

# The Use of Complementary and Alternative Medicine in a General Population in South Korea: Results from a National Survey in 2006

The purpose of this survey was to obtain information on the prevalence, costs, and patterns of use of complementary and alternative medicine (CAM) in a general population in the Republic of Korea. In 2006, we conducted nationwide and population-weighted personal interviews with 6,021 adults ranging from 30 to 69 yr of age; the final sample consisted of 3,000 people with a 49.8% response rate. In addition to their general socio-demographics, the respondents were asked about their use of CAM during the previous 12-month period, costs, sources of information, and reasons for use. The prevalence of use overall was 74.8%, while biologically based CAM therapies were the most likely type of use (65.4%). The median annual out-of-pocket expenditures for CAM therapies was about US\$203. The primary reason for using CAM was for disease prevention and health promotion (78.8%). The main source of advice about CAM therapies use was most likely to be from family and friends (66.9%). Our study suggests that CAM use has been and continues to be very popular in South Korea. Conventional western medical doctors and governments should obtain more evidence and become more interested in CAM therapies.

**Key Words :** Survey; Prevalence; Complementary Therapies; Utilization; Adult; Korea

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## INTRODUCTION

Interest in the use of complementary and alternative medicine (CAM) is increasing worldwide, even as conventional medical science continues to make remarkable advances. Data from national surveys performed in various countries indicate that CAM therapies are popular (1-12) and that, consequently, the use and expenditures for CAM have risen substantially (13, 14) in recent years.

In 1999, the first national survey on CAM use among the general population in the Republic of Korea reported that 29% of the population, as determined by telephone interview, had used CAM within the preceding 12-month period (15). Although CAM use in South Korea has presumably increased at a considerable pace since then, no further national surveys have been conducted. Accordingly, the purpose of this survey was to obtain current information about the prevalence, costs, and patterns of CAM use in a general popula-

tion in South Korea.

## MATERIALS AND METHODS

### Subjects

We conducted our survey through personal interviews held between May 18 and June 16, 2006. The initial population sample of 6,021 adults aged from 30 to 69 yr, selected by a proportionate quota and systematic sampling method, was exactly proportional with respect to area, age, and gender to a general South Korean population, as based on the 2000 Population and Housing Census by the Korean National Statistical Office. A financial incentive US\$2 was offered for participation. Each subject gave verbal consent before the interview. The average administration time of the interviews was about 35 min. In the end, the final sample consisted of 3,000

completed interviews with a 49.8% response rate. We permitted the use of this survey by a marketing researching company (Research & Research, Inc., Republic of Korea).

### Definition of CAM

In the questionnaire for the interview, which was developed by four medical doctors and one epidemiologist, CAM was defined as “a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine” (16). Twenty-seven different types of CAM were categorized into six groups: five groups [1)-5), *infra*] were defined by the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institute of Health (16), whereas the sixth unclassified group [6), *infra*] included certain CAM therapies specific to Korea that did not fit precisely into the NCCAM classification system.

1) Whole medical systems: Korean oriental medicine (KOM), Ayurveda, Homeopathy

2) Mind-body therapies: prayer for health reasons, hypnosis, music and art therapy, yoga, meditation, Dantian breathing, Kuksundo, Tai chi and Qi movement

3) Biologically based therapies: dietary supplements (non prescribed vitamins and mineral supplements, ginseng and non-mineral, non-vitamin and non-ginseng dietary supplements), herbs (non-processed and not prescribed) and animal extracts (for health reasons) in the diet-based therapies

4) Manipulative and body-based therapies: chiropractic manipulation, massage

5) Energy healing therapies: therapeutic Qigong, therapeutic touch, magnetic fields therapy, bio-active frequency therapy

6) Unclassified therapies: spa for health reasons, hand acupuncture, taping therapy

### Contents of the survey

From the questionnaire, each subject was asked to provide, describe, or estimate his or her: demographic and socioeconomic data, including age, gender, area/region of residence, marital status, religion, occupation, monthly family income, and educational attainment; medical conditions, such as chronic disease, disability or infirmity (any such report was regarded as a medical problem), and self-perception of general health based on a three-tiered grading system (good/fair/poor); personal use of any of the aforementioned 27 types of CAM therapies in the previous 12 months (a subject reporting any use was considered a CAM user); primary reason for using each type of CAM, respectively; main sources of advice about the use of CAM therapies, such as family and friends, media, medical doctors, pharmacists, oriental medical doctors, or CAM distributors; and mean out-of-pocket expenditures for using CAM in the previous 12 months.

### Statistical analysis

We performed data analyses using SPSS for Windows version 12. We used the chi-square test to examine bivariate associations between our predictor variables and CAM use. The conventional *p* value of 0.05 was used for all tests of significance.

## RESULTS

### Demographic and socioeconomic data

The demographic and socioeconomic characteristics of the subjects, cross-referenced with the prevalence of CAM use,

**Table 1.** Demographic and socioeconomic characteristics of the CAM users in South Korea in 2006

Characteristics	Total No. (%) N=3,000	National Data*% N=2,244	CAM user % <sup>†</sup> N=2,244	<i>p</i> value
Gender				
Female	1,507 (50.2)	50.4	80.3	<0.001
Male	1,493 (49.8)	49.6	69.3	
Age (yr)				
30-39	1,088 (36.3)	32.9	69.9	<0.001
40-49	925 (30.8)	32.2	76.1	
50-59	572 (19.1)	20.6	79.4	
60-69	415 (13.8)	14.3	78.6	
Region of residence				
Metropolitan	1,464 (48.8)	47.1	76.6	0.03
Others	1,536 (51.2)	52.9	73.1	
Marital status				
Married	2,700 (90)	80.7	76.3	<0.001
Never married	225 (7.5)	9.1	56.9	
Others <sup>‡</sup>	75 (2.5)	10.2	74.7	
Work status				
Employed	2,072 (69.1)		72.7	<0.001
Not employed	928 (30.9)		79.4	
Religion				
Have	1,715 (57.2)	55.9	78.1	<0.001
None	1,284 (42.8)	44.1	70.3	
No answer	1 (0.0)			
Level of education				
Under high school	511 (17.0)	27.9	79.6	0.02
High school graduate	1,581 (52.7)	40.3	73.7	
College or more	907 (30.2)	31.8	74.0	
No answer	1 (0.0)			
Monthly family income (won/month)				
<2 million	552 (18.4)		74.6	0.008
2-2.99 million	1,136 (37.9)		71.9	
3-3.99 million	1,000 (33.3)		76.5	
≥4 million	311 (10.4)		80.4	
No answer	1 (0.0)			

\*, Korea National Statistical Office (2005); <sup>†</sup>, CAM user percentages by characteristic groups. *p* values are based on  $\chi^2$  tests; Others<sup>‡</sup>, cohabiting, divorced, separated, widowed.

User may have used more than one CAM therapy.

are shown in Table 1. First, the use of any CAM modality was reported to be higher among women (80.3%) than men (69.3%) ( $p < 0.001$ ). Furthermore, the subjects significantly more likely to use CAM were those in the 50- to 59-yr age bracket were ( $p < 0.001$ ); living in metropolitan cities ( $p < 0.005$ ); with marital experience, as opposed to those who had never married ( $p < 0.001$ ); not employed ( $p < 0.001$ ); with religious beliefs ( $p < 0.001$ ); with education levels under high school ( $p = 0.02$ ); and with a higher level of monthly family income ( $p = 0.008$ ).

### Medical conditions & self-perception of general health

The medical conditions and perceived general health perceptions of the subjects are shown in Table 2. In this regard, the subjects significantly more likely to use CAM were those with medical problems ( $p < 0.001$ ); and lower self-perceptions of general health status ( $p < 0.001$ ).

### Prevalence and types of CAM use

The prevalence and types of CAM use are shown in Table 3. Of the 3,000 subjects, 2,244 (74.8%) reported using CAM in the previous 12-month period. On average, each CAM user had employed approximately 2.5 types of CAM therapy. In aggregate, CAM users had employed a total of 5,727 CAM therapies. The most common category of CAM used was biologically based therapies (65.4%), followed by whole medical systems (31.7%), mind-body therapies (5.1%), unclassified therapies (2.1%), manipulative and body-based therapies (1.8%), and energy-healing therapies (0.5%). Among whole medical systems, 31.6% of the subjects had used Korean Oriental Medicine (KOM), commanding an absolute majority in this category. For the biologically based therapies, 60.2% of the subjects had used dietary supplements, 13.9% had used unprocessed and non-prescribed herbs, 7.5% had used animal extracts for health reason, and 4.8% had used diet-based therapies. More specifically, among the use of dietary supplements, vitamin and mineral supplements (not pre-

**Table 2.** Medical conditions & the general self-health perception of CAM users and nonusers in South Korea in 2006

Characteristics	Total No. (%) N=3,000	CAM user % <sup>†</sup> N=2,244	<i>p</i> value
Self-perceived health status			
Good	2,070 (69.0)	71.9	<0.001
Fair	620 (20.7)	79.5	
Poor	310 (10.3)	84.5	
Having medical problem			
Yes	891 (29.7)	87.3	<0.001
No	2,109 (70.3)	69.5	

\*. CAM user percentages by characteristic groups.

*p* values are based on  $\chi^2$  tests.

User may have used more than one CAM therapy.

scribed) accounted for 34%; non-vitamin, non-mineral and non-ginseng dietary supplements, 33%; and ginseng, 23.1%. Finally, the five most common types of CAM therapies reported were dietary supplements (60.2%), KOM (31.6%), non-processed and non-prescribed herbs (13.9%), animal extracts (7.5%) and diet-based therapies (4.8%).

### Reasons for CAM use

The primary reason for using CAM therapies (total N=5,727) was for the purpose of disease prevention and health promotion (N=4,514, 78.8%) and the other main reason was for the treatment of medical problems (N=1,162, 20.3%). Under the first reason, CAM therapies were most likely to be used for a lack of energy (N=2,625, 45.8%), followed by disease prevention (N=519, 9.1%), anti-aging (N=416,

**Table 3.** Frequencies and percents of CAM users by the type of CAM therapy in South Korea in 2006 (n=3,000)

CAM categories and specific modalities	Used during past 12 months No (%) <sup>*</sup>
Whole medical system	950 (31.7)
Traditional Chinese Medicine	948 (31.6)
Ayurveda	2 (0.1)
Homeopathy	3 (0.1)
Mind-body therapies	150 (5.1)
Prayer for health reasons	12 (0.4)
Hypnosis	2 (0.1)
Music and Art therapy	10 (0.3)
Yoga	82 (2.7)
Meditation	20 (0.7)
Dantian breathing	26 (0.9)
Kuksundo	3 (0.1)
Tai chi & Qi movement	16 (0.5)
Biologically based therapies	1,962 (65.4)
Dietary supplements	1,805 (60.2)
Vitamins and mineral supplements	1,020 (34.0)
Ginseng	693 (23.1)
The others	990 (33.0)
Non-processed herbs	417 (13.9)
Animal extracts	225 (7.5)
Diet-based therapies	144 (4.8)
Manipulative and body-based therapies	55 (1.8)
Chiropractic manipulation	14 (0.5)
Massage	41 (1.4)
Energy healing therapies	15 (0.5)
Therapeutic Qi gong	6 (0.2)
Therapeutic touch	1 (0.0)
Magnetic fields therapy	7 (0.2)
Bio-active frequency therapy	2 (0.1)
Unclassified therapies	63 (2.1)
Spa for health reasons	20 (0.7)
Hand acupuncture	40 (1.3)
Taping therapy	3 (0.1)

\*. CAM users may have used more than one CAM therapy within the each CAM modality.

7.3%), beauty (N=311, 5.4%), weight reduction (N=185, 3.2%), stress management (N=166, 2.9%), stamina (N=160, 2.8%), longevity (N=132, 2.3%) and others (N=51, 0.9%).

### Main source of advice about CAM use

The main source of information or advice about CAM therapies (total N=2,244) was most likely to be family and friends (N=1,500, 66.9%), followed by media (N=263, 11.7%), medical doctor (N=92, 4.1%), pharmacist (N=68, 3.0%), doctor of Oriental medicine (N=47, 2.1%), distributor of CAM (N=41, 1.8%), and others (by oneself or no answer (N=233, 10.4%).

### Costs for CAM therapies

The median out-of-pocket expenditures relating to CAM use during the 12-month period was KRW 200,000 or US\$203.6 (at the exchange of rate of KRW1,000 - approximately US\$1.018 in the first half of 2006). In the vast range of annual expenditures by any individual CAM user during the period, from KRW10,000 to KRW10,280,000 at a maximum, 31.3% of CAM users had paid between KRW100,00-299,000, 22.8% had paid less than KRW100,000, 16.4% had paid between KRW300,000-499,000 won, 11.4% had paid more than KRW700,000, and 8.6% had paid between KRW500,000-699,000.

## DISCUSSION

The increasing use of CAM therapies, as well as raised interests and rising costs, is a global phenomenon with a prevalence rate ranging from 15% to 76% (2, 4, 5, 7-14) in various countries. Our study suggests that about 75% of adults in the Republic of Korea had used some form of CAM in a 12-month period between 2005 and 2006, the median annual out-of-pocket expenditures for which was KRW200,000 or about US\$203.6. This prevalence rate is much higher than that reported in Western countries (2, 5, 8-12) and similar to that in Asian countries (4, 7). A comparison of our results with those of the previous national survey by Lee *et al.* (15) would appear to suggest that the prevalence of CAM use and the expenditures therefore are on the rise in South Korea. The prevalence of CAM use was 29% in 1999 (15) and about 75% in 2006. The mean annual out-of-pocket expenditure for CAM therapies was KRW72,750 or US\$61 in 1999 (15) and KRW200,000 or \$203 in 2006. However, these apparent increases may be explained by the different definitions of CAM use between the two surveys. Whereas our study looked at the use of CAM by all people regardless of medical condition, the prior study had limited its examination to CAM users who had also experienced symptoms or disease.

The higher prevalence of CAM use in South Korea, as compared to Western countries, may be related with KOM. Originally developed under the influence of Traditional Chinese Medicine (TCM), KOM ultimately evolved into a more Korean style of practice. Since the end of the 19th century, both KOM and conventional Western medicine were accepted as orthodox forms of medical care. Nevertheless, as Lee *et al.* suggested in their previous national study (15), and the present study also shows, KOM is now regarded as one of CAM therapies, possibly because TCM and modified versions of TCM in various countries are accepted around the world as a kind of CAM modality. This conceptualization of KOM is an important factor that increased the prevalence rate of CAM use shown in our study, similar to the rate of some Asian countries that regard TCM as conventional medicine (4, 7). Thus, it will be an important task to develop a consensus for the definition and taxonomy of CAM therapies in South Korea, as well as the rest of the world.

Our study found varying prevalence rates based on gender, demographic and socioeconomic factors, and health. By gender, CAM use was likely to be greater among women. With respect to demographic and socioeconomic factors, persons in the 50- to 59-yr age bracket, persons living in a metropolitan area, persons not employed, and persons with marital experience, religious beliefs, education level under high school, or higher level of family income were more likely to use CAM. Persons with medical problems and persons with lower self-perceptions of their general health status were also more likely to use CAM. Our prevalence of CAM use by people having medical problem was 87.3%. From the results of previous surveys, CAM usage rates of patients with chronic disease ranged from 33.2% to 84% (17-20), and the rates of cancer patients ranged from 41% to 72.7% (21-24) in South Korea. But because of the differences in the respective contents of these various surveys, it is hard to conclude that CAM usage rates of patients with chronic disease in 2006 rose in comparison to the rates previously reported. Still, with the exception of the educational factor, our results generally support those of previous reports from the West, which found that CAM use was more likely among persons with higher education (3, 5, 6, 8-10). Our results, on the other hand, differ somewhat from those of some Asian studies (4, 7).

There were various reported patterns of CAM therapy use according to the different nations. In our study, the biologically based therapies were the most commonly used, whereas mind-body therapies were not commonly used. But in the USA, mind-body therapies were found to be more popular than biologically based therapies (5), which may be related to cultural or religious differences.

Finally, this survey has limitations. First, there was an age limitation of the respondents. Because persons under 30 or over 70 yr of age were excluded, we could not obtain information about the usage patterns of CAM therapies from the very young and the elderly. Further surveys that include sub-

jects under 30 or over 70 are needed. Secondly, multi-variate statistical analysis was not performed in our study, and further study for the factors on influencing the CAM use should be followed.

To protect the CAM users from unnecessary and unproven CAM therapies, the government, as well as the National Health Insurance Corporation and the various medical associations concerning CAM therapies in South Korea, must take greater interest in CAM therapies. First, financial support from the government is urgently needed in order to research CAM therapies to provide evidence of their safety, efficacy and cost-effectiveness. For example, even though 60.2% of South Koreans use dietary supplements, almost without prescription and irrespective of concurrent use with other pharmaceuticals, little information exists about these supplements. A WHO study reported that such trends raise concerns over the quality of the CAM products used, their therapeutic appropriateness for a given condition and the lack of medical follow-up (25). As such, the government should provide information about the benefits and risks of CAM therapies, such as the interaction between commonly used dietary supplements and prescribed conventional western drugs, and develop guidelines for use. This would also raise awareness among the orthodox medical community, which at present is largely uninterested in CAM therapies and skeptical of their benefits, so that complementary and alternative treatment modalities may be used more often, more effectively, and more safely in conjunction with the other standard forms of treatment available to patients.

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