

## A B S T R A C T

*Purpose:* To determine whether users and non-users of alternative medicine in the province of Quebec differ in terms of demographic characteristics, health profile or utilization of medical services.

*Methods:* The Quebec Health Insurance Board (QHIB) medical service records of the Quebec Health Survey (1987) respondents for the 12 months before the survey were linked with respondents' survey answers. Those who saw an alternative medicine practitioner at their last professional consultation (the "users", n=169) were matched by diagnosis and area of residence with those who saw a physician instead (the "non-users", n=169).

*Results:* Users and non-users of alternative medicine differed in age, activity, education and income. After adjustment for age, education and income, the two groups had a similar health profile, but users of alternative medicine had made fewer medical visits in the previous year.

*Conclusion:* Alternative medicine attracts a particular clientele. More research is needed to understand the reasons people look to alternative therapies instead of conventional medicine.

## A B R É G É

*Objectif:* Déterminer si les utilisateurs et les non-utilisateurs de médecine alternative au Québec diffèrent quant à leurs caractéristiques démographiques, leur profil de santé et leur utilisation de services médicaux.

*Méthodologie:* Les dossiers de services médicaux de la Régie de l'assurance-maladie du Québec des répondants à l'Enquête Santé Québec (1987) pour les 12 mois précédant l'enquête ont été appariés à leurs réponses à l'enquête. Les personnes qui ont vu un praticien de médecine alternative (les "utilisateurs") à leur dernière consultation professionnelle (n=169) ont été jumelées à celles (les "non-utilisateurs") qui ont vu un médecin (n=169).

*Résultats:* Les deux groupes se distinguent sur l'âge, l'activité, l'éducation et le revenu. En contrôlant pour l'âge, l'éducation et le revenu, les deux groupes ont un profil de santé semblable, mais les utilisateurs de médecine alternative ont visité moins souvent les médecins dans l'année précédente.

*Conclusion:* Les médecines alternatives attirent une clientèle particulière. Plus de recherche est requise pour comprendre pourquoi certaines personnes utilisent les médecines alternatives plutôt que la médecine conventionnelle.

# How Different Are Users and Non-Users of Alternative Medicine?

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For many years now, there has been growing criticism of, and some would say rebellion against,<sup>1</sup> technology and the perceived impersonalization of medical care. This and a certain disenchantment with the efficacy of conventional medicine has favoured the development of unconventional or alternative therapies. Alternative medicine includes a broad spectrum of practices, ranging from the more physical/external (e.g., chiropractic, acupuncture) to the more psychological/ internal (e.g., spiritual healing, mental imaging).

The popularity of alternative medicine has been documented in Canada and elsewhere.<sup>2-8</sup> The demographic characteristics that distinguish users and non-users of alternative medicine have also been studied to a certain extent. The consistent finding is that the former are generally more educated and well-off than the latter.<sup>2,4,9</sup> However, little is known about the comparable health status of both groups (i.e., whether users of alternative medicine are sicker or healthier). Moreover, although a significant proportion of users of alternative medicine also receive conventional treatment,<sup>2,6,8,10</sup> whether their overall consumption of medical care is higher than non-users is not clear. Finally, comparisons between users and non-users of alternative medicine have rarely if ever controlled for

essential determinants of health care utilization such as need (i.e., the health condition that brought a person to seek help) and access to health care facilities.<sup>11,12</sup>

Our study attempted to fill some of these gaps by comparing users and non-users of alternative medicine in the province of Quebec, while controlling for the reason for consultation and access to health care. The objective was to determine whether the groups differed in demographic characteristics, health profile or utilization of medical care services in the short term (two weeks) and long term (one year).

## METHODS

### Sources of data and sample

The data came from two sources. The first source was the Quebec Health Survey, conducted in 1987 (QHS87) of a representative sample of 11,323 households across the province.<sup>13</sup> One respondent from each household was identified and interviewed in person about the demographic characteristics and general health status of every household member. Household members 15 years of age or over were asked to fill out a more detailed questionnaire to be sent back by mail (response rate: 81%). Interview data were available on 31,995 non-institutionalized persons and questionnaire data were available for 19,724 of them.<sup>14</sup> The second source of data was the Quebec Health Insurance Board (QHIB) claims database, which contains the complete registry of services paid to physicians on a fee-for-service basis (85-90% of all medical services). Using information from both databases (name, sex, date of birth and postal code), the QHIB medical service records of the QHS87 surveyed persons for the 12

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months before the survey were linked with their QHS87 answers. Overall linkage success rate was 88%.<sup>15</sup>

A user of alternative medicine is defined here as a person in the QHS87 who reported having seen a practitioner of a non-medical therapy at his or her last professional consultation during the two weeks before the survey. The alternative therapies studied were chiropractic, acupuncture, massage, homeopathy, herbal medicine, hypnosis, spiritual healing, naturopathy and osteopathy. A non-user was defined as someone who saw a physician at the last consultation. The medical reason for the last consultation was noted in the QHS87 for everyone, and the ICD-9 diagnosis code corresponding to each reason was attributed.<sup>16</sup>

All users of alternative medicine were first identified in the QHS87 file. The file was then searched for non-users of alternative medicine having the same ICD-9 diagnosis code (the first three digits were judged to offer sufficient precision) and residing in the same community health district (there were 32 districts in the province of Quebec at the time of the study). The latter was considered a proxy variable for access to health care facilities. Users of alternative medicine were matched with non-users by diagnosis and district of residence. When two or more non-users had the profile corresponding to one user of alternative medicine, one non-user was randomly selected. This process resulted in the selection of 169 users and 169 non-users of alternative medicine for a total sample of 338 persons.

**Variables**

The two groups were compared on the following demographic characteristics: age, sex, education, activity, marital status and household income. Health profile was defined by three dimensions: number of good health habits, self-rated health measured on a scale from 1 to 5 (1: excellent, 2: very good, 3: good, 4: fair, 5: poor), and a Quebec adaptation of the Breslow index, which is an overall health measure based on a synthesis of symptoms, chronic illness and incapacities reported by surveyed persons.<sup>17</sup> That index has six levels of severity: 1 (severe incapacity), 2 (limited incapaci-

	Users of Alternative Medicine		Non-users of Alternative Medicine		p (chi-square)
	n	%	n	%	
Age (yr)					0.016
0-29	39	23	51	30	
30-44	72	43	44	26	
45-64	42	25	52	31	
65 and over	16	9	22	13	
Sex					N.S.
Female	99	59	92	54	
Male	70	41	77	46	
Education (yr)					0.018
0-7	24	19	32	25	
8-12	42	32	55	43	
13 and over	63	49	40	32	
Activity					0.001
Working	85	50	53	31	
Student	13	8	11	7	
Homemaker	30	18	46	27	
Unemployed	10	6	29	17	
Retired	17	10	16	9	
Other	14	8	14	8	
Marital status					N.S.
Married	104	81	97	78	
Widow, divorced, separated	14	11	17	14	
Never married	10	8	10	8	
Household income					0.005
< \$12,000	8	5	30	20	
\$12,000-\$19,999	27	18	22	14	
\$20,000-\$29,999	38	25	37	24	
\$30,000-\$39,999	26	17	23	15	
\$40,000 and over	53	35	41	27	

ty), 3 (two or more chronic conditions without incapacity), 4 (one chronic condition), 5 (symptomatic only) and 6 (no health problem). Given the relatively small sample, the six levels were grouped into three larger categories (levels 1 and 2, 3 and 4, 5 and 6) to increase the power of the analyses. Data on the first two health dimensions were available only for those 15 years of age and older (n=129 in each group), since they came from the self-administered questionnaire. Utilization of medical services was defined as the number of visits to general practitioners and specialists for two periods: two weeks and one year before the date on which each QHS87 respondent was surveyed.

To test differences between users and non-users of alternative medicine, analyses were made using the chi-square test for demographic variables and the Cochran-Mantel-Haenzel test for health variables and utilization of medical services, adjusting for demographic variables that significantly differentiated the two study groups.

All analyses were done with SAS 6.1 software (SAS Institute Inc., Cary, NC, USA).

**RESULTS**

The diagnoses for which patients consulted practitioners of alternative medicine were varied (data not shown). A majority (56%) presented with problems of the musculoskeletal system and connective tissue (class XIII of the ICD-9). The frequency of every other group of reasons for consultation represented no more than 8% of cases. These groups included respiratory diseases, injury and poisoning, ill-defined conditions, special investigations and examinations, prophylactic measures and other reasons.

The two study groups were no different in terms of sex and marital status (Table I). However, they differed significantly on the four other demographic characteristics studied. Although a t-test of the mean age of users (40 years) and non-users (41 years) showed no significant difference, grouping

**TABLE II**  
**Health Profile of Users and Non-Users of Alternative Medicine**

Variable	Users of Alternative Medicine		Non-users of Alternative Medicine		p (Cochran-Mantel-Haenszel)*
	n	%	n	%	
Good health habits (no.)					N.S.†
1-2	11	9	25	22	
3	41	33	39	35	
4	55	44	36	32	
5	17	14	12	11	
Self-rated health					N.S.
Excellent	10	8	16	12	
Very good	52	40	42	33	
Good	48	37	43	33	
Fair/poor	19	15	28	22	
Overall health					N.S.
Limited or severe incapacity	13	8	40	24	
One or several chronic conditions	99	60	78	46	
Symptomatic or no health problem	54	32	50	30	

\* Adjusted for age, education and income  
† Non significant at p = 0.05

**TABLE III**  
**Visits to Physicians by Users and Non-Users of Alternative Medicine**

Number of Visits by Type of Physician and Period	Users of Alternative Medicine		Non-users of Alternative Medicine		p (Cochran-Mantel-Haenszel)*
	n	%	n	%	
General practitioner (2 wks before survey)					0.001
0	156	92	91	54	
1	7	4	64	38	
2 or more	6	4	14	8	
Specialist (2 wks before survey)					0.006
0	168	99	141	83	
1	1	1	14	8	
2 or more	0	0	14	8	
General practitioner (1 yr before survey)					0.001
0-2	74	44	47	28	
3-7	58	34	59	35	
8 or more	37	22	63	37	
Specialist (1 yr before survey)					N.S.†
0	81	48	60	35	
1-3	53	31	57	34	
4 or more	35	21	52	31	

\* Adjusted for age, education and income  
† N.S.: Non significant at p = 0.05

respondents in categories showed that the former group was significantly more concentrated in the 30 to 44 year-old group. Users of alternative medicine were also more likely to be working, have a higher education and live in a household whose income was higher.

Before adjusting for any demographic variables, users and non-users of alternative medicine were significantly different on two of the three health dimensions studied:

the two groups had similar perception of their health, but users of alternative medicine had more good health habits and better overall health (i.e., fewer had incapacity, but more had chronic conditions). After adjusting for age, education and household income, i.e., the demographic variables that differentiated users and non-users of alternative medicine (activity status was also significant, but this variable was highly correlated with income), the

two groups were no longer different on any of the three health dimensions (Table II). After this adjustment, the difference on overall health did not quite reach statistical significance (p= 0.06).

Because their distribution was far from normal, visits to physicians were grouped in three categories for each variable. After adjustment for the same three demographic variables as described earlier, the two groups were significantly different on three of the four utilization variables. Users of alternative medicine made fewer visits than non-users to both general practitioners and specialists in the short term (two weeks before survey) and to generalists in the long term (one year before survey) (Table III). The two groups had similar utilization of specialists' services in the year prior to the survey.

## DISCUSSION

These results show that users of alternative medicine represent a particular group of people. As other studies have indicated,<sup>2,4,18,19</sup> they are more likely to be well-off, better educated and young adults. These differential characteristics largely account for the apparently more favourable health profile of users than non-users of alternative medicine. Without being able to discuss the impact of alternative medicine on health, we can hypothesize that both a selection bias (particular people consult practitioners of alternative therapies) and a positive effect of alternative medicine may be operating. Yet, given their distinctive demographic profile (i.e. young adults, more educated), it is more likely that users had this health profile before consulting unconventional practitioners who, in turn, reinforced the good habits of their clients. In general, users of alternative medicine appeared to be a more homogeneous group than non-users. On almost all study variables, non-users were more evenly distributed across the different categories of respondents.

Some studies have shown that as many as 83% to 88% of clients of alternative medicine also used conventional medical services.<sup>2-8</sup> The available data did not allow us to assess whether users of alternative medicine also consulted physicians for the same health problem. As an imperfect proxy estimation of this possibility, we

measured the number of medical visits in the two week period during which a practitioner of alternative medicine was consulted. It was assumed that if duplication of services (i.e., parallel use of both conventional and unconventional medicine) were happening, it would reasonably occur within a two week period. The current results indicated that users of alternative medicine made very few visits (and much fewer than non-users) to physicians during those two weeks. Indeed, only 8% of users also saw a physician in that period, compared with 46% of non-users. The very short time frame on which this finding is based may explain, at least in part, why it seems so different from other studies.

It is interesting to note that over a period of one year, which should be representative of a person's usual consumption of medical care, users of alternative medicine made fewer visits than non-users to general practitioners, but not significantly fewer visits to specialists. This suggests that for their primary care, users of alternative medicine may, to some extent, prefer unconventional practitioners, but when they need more advanced care they too consult specialized physicians. In this sense, alternative medicine could replace or complement only a certain level of medical care.

The fact that in the year before the QHS87 users of alternative medicine made 40% fewer medical visits than non-users may at first glance represent substantial savings. This, however, does not take into account the cost of alternative therapies used during that year, whether paid for by clients themselves or partly or totally reimbursed by private or public insurance. Moreover, even though users and non-users of alternative medicine rate their health similarly, their differential demographic and health profile suggests that the latter group is likely to have greater health needs. This may account in part for their greater utilization of medical care. So if users of unconventional therapies do not see physicians as often because they do not need to, the potential savings are not due to the alternative medicine itself. However, it is possible that some medical visits were avoided (and money saved) by consultation with less expensive non-conventional practitioners. To clarify

this issue, more studies using solid methodology are needed to evaluate the effectiveness and efficiency of the various types of alternative practices.<sup>1,20</sup>

This study has a number of limitations. First, the definition of who is a user of alternative medicine and who is not may seem somewhat restrictive. A person may be a user without having seen a practitioner of a non-medical therapy at the last professional consultation (i.e., the definition used here). But defining who is a user of alternative medicine is problematic in every study: Is it someone who saw an unconventional practitioner once in his/her life? Once or more in the last year, but never before? Once or many times a year for many years? At least the criteria used here were operational, and reason for consultation and general access to health care facilities were controlled for, which has rarely if ever been done in previous studies. Second, the methodology employed (e.g., matching patients by diagnosis and area of residence) limited the sample size, which in turn did not permit analysis of specific therapies. Unfortunately, analysis by type of therapy is rarely done, except for more popular therapies (e.g., chiropractic). Third, only medical care reimbursed on a fee-for-service basis is contained in the QHIB claims database. However, this should not be an important source of bias, since only in remote areas (where there happen to be very few users of alternative medicine) is there a significant proportion of medical services (up to 15%) paid on a salary basis.

### CONCLUSION

Despite its limitations, this study used an original methodology to shed light on the characteristics of a growing number of consumers of alternative medicine. The results showed that users of unconventional therapies are relatively socially advantaged people: well-off, better educated and younger adults who, in turn, are in better health than non-users. They generally consume less medical care, but this is not totally accounted for by their demographic profile. Studies using other types of methodology (e.g., survey or qualitative approach) could be useful in understanding the reasons why

people look to alternative therapies instead of conventional medicine.

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