Patterns of use—alternative health care practitioners

Wayne J. Millar

Abstract

Objectives

This article examines consultations with alternative practitioners and the characteristics of people who use such care.

Data source

The data are from the longitudinal (1994/95 to 1998/99) and cross-sectional (1998/99) household components of Statistics Canada's National Population Health Survey (NPHS).

Analytical techniques

Descriptive information about the use of alternative practitioners is presented. Logistic regression is used to compare the odds of consulting alternative practitioners while controlling for a number of related factors.

Main results

In 1998/99, about 3.8 million people reported having used the services of an alternative practitioner. Relatively high percentages of women, 25- to 64-year-olds, and people in the Western provinces reported seeking alternative care. When related factors, including chronic pain, were taken into account, asthma and back problems were significantly associated with alternative practitioner use.

Key words

alternative medicine, health behaviour, health status, health services accessibility

Author

Wayne J. Millar (613-951-1631; millway@statcan.ca) is with the Health Statistics Division at Statistics Canada, Ottawa, Ontario, K1A 0T6.

In Canada, health care is in transition as governments address escalating costs. At the same time, conventional medicine continues to evolve, and many people are seeking and using a wider array of health care services. Although Canadians continue to rely on mainstream health care, they are increasingly turning to alternatives.[1] Thus, provincial governments are being challenged to understand the full range of current health care practices—for many different types of therapies.

Alternative, or complementary, medicine covers a wide range of approaches to treatment. Generally, it is defined as those treatments and health care practices not widely taught in medical schools, not routinely used in hospitals, and not typically reimbursed by health benefit plans.[2] Such treatments are sometimes used alone, in combination with other alternative therapies, or in addition to conventional medicine.[2] Individuals who consult alternative practitioners may simply be trying to prevent illness or to maintain or improve their overall well-being. Or they may be seeking relief from conditions that are difficult to treat, or that are associated with chronic pain, such as back problems.

Data source

This analysis is based on data from Statistics Canada's National Population Health Survey (NPHS), weighted to represent the population of the 10 provinces. The NPHS, which began in 1994/95, collects information about the health of the Canadian population every two years. It covers household and institutional residents in all provinces and territories, except people living on Indian reserves, on Canadian Forces bases, and in some remote areas. The NPHS has both a longitudinal and a cross-sectional component. Respondents who are part of the longitudinal component will be followed for up to 20 years.

Cross-sectional sample: The 1994/95 and 1996/97 (cycles 1 and 2) NPHS cross-sectional samples are made up of longitudinal respondents and other members of their households, as well as individuals who were selected as part of supplemental samples, or buy-ins, in some provinces. In 1994/95, the large majority of interviews were conducted in person. Most of the 1996/97 interviews were conducted by telephone, and additional respondents for the buy-ins were chosen using the random digit dialling technique. The 1998/99 (cycle 3) cross-sectional sample is made up mostly of longitudinal respondents and their cohabitants. Again, most of the interviews were conducted by telephone. Although no buy-ins were added to the cycle 3 sample, infants born in 1995 or later and immigrants who entered Canada after 1994 were randomly selected and added to keep the sample representative. To replace the sample lost to attrition, individuals in dwellings that were part of the original sampling frame, but whose household members did not respond in 1994/95, were contacted and asked to participate.

NPHS data are stored in two files. The General file contains socio-demographic and some health information obtained for each member of participating households. The Health file contains in-depth health information, which was collected for one randomly selected household member, as well as the information in the General file pertaining to that individual.

In 1994/95, in all selected households, one knowledgeable person provided the socio-demographic and health information about all household members for the General file. As well, one household member, not necessarily the same person, was randomly selected to provide in-depth health information about himself or herself for the Health file.

Among individuals in the longitudinal component in 1996/97 and 1998/99, the person providing in-depth health information about himself or herself for the Health file was the randomly selected person for the household in cycle 1 (1994/95), and was usually the person who provided information on all household members for the General file in cycles 2 and 3, if judged to be knowledgeable to do so. In households that were added to the 1996/97 cross-sectional sample (buy-ins), one knowledgeable household member—not necessarily the randomly selected respondent for the Health file—provided the information for all household members for the General file. For the 1998/99 cross-sectional sample (longitudinal respondents and immigrants, infants, and individuals in households that did not participate in cycle 1), the randomly selected respondent was usually the person who provided information for the General file, again, if judged knowledgeable.

The 1994/95 provincial, non-institutional sample consisted of 27,263 households, of which 88.7% agreed to participate. After applying a screening rule to maintain the representativeness of the sample, 20,725 households remained in scope. In 18,342 of these households, the selected person was aged 12 or older. Their response rate to the in-depth health questions was 96.1% or 17,626 respondents.

In 1996/97, the overall response rate at the household level was 82.6%. The response rate for the randomly selected individuals aged 2 or older in these households was 95.6%. In 1998/99, the overall response rate was 88.2% at the household level. The response rate for the randomly selected respondents aged 0 or older in these households was 98.5%.

Longitudinal sample: Of the 17,626 randomly selected respondents in 1994/95, 14,786 were eligible members of the NPHS longitudinal panel, along with 468 persons for whom only general information was collected. An additional 2,022 of the 2,383 randomly selected respondents under age 12 were also eligible for the longitudinal panel. Thus, 17,276 respondents were eligible for re-interview in 1996/97, and 16,677 were still alive in 1998/99. A response rate of 93.6% was achieved for the longitudinal panel in 1996/97, and a response rate of 88.9%, based on the entire panel, was achieved in 1998/99. Of the 16,168 participants in 1996/97, full information (that is, general and in-depth health information for the first two survey cycles or an outcome of death or institutionalization) was available for 15,670. The corresponding number for 1998/99 was 14,619 respondents. More detailed descriptions of the NPHS design, sample, and interview procedures can be found in published reports.[3,4]

This analysis is restricted to the household population aged 18 or older. The sample size of this population for the cross-sectional component in 1994/95, 1996/97 and 1998/99 was 16,291, 68,282, and 14,150. The sample of longitudinal respondents aged 18 or older with general and health information was 11,161. Longitudinal respondents who died or who were institutionalized were excluded.

With recent data from the National Population Health Survey (NPHS), this article examines Canadians' use of alternative practitioners. This category comprises practitioners such as massage therapists, homeopaths, naturopaths and acupuncturists, among others (see *Definitions*). Consistent with previous studies, chiropractors are also included.[5,6] A brief examination of consultations across the first three NPHS cycles is presented (1994/95 to 1998/99) before the focus shifts to alternative practitioner use in 1998/99. Selected socio-demographic characteristics, health behaviours, and health care utilization among users are explored, and detailed analyses relating certain chronic conditions and pain to use of alternative practitioners are presented (see *Data Source*, *Limitations* and *Analytical Techniques*). The appropriateness, effectiveness and costs of alternative therapies are not addressed.

Limitations

National Population Health Survey (NPHS) data are self- or proxy-reported, and the degree to which they are inaccurate because of reporting error is unknown. Most of this analysis is based on cross-sectional data; therefore, relationships between variables can be described, but causality cannot be inferred. A potential for bias exists if groups with different socio-demographic characteristics vary in their willingness to report their health status or their use of health care services. An additional potential source of bias is that the household component of the NPHS excludes persons living in isolated northern communities and on Indian reservations, the homeless, and those who are institutionalized such as the mentally ill, the elderly and patients in hospitals. These exclusions preclude consideration of the health care received by persons who are at high risk of sickness.[7]

In this analysis, as is commonly done,[5,6] chiropractors are classified as "alternative practitioners." Although the NPHS collects information on several other specific types of practitioners (massage therapists, acupuncturists, Feldenkrais, Alexander or biofeedback teachers, or relaxation therapists, for example), these groups are relatively small, and detailed data by category of practitioner are not presented in this analysis.

The NPHS questions relate to the use of alternative practitioners, not to the broader use of alternative therapies. Therefore, even though individuals may not be using the services of an alternative practitioner, they may still be using some form of alternative therapy.

Although the NPHS collected information about the use of alternative practitioners and about the prevalence of various chronic diseases, there is no direct link between the two. The inability to categorize respondents according to the specific condition for which they are consulting alternative practitioners limits the interpretation of the data.

A further limitation of this analysis is that information is not available on all factors that motivate individuals to consult alternative practitioners. In particular, nothing is known about the severity of chronic disease and the factors that govern patient decisions about seeking care from alternative practitioners. For example, in some instances, patients may be directly referred by attending physicians, while in others, the decision may be motivated by factors such as disillusionment with conventional medical treatment.

Analyzing the use of alternative health care practitioners at the national or provincial level may conceal specific groups among whom alternative medicine use is more prevalent. For example, the survey does not permit examination of acupuncture or herbalists by the Chinese community, or the use of traditional medicine by Aboriginal peoples.

Because the survey does not provide information about the health care costs associated with the use of alternative practitioners, this issue could not be addressed.

Provincial differences in use of alternative health care practitioners may reflect the funding of various alternative health care services under provincial health care plans. Saskatchewan, Manitoba, British Columbia, Alberta and Ontario provide at least some form of payment for chiropractic services under provincial health legislation. Provincial insurance in Québec does not extend to chiropractic services, and in the Atlantic provinces, chiropractor services are either not funded, or the scope of services that are reimbursed is restricted. Private or public employers may also share or pay for the cost of consulting some alternative practitioners. Massage therapy, acupuncture and chiropractor services are the most common services covered under employer-sponsored plans.

Table 1
Use of alternative practitioners, by sex, household population aged 18 or older, Canada excluding territories, 1994/95, 1996/97 and 1998/99

	Total population			Consulted alternative practitioner in past year					
	1994/95	1996/97	1998/99	Cycle 1 (1994/95)		Cycle 2 (1996/97)		Cycle 3 (1998/99)	
		’000		’000	%	’000	%	’000	%
Both sexes	**21,388**	**22,160**	**22,568**	**3,164**	**15**	**3,464**	**16**	**3,779**	**17***
Men	10,487	10,836	11,030	1,353	13	1,488	14	1,570	14*
Women	10,901	11,324	11,538	1,811	17	1,976	17	2,209	19*

Data source: *1994/95, 1996/97 and 1998/99 National Population Health Survey, cross-sectional sample, Health file*
** Significantly higher than 1994/95 ($p < 0.05$)*

Use rising

According to the 1998/99 NPHS, an estimated 3.8 million Canadians aged 18 or older reported that they had consulted an alternative health care provider in the previous year. This represented 17% of the population, a significant increase over the 15% estimated in 1994/95, when the first cycle of the NPHS was conducted (Table 1; Appendix Table A). Use of chiropractors alone remained stable over this period; the increase in use of other alternative practitioners (excluding chiropractors) accounted for the overall rise in consultations (data not shown).

Use among women rose from 17% in 1994/95 to 19% in 1998/99. Although the percentage of men consulting alternative practitioners also rose significantly, the increase was less pronounced (13% to 14%).

For many people, consultation with alternative practitioners may be episodic rather than ongoing. Between 1994/95 and 1998/99, about 3 in 10 people aged 18 or older consulted an alternative practitioner (Table 2). Among these users, over half (54%)

Analytical techniques

Cross-sectional data from the National Population Health Survey (NPHS) were weighted to represent the population at the date of each survey cycle. Longitudinal data were weighted to represent the population when the survey began (1994/95). To account for survey design effects, estimates of the variance were generated using the bootstrap technique.[8-10]

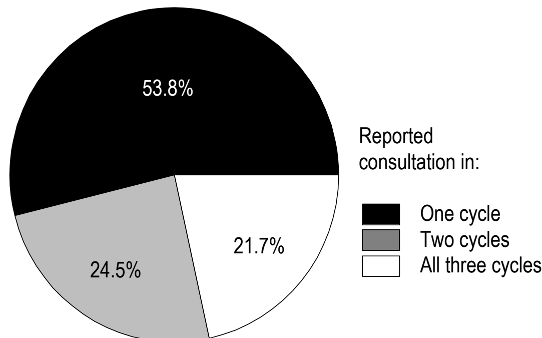
This analysis provides descriptive information about the use of alternative practitioners. The selection of variables was guided by a review of the literature, and by the availability of indicators from the NPHS. Logistic regression models are used to compare the odds of consulting alternative practitioners. To assess the association between specific chronic conditions, chronic pain and alternative practitioner use, the analysis first considers diseases that are associated with alternative practitioner use when controlling for sex, age, province, education, household income, number of chronic conditions, attitude toward self-care, and perceived unmet health care needs. Although all chronic conditions for which NPHS data were available were considered, this analysis reports only on those for which there was a positive association. Then chronic pain is introduced into the model to determine if the association between chronic illness and alternative practitioner use remains. Finally, the analysis considers whether users of alternative practitioners differ from non-users in certain, possibly preventive, health behaviours, or in the use of selected health care services.

Table 2
Use of alternative practioners, household population aged 18 or older,† Canada excluding territories, cycles 1 (1994/95) to 3 (1998/99)

	Population	%
	’000	
Total	**20,195**	**100.0**
Used alternative practitioner		
One cycle	3,201	15.9
Two cycles	1,462	7.2
All three cycles	1,292	6.4
Non-user (all three cycles)	14,240	70.5

Data source: *1994/95, 1996/97 and 1998/99 National Population Health Survey, longitudinal sample, Health file*
† Based on respondents who were alive in 1998/99, who were not living in an institution, and for whom complete responses for all three survey cycles were available.

Chart 1
Percentage of alternative practitioner users who reported a consultation in one, two, or all three NPHS cycles, household population aged 18 or older,† Canada excluding territories, 1994/95 to 1998/99



Data source: *1994/95, 1996/97 and 1998/99 National Population Health Survey, longitudinal sample, Health file*
† Based on 3,061 respondents who were alive in 1998/99, who were not living in an institution, for whom complete responses for all three survey cycles were available, and who reported at least one consultation with an alternative practitioner.

reported having done so in only one survey cycle (Chart 1). One-quarter reported using the services of an alternative practitioner in two of the three survey cycles; 22% in all three. As these results are based on responses from the *same* individuals through all three survey cycles, they suggest that alternative care is not necessarily a regular practice. There may be several reasons for such short-term use, including finding a solution to the problem, finding that the treatment was ineffective, or being unable to carry on with treatment for financial or other reasons. But alternative care is also obviously a longer-term option for many people, as 1.3 million reported that they used the services of an alternative practitioner in the previous year for each of the three cycles.

Women more likely to consult alternative practitioners

In 1998/99, a higher percentage of women than men reported having consulted an alternative practitioner in the past year: 19% compared with 14% (2.2 million versus 1.6 million) (Table 3). Of course, many factors may be related to the use of alternative care. Such factors include province, education, household income, number of chronic

Table 3
Use of alternative practitioners, by selected characteristics, household population aged 18 or older, Canada excluding territories, 1998/99

	Estimated population	Consulted alternative practitioner in past year	
	'000	'000	%
Total	**22,568**	**3,779**	**17**
Sex			
Men†	11,030	1,570	14
Women	11,538	2,209	19*
Age group			
18-24	2,855	321	11
25-44	9,548	1,793	19*
45-64	6,677	1,270	19*
65+†	3,488	395	11
Province			
Newfoundland†	405	13	3‡
Prince Edward Island	100	5	6
Nova Scotia	698	58	8*
New Brunswick	568	51	9*
Québec	5,581	856	15*
Ontario	8,544	1,273	15*
Manitoba	805	170	21*
Saskatchewan	726	155	21*
Alberta	2,094	522	25*
British Columbia	3,047	676	22*
Education			
Less than high school graduation†	5,096	619	12
High school graduation	3,596	554	15*
Some postsecondary	6,159	1,053	17*
College diploma/University degree	7,690	1,551	20*
Missing	27	--	--
Household income			
Low†	2,848	332	12
Lower-middle	5,568	789	14*
Upper-middle	7,839	1,488	19*
High	4,750	947	20*
Missing	1,562	223	14
Chronic conditions			
None†	8,640	990	11
One	5,981	1,030	17*
Two	3,739	698	19*
Three+	4,131	1,044	25*
Missing	78	--	--
Chronic pain			
Yes	3,358	885	26*
No†	19,200	2,895	15
Missing	9	--	--
Attitude toward self-care			
Low†	5,801	684	12
Medium	11,190	1,884	17*
High	4,818	1,139	24*
Missing	758	73	10‡
Perceived unmet health care needs			
No†	21,053	3,343	16
Yes	1,494	433	29*
Missing	20	--	--

Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
† Reference category
‡ Coefficient of variation between 16.% and 25.0%
** Significantly higher than reference category ($p < 0.05$)*
-- Sample size too small to provide reliable estimate

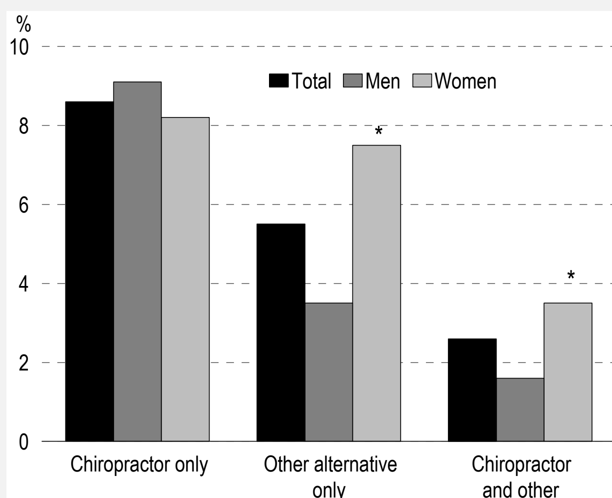
Alternative practitioners

For this analysis, consultation with *alternative health care practitioners* was determined from two National Population Health Survey (NPHS) questions. Most alternative practitioners were covered by the following question: "In the past 12 months, have you seen or talked to an alternative health care provider such as an acupuncturist, naturopath, homeopath or massage therapist about your physical, emotional or mental health?" Those who answered "yes" were asked what type of practitioner had been consulted or visited.

Chiropractors were not listed among the alternative health care providers, but they were among the response options in the question relating to contacts with various health care professionals: "In the past 12 months, how many times have you seen or talked on the telephone with [fill category] about your physical, emotional or mental health."

A recent study based on NPHS data found that chiropractors were the most commonly consulted alternative practitioners.[1] Similar results were found in this analysis. In 1998/99, among Canadians aged 18 or older of both sexes, chiropractors were the alternative practitioners most frequently consulted. Men and women were equally likely to have reported a consultation with a chiropractor in the past year. But a much higher percentage of women than men reported that they had consulted another type of alternative practitioner. Similarly, women were more likely than men to report having seen both a chiropractor and another alternative practitioner in the previous year.

Use of alternative practitioners, household population aged 18 or older, by sex, Canada excluding territories, 1998/99



Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
** Significantly higher than value for men ($p < 0.01$)*

Chiropractic techniques focus on the relationship between the structure (primarily of the spine) and function (primarily of the nervous system) of the human body to restore and preserve health.[11] Chiropractors use manual procedures and interventions rather than surgery or drugs. Chiropractic speciality areas are relevant to other medical specialities such as orthopedics, neurology, and sports medicine.[12] In several Canadian provinces (British Columbia, Alberta, Saskatchewan, Manitoba and Ontario), chiropractic services are included and partially funded under the provisions of the provincial health care plans.[11]

Massage therapy is based on the assumption that a dysfunction in one part of the body may have implications for function in other discrete, not necessarily directly connected, body parts. Massage consists of manual techniques, including the application of fixed or movable pressure and holding or causing the body to move. Hand massage is most commonly employed, but the forearms, elbows and feet may also be used. These techniques may affect the musculo-skeletal, circulatory-lymphatic, and nervous systems.[12]

Acupuncture is a component of Chinese health care that can be traced back for at least 2,500 years. This therapy is based on the premise that patterns of energy flow through the body. Practitioners of acupuncture argue that disruption of the energy flow has negative implications for health. Acupuncture describes a system of procedures (including tiny needles) that stimulates various anatomical sites on the skin by a variety of techniques.[13]

Homeopathy is based on two key principles. One is the "law of similars"; that is, a substance that produces certain symptoms in a healthy person can be used to treat the same symptoms in a person who is sick.[14] The other involves using minimum doses of remedies to stimulate the body's own healing mechanisms.[14] Homeopathic remedies are made from naturally occurring plant, animal, or mineral substances.[12] Homeopathy tends to be based on the individual rather than common symptomology.[15]

Naturopathy is a drug-free system of treatment that often uses physical forces such as air, light, heat or water. Naturopathic medicine encompasses various healing therapies, including clinical nutrition, hydrotherapy, botanical medicine, and lifestyle counselling.[16]

Definitions

Four *age groups* were used for this analysis: 18 to 24, 25 to 44, 45 to 64, and 65 or older.

Education was based on the highest level attained, and four groups were established: less than high school graduation; high school graduation; some postsecondary; and college diploma/university degree.

Household income was defined based on the number of people in the household and total household income from all sources in the 12 months before the survey interview. The following income groups were used:

Household income group	People in household	Total household income
Lowest	1 or 2	Less than $15,000
	3 or 4	Less than $20,000
	5 or more	Less than $30,000
Lower-middle	1 or 2	$15,000 to $29,999
	3 or 4	$20,000 to $39,999
	5 or more	$30,000 to $59,999
Upper-middle	1 or 2	$30,000 to $59,999
	3 or 4	$40,000 to $79,999
	5 or more	$60,000 to $79,999
Highest	1 or 2	$60,000 or more
	3 or more	$80,000 or more
Unknown	Not applicable	Not stated

To determine the presence and *number of chronic conditions*, respondents were asked if they had any “long-term conditions that have lasted or are expected to last six months or more and that have been diagnosed by a health professional.” Those considered for this analysis are: asthma, arthritis or rheumatism, back problems (excluding arthritis), high blood pressure, migraine, chronic bronchitis or emphysema, diabetes, heart disease, cancer, stomach or intestinal ulcers, bowel disorder such as Crohn’s disease or colitis, and thyroid condition.

Respondents who said that they were not usually free from pain or discomfort were considered to have *chronic pain*.

Five statements from the 1998/99 National Population Health Survey (NPHS) were used to derive respondents’ *attitude toward self-care*:

- I prefer doctors who give me choice or options and let me decide for myself what to do (reverse scoring).
- Patients should never challenge the authority of the doctor.
- I prefer that the doctor assume all of the responsibility for my medical care.
- Except for serious illness, it is generally better to take care of your own health than go to a doctor (reverse scoring).
- It is almost always better to go to a doctor than to try to treat yourself.

Respondents were asked to rate their agreement or disagreement with each item on a five-point scale, with 1 being “strongly agree” and 5, “strongly disagree.” The values were then recoded in the 0-to-4 range to calculate scores: 0 indicates a preference to rely on the doctor; 4, a preference for self-care. The scores of the first and fourth items were reversed. The scores ranged from 0 to 20, with 0 to 9 representing low; 10 to 14, medium. Respondents who scored between 15 and 20 were considered to strongly believe in self-care (about 25% of respondents were in this category).

Respondents were asked if there was ever a time in the last 12 months when they felt they needed, but did not receive, health care. Positive responses were considered to indicate *perceived unmet health care needs*.

Smoking status was established by asking individuals if they smoked cigarettes daily, occasionally, or not at all. For this analysis, two categories were used: current *smoker* (daily or occasional) and non-smoker (former and never smokers).

To derive physical activity level, respondents’ energy expenditure (EE) was estimated for each activity they engaged in during leisure time. EE was calculated by multiplying the number of times a respondent engaged in an activity over a 12-month period by the average duration in hours and by the energy cost of the activity (expressed in kilocalories expended per kilogram of body weight per hour of activity). To calculate an average daily EE for the activity, the estimate was divided by 365. This calculation was repeated for all leisure-time activities reported, and the resulting estimates were summed to provide an aggregate average daily EE. Respondents whose estimated leisure-time EE was below 1.5 kcal/kg/day were considered physically inactive. A value between 1.5 and 2.9 kcal/kg/day indicated moderate physical activity. Respondents with an estimated EE of 3.0 or more kcal/kg/day were considered *physically active*. This measure may underestimate total physical activity, as it does not account for activity at work or while doing household chores.

The *Canadian Guidelines for Healthy Weights* use body mass index (BMI) to determine an acceptable range of healthy weights and to identify conditions of excess weight and underweight.[17] BMI is calculated by dividing weight in kilograms by the square of height in metres. Pregnant women were excluded. For this analysis, *overweight* was based on a BMI value of 27 or greater.

Multiple medication use was determined by asking respondents how many different medications they had taken in the last two days. Those who took more than three were classified as multiple medication users.

Use of vitamin/mineral supplements was based on questions about use of supplements in the four weeks before the survey interview, as well as questions on weekly and daily use. Respondents were grouped as regular users (those who took vitamins/minerals regularly in the past four weeks, and for five or more days in the previous week) and infrequent or non-users (non-users, occasional users, regular users in past four weeks, but for less than five days in the previous week).

Concern about nutrition to maintain/improve health was established using positive responses to the question: “Do you choose certain foods or avoid others because you are concerned about maintaining or improving your health?”

Positive responses to questions about food selection were used to establish those who tended to *avoid foods high in fat/salt/sugar*.

Several aspects of *health care utilization* were selected.

Respondents were asked if they *had a regular physician.* To determine the number of contacts with health care professionals, NPHS respondents were asked how often they had consulted certain practitioners, including family doctors or general practitioners. A variable was constructed to measure the number of contacts with the family doctor/general practitioner, or with a specialist, in the 12 months before the interview.

To establish *blood pressure check in past year*, respondents were asked, “When was the last time you had your blood pressure taken?”

conditions, chronic pain, attitudes toward self-care, and perceived unmet health care needs. When all of these factors were taken into account, women still had higher odds of consulting alternative practitioners (Table 4).

The use of alternative care appears to be somewhat of a "mid-life" phenomenon. Among individuals aged 25 to 44 and 45 to 64, the proportion who consulted alternative practitioners was 19%. This compares with about 11% for both the younger (18 to 24) and older (65 or older) age groups. This pattern remained when all of the other available factors thought to be related to use of alternative care were taken into account. Compared with seniors, the middle age groups (25-to-44 and 44-to-64) had higher odds of reporting consultations with alternative practitioners.

Largely western phenomenon

There are marked provincial differences in the use of alternative health care, which is not surprising, given that public health care coverage varies across the country. Between 3% to 9% of people in the Atlantic provinces consulted alternative health care providers in 1998/99, compared with 15% in Québec and Ontario, and 21% to 25% in the western provinces (Table 3). Compared with the reference population of Newfoundland, the odds of using alternative practitioners were significantly higher in all other provinces except Prince Edward Island (Table 4). The higher use in western Canada may partly reflect the four provinces' health care plans, which offer some coverage for chiropractic services, one of the most commonly used alternative therapies (see *Alternative practitioners*). In fact, when provincial health care funding for chiropractic is taken into account, the odds of consulting a chiropractor are higher for individuals who live in provinces that offer some coverage (data not shown).

Variations by education, income

Alternative practitioner use rose with education: close to one in five people (20%) with a college diploma or university degree reported contact with an alternative practitioner. By contrast, 12% of

Table 4
Adjusted odds ratios for use of alternative practitioners, by selected characteristics, household population aged 18 or older, Canada excluding territories, 1998/99

	Odds ratio	95% confidence interval
Sex		
Men†	1.00	...
Women	1.30*	1.16, 1.46
Age group		
18-24	1.25	0.94, 1.67
25-44	1.91*	1.56, 2.33
45-64	1.75*	1.42, 2.17
65+†	1.00	...
Province		
Newfoundland†	1.00	...
Prince Edward Island	1.57	0.85, 2.91
Nova Scotia	2.25*	1.24, 4.10
New Brunswick	2.84*	1.61, 5.00
Québec	5.77*	3.43, 9.73
Ontario	4.40*	2.65, 7.32
Manitoba	7.27*	4.24, 12.46
Saskatchewan	7.84*	4.55, 13.48
Alberta	8.35*	4.88, 14.28
British Columbia	7.47*	4.39, 12.71
Education		
Less than high school graduation†	1.00	...
High school graduation	1.16	0.93, 1.46
Some postsecondary	1.23*	1.01, 1.49
College diploma/University degree	1.42*	1.18, 1.71
Household income		
Low†	1.00	...
Lower-middle	1.33*	1.05, 1.69
Upper-middle	1.76*	1.40, 2.21
High	1.69*	1.33, 2.14
Chronic conditions		
None†	1.00	...
One	1.56*	1.32, 1.84
Two	1.71*	1.41, 2.07
Three+	2.39*	1.96, 2.91
Chronic pain		
No†	1.00	...
Yes	1.75*	1.47, 2.08
Attitude toward self-care		
Low†	1.00	...
Medium	1.27*	1.08, 1.50
High	1.72*	1.44, 2.06
Perceived unmet health care needs		
No†	1.00	...
Yes	1.51*	1.21, 1.90

Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
Notes: *Based on 13,746 respondents. A "missing" category for household income was included in the model to maximize sample size, but the odds ratio is not shown.*
† Reference category for which odds ratio is always 1.00
** $p < 0.05$*
... Not applicable

those with less than high school graduation had consulted an alternative health care provider (Table 3).

Not surprisingly, because many of the costs associated with alternative health care are out-of-pocket, use tends to be greater in the higher household income groups. While 20% of those belonging to the upper-middle and high income groups had sought alternative care, 12% of people belonging to the lowest income group reported using alternative practitioners.

When sex, age, province, number of chronic conditions, chronic pain, and the other factors were taken into account, these relationships between education and income levels and use of alternative care held. Individuals with at least some postsecondary education had higher odds of using alternative care, compared with those with less than high school graduation. And, compared with people in the low-income category, those belonging to the three higher household income groups had higher odds of consulting alternative practitioners.

With respect to use of chiropractic services, when household income level was considered along with the availability of provincial funding, both were significantly associated with chiropractor use (data not shown).

Chronic conditions, chronic pain

Individuals' use of alternative practitioners increased as the number of reported chronic conditions rose. Among people with three or more diagnosed chronic conditions, the proportion who consulted alternative practitioners was more than twice that for those who reported no conditions (25% versus 11%). Chronic pain was also a major factor. Over one-quarter (26%) of individuals who suffered from chronic pain had used the services of an alternative practitioner, compared with 15% who did not report chronic pain.

Controlling for the other factors reveals associations between the number of chronic conditions, as well as chronic pain, and use of alternative practitioners. Individuals with three or more chronic conditions had over twice the odds of consulting an alternative practitioner, compared with those with no chronic conditions. The odds were also high for people with one or two chronic conditions. And respondents with chronic pain had almost twice the odds of using an alternative practitioner, compared with their "pain free" counterparts.

Self-care/Unmet needs

Attitudes toward physician authority versus orientation to self-care are associated with the use of alternative practitioners. Among people who believed strongly in self-care, 24% reported having consulted an alternative practitioner in the past year. By contrast, 12% of those with lower scores did so (Table 3). Further, those who thought that the traditional, or mainstream, health care system did not meet their needs were more likely to seek alternative therapy. About 29% of such people had consulted alternative practitioners, compared with 16% who did not report this perception.

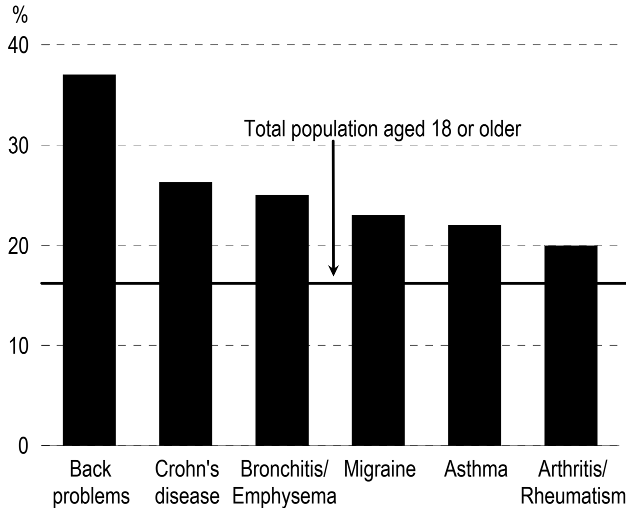
When all the other factors were considered, individuals who believed more strongly in self-care (medium/high scores) had higher odds of consulting alternative practitioners, compared with individuals who had low scores (Table 4). And individuals with perceived unmet health care needs had about one and a half times the odds of using the services of an alternative practitioner than did those who did not report unmet health care needs.

Pain management

The use of alternative practitioners was particularly high among people who had specific chronic conditions. For example, 37% of people with back problems had consulted an alternative practitioner, compared with 17% of the population aged 18 or older overall (Chart 2). The proportions who had used alternative care were also high among people with Crohn's disease, bronchitis/emphysema, migraine, asthma, and arthritis/rheumatism. And even when other factors—sex, age, province, education, household income, attitude toward self-care, and perceived unmet health care needs—were taken into account, people with these conditions still had significantly high odds of consulting alternative practitioners, compared with individuals who did not report such problems (Table 5; Model 1).

However, many of these conditions entail considerable pain, and chronic pain may lead to greater use of health services.[18-20] When chronic pain was added to the model, the association between specific chronic diseases and alternative practitioner use remained statistically significant only for asthma and back problems. This suggests that management of pain and discomfort may be an important factor in seeking alternative care.

Chart 2
Use of alternative practitioners, by presence of selected chronic conditions, household population aged 18 or older, Canada excluding territories, 1998/99



Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
Note: *All rates are significantly higher than the national rate ($p < 0.05$).*

Table 5
Adjusted odds ratios for use of alternative practitioners, by selected chronic conditions and chronic pain, household population aged 18 or older, Canada excluding territories, 1998/99

	Consulted alternative practitioner in last year			
	Model 1†		Model 2‡	
	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval
Back problems	3.77*	3.25, 4.39	3.39*	2.90, 3.96
Crohn's disease	1.65*	1.11, 2.44	1.48	0.99, 2.20
Bronchitis/Emphysema	1.54*	1.08, 2.21	1.31	0.90, 1.90
Migraine	1.36*	1.09, 1.70	1.22	0.98, 1.52
Asthma	1.39*	1.12, 1.73	1.29*	1.04, 1.60
Arthritis/Rheumatism	1.41*	1.17, 1.69	1.09	0.90, 1.32

Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
Note: *Reference category is those who have not been diagnosed with the specific disease.*
† Controls for sex, age (continuous), province, education, household income, attitude toward self-care, and perceived unmet health care needs.
‡ Controls for sex, age (continuous), province, education, household income, attitude toward self-care, perceived unmet health care needs, and chronic pain.
** $p < 0.05$*

Behaviour, health care use

People who consulted alternative practitioners appeared to be more concerned about certain health practices than were individuals who did not seek alternative health care. In 1998/99, relatively high percentages of those who had consulted an alternative practitioner reported that they were concerned about the role of nutrition in maintaining and improving health (Table 6). They also had a comparatively high likelihood of taking vitamins and minerals and avoiding foods high in fat, salt and sugar. Even when other factors that might be associated with health behaviour such as sex, age, household income, number of chronic conditions, attitude to self-care, perceived unmet health care needs and chronic pain were taken into consideration, the odds that alternative care users would engage in the majority of these practices were significantly higher than those for people who had not consulted alternative practitioners (Table 7). However, individuals who used alternative care did not have significantly lower odds of smoking, higher odds of being physically active, or lower odds of using multiple medications, compared with non-users.

If users of alternative practitioners were rejecting conventional medical care, they should show lower use of established health care services. However, this was not the case in 1998/99. Alternative health care users were more likely than non-users to have a regular physician, to have seen a specialist in the past year, to have had 10 or more physician visits in that time, and to have had their blood pressure checked in the previous two years (Table 6). Of course, since those who had consulted an alternative health care provider were also more likely than non-users to have chronic conditions and experience pain, the use of conventional medicine is not

Table 6
Prevalence of selected health behaviours and health care utilization, by use of alternative practioners, household population aged 18 or older, Canada excluding territories, 1998/99

	Users of alternative practitioner in past year	Non-users of alternative practitioner in past year
	%	%
Health behaviour		
Current smoker	26	28
Physically active	22*	19
Overweight	29	32
Multiple medication use	14	12
Used vitamin/mineral supplement in past four weeks	57*	38
Concerned about nutrition to maintain/improve health	82*	71
Avoid foods high in:		
Fat	73*	65
Salt	51*	45
Sugar	52*	44
Health care utilization		
Has regular physician	89*	86
Ten or more physician visits in past year	16*	11
Consulted specialist in past year	34*	25
Blood pressure test in past two years	90*	84

Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
** Significantly higher than non-users ($p < 0.05$)*

Table 7
Adjusted odds ratios for selected health behaviours and health care utilization by use of alternative practitioners, household population aged 18 or older, Canada excluding territories, 1998/99

	Odds ratio	95% confidence interval
Health behaviour		
Current smoker	0.93	0.80, 1.07
Physically active	1.11	0.97, 1.28
Overweight	0.85*	0.73, 0.99
Multiple medication use	0.91	0.73, 1.13
Used vitamin/mineral supplements in past four weeks	1.73*	1.52, 1.96
Concerned about nutrition to maintain/improve health	1.44*	1.23, 1.68
Avoid foods high in fat	1.59*	1.01, 1.33
Avoid foods high in salt	1.12	0.99, 1.27
Avoid foods high in sugar	1.21*	1.07, 1.37
Health care utilization		
Has regular physician	1.18	0.96, 1.45
Ten or more physician visits in past year	1.28*	1.05, 1.56
Consulted specialist in past year	1.17*	1.01, 1.35
Blood pressure test in past two years	1.28*	1.02, 1.61

Data source: *1998/99 National Population Health Survey cross-sectional sample, Health file*
Note: *Controls for sex. age, province, education, household income, number of chronic conditions, attitude toward self-care, perceived unmet health care needs, and chronic pain. Reference category is non-users of alternative practitioners.*
** $p < 0.05$*

surprising. However, even when chronic conditions and pain were taken into account, those who had sought alternative care still had higher odds of reporting most of these forms of conventional health care, compared with non-users.

Concluding remarks

The estimated 3.8 million Canadians who reported in 1998/99 that they had used the services of an alternative practitioner are supplementing, not rejecting, conventional health care. This interpretation, based on recent National Population Health Survey data, is consistent with the results of other studies.[21,22]

Analyses based on 1998/99 cross-sectional data suggest that pain management may be a factor in the use of alternative practitioners. The relationship between certain chronic conditions such as arthritis and migraine disappears when pain is taken into account. In such cases, pain may be episodic, or it may vary in intensity, thereby influencing the pattern of use of alternative care over time.

However, as in previous reports,[5,22-25] when pain is considered, the association between asthma and back problems and use of alternative practitioners remained.

People who consult alternative practitioners may be more proactive in terms of their own health care. For example, they had higher odds of taking vitamin/mineral supplements, and of avoiding foods with high fat and sugar content, compared with non-users.

Patients tend to choose specific types of practitioners for particular problems, or a mixture of practitioners to treat specific complaints.[26] The choice involves many factors and cannot be explained solely by disenchantment with traditional medicine.[20]

This analysis cannot identify the process by which people move between conventional and alternative practitioners. In some cases, such as massage therapy, acupuncture, or chiropractic care, patients may receive referrals from their physicians, who may monitor their care. In other cases, there may be no referral, and the physician may not be aware the patient is using alternative care.[27] Concern has been

expressed about the importance of physicians knowing about the use of alternative practitioners so they can take such practices into account during case management.[28] Some researchers have suggested that, in some instances, a physician's lack of knowledge about the use of alternative practitioners could be detrimental to a patient's health.[29,30]

According to estimates based on longitudinal data, the use of alternative practitioners continues to grow, but no consistent pattern appears. Over half of users reported having consulted a practitioner in only one NPHS cycle, while others did so in all three. Because the prevalence of multiple chronic diseases increases with age, and pain often accompanies certain conditions, the demand for alternative therapies could increase even further.

References

1 Statistics Canada. Health care/Self-care in *Health Reports: The Health Divide—How the Sexes Differ* (Catalogue 82-003) 2001; 12(3): 33-9.

2 National Institutes of Health. *What is Complementary and Alternative Medicine?* Available at http://www.nccam.nih.gov/nccam/fcp/faq/index.html. Accessed May 2, 2001.

3 Swain L, Catlin G, Beaudet MP. The National Population Health Survey—its longitudinal nature. *Health Reports* (Statistics Canada, Catalogue 82-003) 1999; 10(4): 69-80.

4 Tambay J-L, Catlin G. Sample design of the National Population Health Survey. *Health Reports* (Statistics Canada, Catalogue 82-003) 1995; 7(1): 29-38.

5 Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States. *New England Journal of Medicine* 1993; 328(4): 246-82.

6 Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. *Journal of the American Medical Association* 1998; 80(18): 1569-75.

7 Badgley RF. Social and economic disparities under Canadian health care. *International Journal of Health Services* 1991; 21(4): 659-71.

8 Rao JNK, Wu CFJ, Yue K. Some recent work on resampling methods for complex surveys. *Survey Methodology* (Statistics Canada, Catalogue 12-001) 1992; 18(2): 209-17.

9 Rust KF, Rao JNK. Variance estimation for complex surveys using replication techniques. *Statistical Methods in Medical Research* 1996; 5: 283-310.

10 Yeo D, Mantel H, Liu TP. Bootstrap variance estimation for the National Population Health Survey. *American Statistical Association: Proceedings of the Survey Research Methods Section*. Baltimore: August 1999.

11 Canadian Chiropractic Association. *Chiropractic Care in the Health Care System*. Available at http://www.ccachiro.org. Accessed July 30, 2001.

12 Workshop on Alternative Medicine. *Alternative Medicine: Expanding Medical Horizons, A Report to the National Institutes of Health on Alternative Medical Systems and Practices in the United States*. Chantilly, Virginia: The Office of Alternative Medicine, National Institutes of Health, 1992.

13 Aakster CW. Concepts in alternative medicine. *Social Science and Medicine* 1986; 22(2): 265-73.

14 Ontario Homeopathic Association. *What is Homeopathy?* Available at http://ontariohomeopath.com/whatns4.htm.

15 McKee J. Holistic health and the critique of Western medicine. *Social Science and Medicine* 1988; 26(8): 775-84.

16 Canadian Naturopathic Association website. Available at http://www.naturopathicassoc.ca. Accessed July 30, 2001.

17 National Health and Welfare. *Canadian Guidelines for Healthy Weights*. Report of an Expert Group convened by Health Promotion Directorate, Health Services and Promotion Branch. Ottawa: Minister of National Health and Welfare, 1988.

18 Millar WJ. Chronic pain. *Health Reports* (Statistics Canada, Catalogue 82-003) 1996: 7(4): 47-53.

19 Pérez CE. Chronic back problems among workers. *Health Reports* (Statistics Canada, Catalogue 82-003) 2000: 12(1): 41-55.

20 James FR, Large RG. Chronic pain and the use of health services. *New Zealand Medical Journal* 1992; 105(934): 196-8.

21 Druss BG, Rosenheck RA. Association between use of unconventional therapies and conventional medical services. *Journal of the American Medical Association* 1999; 282(7): 651-6.

22 Thomas KJ, Carr J, Westlake L, et al. Use of non-orthodox and conventional health care in Great Britain. *British Medical Journal* 1991; 302 (6770): 207-10.

23 Ernst E. Complementary therapies for asthma: what patients use. *Journal of Asthma* 1998; 35(8): 667-71.

24 Resch KL, Ernst E. Use of complementary therapies by individuals with 'arthritis'. *Clinical Rheumatology* 1997; 16(4): 391-5.

25 Muhajarine N, Neudorf C, Martin K. Concurrent consultations with physicians and providers of alternative care: results from a population-based study. *Canadian Journal of Public Health* 2000; 91(6): 449-53.

26 Kelner M, Wellman B. Health care and consumer choice: medical and alternative therapies. *Social Science and Medicine* 1997; 45(2): 203-12.

27 Drivdahl CE, Miser WF. The use of alternative health care by a family practice population. *Journal of the American Board of Family Practice* 1998; 11(3): 193-9.

28 Krastins M, Ristinen E, Cimino JA, et al. Use of alternative therapies by a low income population. *Acupuncture and Electrotherapy Research* 1998; 23(2): 135-42.

29 No authors listed. Alternative medicine: time for a second opinion. *Harvard Health Letter* 1997; 23(1): 1-3.

30 Liu EH, Turner LM, Lin SX, et al. Use of alternative medicine by patients undergoing cardiac surgery. *Journal of Thoracic and Cardiovascular Surgery* 2000; 120(2): 335-41.

Appendix

Table A

Use of chiropractors and other alternative practitioners, household population aged 18 or older, Canada excluding provinces, 1998/99

	Sample size	Estimated population	Consulted alternative practioner in past year: Chiropractor		Other	
		'000	'000	%	'000	%
Both sexes†	**14,150**	**22,568**	**2,530**	**11**	**1,832**	**8**
Men	6,446	11,030	1,182	11	563	5
Women	7,704	11,538	1,348	12	1,268	11
Age group						
18-24	1,427	2,855	197	7	173	6
25-44	5,775	9,548	1,172	12	900	9
45-64	4,097	6,677	858	13	622	9
65+	2,851	3,488	303	9	136	4
Province						
Newfoundland	783	405	--	--	7	2‡
Prince Edward Island	785	100	4	4§	2	2‡
Nova Scotia	877	698	30	4§	38	6§
New Brunswick	888	568	24	4§	31	5
Québec	2,386	5,581	466	8	484	9
Ontario	3,853	8,544	884	10	554	6
Manitoba	951	805	146	18	63	8
Saskatchewan	916	726	106	15	81	11
Alberta	1,291	2,094	385	18	240	11
British Columbia	1,420	3,047	478	16	333	11
Education						
Less than high school graduation	3,613	5,096	465	9	231	5
High school graduation	2,104	3,596	377	10	246	7
Some postsecondary	3,738	6,159	726	12	526	9
College diploma/University degree	4,683	7,690	960	12	830	11
Missing	12	27	--	--	--	--
Household income						
Low	2,289	2,848	197	7	169	6
Lower-middle	3,780	5,568	551	10	358	6
Upper-middle	4,737	7,839	1,040	13	673	9
High	2,465	4,750	947	20	521	11
Missing	879	1,562	140	9	110	7
Number of chronic conditions						
None	5,092	8,640	633	7	479	6
One	3,701	5,981	668	11	483	8
Two	2,333	3,739	481	13	337	9
Three+	2,971	4,131	733	18	529	13
Missing	53	78	--	--	--	--
Chronic pain						
Yes	2,252	3,358	586	17	489	15
No	11,892	19,200	1,945	10	1,343	7
Missing	6	9	--	--	--	--
Attitude toward self-care						
Low	3,622	5,801	450	8	298	5
Medium	7,037	11,190	1,251	11	878	8
High	3,099	4,818	768	16	625	13
Missing	392	758	61	8‡	--	--
Perceived unmet health care needs						
No	13,182	21,053	2,292	11	1,556	7
Yes	961	1,494	235	16	276	18
Missing	7	20	--	--	--	--

Data source: *1998/99 National Population Health Survey, cross-sectional sample, Health file*
Note: *Because of rounding, detail may not add to totals.*
† Adds to more than 17% because some respondents consulted both chiropractors and other alternative practitioners.
‡ Coefficient of variation between 25.1% and 33.3%
§ Coefficient of variation between 16.6% and 25.0%
- - Coefficient of variation greater than 33.3%