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# The Use of Complementary and Alternative Medicine Practices Among Australian University Students

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A survey of 518 university students in Australia was conducted to gain a better understanding of complementary and alternative medicine (CAM) use. Results indicated that 81.1% of the students used at least 1 of 24 CAM practices. Top practices were relaxation, massage, herbs, art therapy, and prayer. The most common health reasons for using CAM were stress or psychosomatic issues (i.e., anxiety, allergies, stress, and headaches). Other reasons reflected a positive perspective: lifestyle, availability, and holistic health. Students who did not use CAM cited economic factors as the chief reason. Thus, these results offer further insights into the growing worldwide use of CAM.

**Keywords:** alternative medicine; Australian university students

One of the major changes in recent years in the health practices of Americans and the citizens of other industrialized nations has been the increased use of complementary and alternative medicine (CAM) practices. Eisenberg et al. (1998) reported that 42% of American adults used at least 1 of 16 alternative therapies during the previous year. This was an increase from 34% in 1990 (Eisenberg et al., 1993). They define alternative medicine "as medical interventions not taught widely at U.S. medical schools or generally available at U.S. hospitals. Examples include acupuncture, chiropractic, and massage therapy" (Eisenberg et al., 1993, p. 246). Eisenberg et al. (1998) reported that out-of-pocket expenditures in 1997 for alternative therapies were conservatively estimated to be \$27 billion, which is comparable to out-of-pocket expenditures for all U.S. physician services.

Health maintenance organizations and other health insurers are increasingly offering alternative medicine programs and benefits. For example, Blue Cross and Blue Shield of Maryland offers acupuncture services for chronic pain management and chiropractic services as part of its standard coverage (State of Maryland, 2003). In addition, a growing number of American medical schools are offering courses and programs on CAM. The University of Arizona has a Program in Integrative Medicine that examines yoga, meditation, and other modalities, such as traditional Chinese medicine (Weil, 2004), and Creighton Uni-

versity School of Medicine has a senior elective on integrative and alternative medicine that examines the scientific principles of chiropractic, homeopathy, traditional Chinese medicine, and mind-body medicine (Jeffries, 2004).

Research in the United States indicates that the growing interest in CAM is found not only among the general population (Astin, 1998) but also among African Americans and Hispanics in New York (Cushman, Wade, Factor-Litvak, Kronenberg, & Firester, 1999), the Japanese and Chinese in California (Bair et al., 2002), and Latina women in Massachusetts (Laws & Carballeira, 2003). CAM is also used by patients with cancer (Cassileth, Lusk, & Strouse, 1984), diabetes (Yeh, Eisenberg, Davis, & Phillips, 2002), and functional disabilities (Hendershot, 2003). The percentage of the population of industrialized countries, other than the United States, that use alternative therapies includes 10% in Denmark (Rasmussen & Morgall, 1990), 15% in Canada (Millar, 1997), and 49% in Australia (MacLennan, Wilson, & Taylor, 1996). The survey by MacLennan et al. (1996) was a multistage representative sample of persons 15 years or older living in South Australia, which required 3,004 person interviews and was one of the largest surveys of CAM in Australia. An additional survey of Australian physicians (Ban, 1998) indicated that one sixth of Australian physicians treat their patients with acupuncture, hypnosis, or other alternative therapies. The Australian Medical Association keeps a list of members who practice alternative therapies similar to lists of other medical specialties, and general practitioners may take courses in CAM as part of their continuing medical education requirements. In one division near Sydney, Australia, the use of traditional Chinese medicine was so prevalent that the local medical society produced a traditional Chinese medicine kit that addressed the issue of drug and traditional herb interactions (van Santen, 2000). In addition, Australian health care plans cover CAM practices such as acupuncture, homeopathy, Chinese herbalism, aromatherapy, and reflexology (Grand United, 2004).

Although CAM practices are rising, little is known about why different segments of the population are using or not using these therapies. University and college students have generally been innovators and early adopters of new health practices (Rogers, 1995). From smoking cessation to vegetarian diets, college students have heralded new health behavioral patterns. Thus, it is important to understand their health patterns, in their own right, as well as to better understand future trends in the general population. Surveys of the general populations of Western industrialized nations show that Australia has one of the highest rates of the use of CAM. Therefore, it is useful to examine Australian university students to gain a better understanding of worldwide trends in the use of CAM.

## METHODS

A survey of Australian university students was conducted in 2000 at the University of Newcastle, a medium-sized state university on the eastern coast of Australia. Before commencing the study, Institutional Review Board approval was received from the Human Research Ethics Committee of the University of Newcastle (Approval No. H-956-0900). A convenience sample of 518 university students (76% female) studying psychology, education, and nursing agreed to complete a survey on the use of CAM. The questionnaire survey consisted of several sections. The first section contained a list of 24 CAM practices (see Table 1). For each practice, the students were queried as to their use. Each of the 24 CAM practices was clearly defined based on definitions from the Web site of the U.S. National Center for Complementary and Alternative Medicine of the National Institutes of Health.

**TABLE 1. Complementary and Alternative Practices**

Acupuncture	Lifestyle diet (vegetarian, macrobiotic, etc.)
Ayurvedic medicine	Massage
Aromatherapy	Megavitamin therapy
Art therapy	Meditation
Biofeedback	Mental imagery
Chiropractic	Music therapy
Dance therapy	Prayer
Energy healing	Relaxation techniques
Folk/home remedies	Self-help groups
Herbal medicine	Spiritual healing
Homeopathy	Tai chi
Hypnosis	Yoga

**TABLE 2. Complementary and Alternative Medicine Use**

Practice	%
Relaxation techniques	41.7
Massage therapy	38.2
Herbal medicine	37.3
Art therapy	32.2
Prayer	30.9
Music therapy	29.5
Lifestyle diet	22.6
Meditation	22.6
Mental imagery	18.1
Chiropractic services	13.9

The second section asked for which medical or health conditions they would use or consider using CAM. The third section asked users of CAM what their main reasons are for using these practices, and the fourth section asked nonusers what their main reasons are for not using CAM. Additional items examined attitudes toward CAM, confidence in practicing CAM, social influences on CAM use, and activities related to CAM use. The last section included demographic questions, such as ethnic background, gender, age, and years at the university.

## RESULTS

The results of the study indicated that 81.1% of the students used at least 1 of 24 CAM practices. The most common practices were relaxation techniques (41.7%), massage therapy (38.2%), herbal medicine (37.3%), and art therapy (32.2%; see Table 2). Female students showed statistically significant greater use of CAM in general (82.5% vs. 77.2%; odds ratio [OR] = 1.65, 95% confidence interval [CI] = 1.08-2.52), as well as for therapies (e.g., relaxation techniques, 44.0% vs. 34.1%; OR = 1.77, 95% CI = 1.22-2.59, and massage therapy, 40.3% vs. 31.7%; OR = 1.91, 95% CI = 1.21-3.01). The most common health and medi-

**TABLE 3. Health Reasons for Using Complementary and Alternative Medicine**

Reason	%
Headaches	62.4
Cold and flu	59.0
Stress	57.6
Allergies	48.8
Anxiety	46.9
Back problems	42.6
Pain	42.4
Depression	39.3
Digestive problem	31.2
Arthritis	27.6

**TABLE 4. Reasons for Using Complementary and Alternative Medicine**

Reason	%
Looking for better results	34.5
Lifestyle	33.1
Fewer side effects	32.1
Availability	28.6
Holistic approach	28.6
Belief system	26.4
Emphasis on prevention	24.5
Curiosity	23.1
Sense of control	22.1
More caring	19.0

cal conditions for which students use or consider using CAM were for headaches (62.4%), colds and flu (59.0%), stress (57.6%), and allergies (48.8%; see Table 3).

In addition, the main reasons for using CAM were the search for better results (34.5%), lifestyle (33.1%), fewer side effects (32.1%), and holistic approach (28.6%; see Table 4). Among those who did not use CAM, their primary reasons were that it is not covered by Medicare (the Australian medical plan; 32.7%), high cost (27.6%), lack of research (22.4%), and lack of credibility (20.4%; see Table 5).

## DISCUSSION

This study is one of few investigations that has examined CAM use in a university population. A rate of use of 81.1% indicates that this population uses CAM at rates far higher than previously reported, although the trend over the past years shows an increasing number of individuals using CAM (MacLennan et al., 1996). The results also indicate that female students use CAM practices at greater rates than male students do. This is consistent with previous studies (e.g., McFarland, Bigelow, Zani, Newson, & Kaplan, 2002) that indicate that women use CAM more frequently than men do.

TABLE 5. Reasons for Not Using Complementary and Alternative Medicine

Reason	%
Not covered by Medicare	32.7
High cost	27.6
Lack of research	22.4
Lack of credibility	20.4
Lack of availability	19.4
Inconvenience	17.3
Distrust alternative practitioner	16.3
No need	14.3
Lack of doctor's referral	9.2
Fear of side effects	6.1
Family/traditional background	6.1

An examination of the top five health reasons for using CAM indicates that four or possibly five (if we include colds and flu) health areas are related to stress or psychosomatic issues (i.e., anxiety, allergies, stress, and headaches). Therefore, to address these areas, the college students chose relaxation techniques, massage therapy, art therapy, and prayer (four of the top five CAM practices). That is, in contrast to the older adult population that tends to use CAM to address chronic illness (e.g., cancer, chronic pain), the relatively healthy college population is more concerned about stress-related issues.

Another difference between the college students and the older adult population is that older adults frequently mention dissatisfaction with conventional medical care as their reason for using CAM (Vincent & Furnham, 1996). In contrast, among the top reasons for using CAM in this study were lifestyle, availability, and the holistic approach. That is, the college students emphasized a positive perspective for using CAM. Among students who did not use CAM, economic factors (e.g., not covered by Medicare of Australia and high cost) were the top two reasons.

In conclusion, CAM practices are increasing worldwide among the general population and among university and college students. The results of this study indicate a larger use of CAM, different health concerns, and different reasons for use than previously reported among general populations in Western nations. Thus, these results offer further insights into the growing use of CAM practices.

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*Biographical Data.* Robert H. Feldman, PhD, is a health psychologist and professor of health behavior at the University of Maryland. He has a doctorate in cross-cultural social psychology and has conducted research in Kenya and Australia. In 2000, Dr. Feldman was a

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