er décembre 2002** et être valables à compter du **28 février 2003.** Les avis reçus après le **1er décembre 2002** seront insérés si le temps et l'espace le permettent.

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A View to the Future/Regard sur l'avenir
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