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Economic Impact of Complementary Alternative Medicine

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Introduction

Disillusioned by certain limitations of conventional biomedical treatments and decreasing access to certain types of care, American consumers are turning increasingly to the diverse range of therapies commonly termed “complementary alternative medicine” (CAM) (Oumeish, 1998). In the past decade, CAM experienced tremendous economic expansion in the United States. Over one-third of the adult U.S. population has been reported to use some form of CAM (Eisenberg, et al., 1993). Factors contributing to CAM’s growth include: (a) restricted resource allocation under managed care, (b) lack of specific treatments for chronic conditions, (c) dissatisfaction with services/outcomes of biomedicine, (d) increasing demand for health care services by the aging "baby boomer" population, (e) a desire for a return to holistic and spiritual healing philosophies and natural treatments, and (f) the consumer’s response to marketing strategies (Gordon, 1998). The purpose of this paper will be to provide a synopsis of the past, present and future of complementary alternative medicine through literature review.

The evolution of modern CAM therapies and biomedicine can be traced to ancient Arabia, Asia, the Far East and Middle Eastern cultures. Many of these practices date to several thousand years B.C. (Oumeish, 1998). Ancient physicians practiced true holistic medicine, recognizing the connection between an individual's physiological condition and his spiritual condition. The latter elements were recognized as contributing equally to health or illness. Ancient treatments included herbal medicine, massage, acupuncture, and yoga. Current biomedical practices often ignore ancient practices that incorporate intangible elements in favor of purely scientific diagnoses. By contrast to ancient holistic practices, modern medicine appears

to be highly synthetic in nature. Astin (1998) found that a primary reason that individuals use alternative health practices is "to be more congruent with their own values, beliefs and philosophical orientations toward health and life".

Revenue

In 1997 the total estimated revenue from health care services and products exceeded $1.0 trillion, making mainstream health care one of the largest segments of the U.S. economy (Davidoff, 1998). The growth in consumer demand reflects the willingness of American consumers to seek the benefits of CAM products and services for prevention and health promotion. Expenditures for visits to CAM practitioners accounted for 25% of the total CAM expenditures at an estimated $21.2 billion, over half ($12.2 billion) of which was paid out of pocket (American Journal of Health System Pharmacy, 1999). Fifteen billion dollars were expended out-of-pocket on CAM products including books, vitamins, and related products, bringing the total out-of-pocket CAM costs to $27 billion (see Figure 1). These figures are significant when compared to the $34 billion out-of-pocket expenditures for all biomedical physician services.

Five marketing and networking strategies employed by CAM providers to target new patients include: (a) advertising, (b) referral networks, (c) health and natural products expositions and conventions, (d) natural and health food stores, and (e) insurer promotion and therapy coverage. The formation of referral networks between CAM providers and other alternative and biomedical practitioners is critical in building a patient base. The majority of CAM providers are not included in managed care networks, such as preferred provider organizations. Therefore, the creation of an infrastructure by building informal networks is essential. Due to the preventive nature of CAM, several insurance companies are promoting selected alternative therapies to their

customers. Mutual of Omaha Companies cover the Dean Ornish prevention and behavior modification program to reduce the risk of heart disease through yoga, meditation, diet and support groups (Cohen, 1998; Gordon, 1998). This $5,500 diet and wellness plan for heart disease prevention is considered to be a viable treatment alternative to angioplasties and bypass surgery. The estimated averted cost of these two procedures is $15,000 and $40,000, respectively. Natural and health food retail chains are capitalizing on the revenue potential of CAM. Whole Foods Market, an Austin, Texas based chain, was founded in 1980 with a single location staffed by 19 employees. At that time there were less than six natural food supermarkets in the United States (Whole Foods, 1999). In 1999 Whole Foods expanded to 100 markets across the U.S. Revenues have skyrocketed from $597,294 in 1994 to $1,389,768 in 1998.

Types of CAM and Consumer Characteristics

CAM services are classified into seven different general categories by the National Institutes of Health – National Center of Complementary and Alternative Medicine (NIH-CCAM) (see Table 1). What are the characteristics of consumers using CAM products and services? Studies have shown that the percentage of adults in the U.S. using alternative therapies has climbed from 34% in 1990 to 69% in 1998 (Eisenberg, et al., 1998)(see Figure 2). Typical CAM users were identified as white, male or female, from 35 to 64 years old, with some college or a degree, and a household income of $40,000 or higher. The most commonly used therapies included: (a) relaxation (16.3%), (b) herbal medicine (12.1%), (c) massage (11.1%), (d) chiropractic (11.0%), (e) spiritual healing by others (7%), and (f) megavitamins (5.5%). CAM treatment most commonly address back problems (24%), allergies (20.7%), fatigue (16.7%), arthritis (16.6%), headaches (12.9%), and neck problems (12.1%) (Eisenberg, et al., 1998). Two important findings from CAM utilization surveys deserve mention. First, more physicians are

referring patients to CAM providers, primarily for chiropractic, acupuncture, and massage therapies. Additionally, the number of visits to CAM practitioners increased, while visits to primary care physicians remained the same from 1990 to 1997 (Astin, Marie, Pelletier, Hansen, & Haskell, 1998). CAM visits were approximately 63% higher than were visits to primary care physicians in 1997 (Astin, 1998).

Three theories have been proposed to explain the enhanced use of CAM services. The first theory addresses dissatisfaction with conventional treatment, the dominant medical model that focuses on the disease and its cure by surgery or pharmaceuticals. Consumers view conventional health care as impersonal, too technologically sophisticated, or too costly. The second theory emphasizes the consumers' desire for personal control. Health care consumers view CAM as non-authoritarian, empowering them to control their health decisions. Finally, CAM is more philosophically compatible with the values and belief systems of Americans. Some segments of the population, view CAM as a mechanism to able to turn back the hands of time, alluding the forces of aging (Astin, 1998).

Third-party Reimbursement and Legal Aspects

Historically reimbursement has been defined by traditional medicine practices. Thus, insurers justified denial of coverage for complementary and alternative health care for any treatment that extended outside the boundaries of conventional care. Today, however, many HMOs and other medical insurance companies are more likely to cover some of clients' costs for CAM. Insurers are progressively responding to: (a) consumer demand for complementary and alternative therapies, (b) changes in the economic impact of CAM on the health care market, and (c) medical insurance legislation throughout the nation.

Consumer demand serves as an extremely effective motivation for an increase in third-party reimbursement. A nationwide study released by Landmark Healthcare, Inc., a Sacramento, California-based alternative health care company serving HMOs in 13 states, finds coverage of alternative therapies on the rise (D'Allegro, 1999). Sixty-seven percent of 114 HMOs polled currently offer at least one form of alternative care, most commonly chiropractic and acupuncture services. Eighty-five percent of HMOs predicted a closer relationship between traditional and alternative medical care over time.

Billions of dollars have been pumped into this rapidly growing market over the past several years, largely due to the increasing percentage of Americans visiting CAM providers. Eisenberg et al. (1998) noted that in 1997 approximately 42% of the U. S. population, or 83 million individuals used at least 1 of the 16 most common alternative therapies (see Figure 2).

In order to capitalize on the multibillion dollar CAM market, insurance companies and HMOs are currently experimenting with various reimbursement packages. Some companies use riders to provide CAM coverage, with the individual being responsible for the additional premium charge. Other plans limit coverage to those services that have been deemed effective. For example, CIGNA HealthCare in Bloomfield, Connecticut takes a conservative approach, offering chiropractic care for lower back pain and acupuncture coverage for chronic pain and nausea prevention (D'Allegro, 1999). Aetna U.S. Healthcare in Hartford, on the other hand, allows customers to seek chiropractic, acupuncture, massage therapy, and nutritional counseling at discounted prices.

The trend for increases in third-party reimbursement for CAM has directly resulted from state and federal legislation. Some state legislation has been voluntary, while other state and federal reimbursement policies have been mandated. Washington State, for instance, is one of the

most "friendly" locations for the practice of CAM (Moore, 1997). A 1995 law mandated all carriers to cover alternative medicine. Insurance plans in the state must meet coverage provided under the states' basic health plan. As such, insurers are required to provide access to every category of health care provider to treat applicable health conditions. At least 46 states require insurers to reimburse for chiropractic care, and at least six states require insurance reimbursement for acupuncture. Many insurers selectively exclude reimbursement of CAM procedures because therapies are viewed as either "medically unnecessary" or "experimental treatment". Distinctions between investigational or experimental therapies in this field must be developed before insurers will reclassify therapies such as acupuncture as reimbursable. An example of this change is the Food and Drug Administration's (FDA) recent reclassification of acupuncture needles as Class II devices, or medical devices for general use, rather than Class III investigational devices limited to research (Cohen, 1998). Chiropractors are allowed to bill Medicare. Additionally, chiropractors are reimbursed for care provided under worker's compensation, and 26 states covered chiropractic care in 1994. However, none of the government payers offer acupuncture or naturopathic therapy (Cooper, 1998).

The legal community is playing an ever-increasing interest in the regulatory process involving CAM. Trends for CAM providers involved in malpractice suits is suited for change in the future. Currently, CAM providers are less likely to be sued as compared to traditional providers. Alternative medicine accounts for approximately 5% of the total malpractice insurance market (Studdert et al., 1998). One study reports a 2% claims rate against chiropractors in 1995. This compares with a 9.0% and 6.2% claims rate against physicians and primary care physicians, respectively (Grandinetti, 1999). The rate for massage therapists was only 2 percent of the physician rate. Also, average indemnity payments per paid claim for the CAM

practitioners were lower. In 1996 massage therapists averaged $4,253 and chiropractors were paid $60,985. This compared with $202,772 for all physicians and $166,379 for primary care physicians. One reason for lower awards is the tendency for these therapies to inflict minimal harm. Additionally, alternative practitioners are not held to the same standard of care as physicians. An exception occurs when the responsibility for care could be construed as overlapping. A chiropractor who takes radiographs or does blood work, for instance, could be held to a higher standard. A final reason that CAM providers are subject to less litigation is that they tend to spend more time talking with their patients, discussing their problems, and getting to know them. This familiarization tends to curb patients from pursuing legal actions against their CAM providers. However, managed care, will increasingly force biomedical providers to adhere to short-duration patient encounters in order to meet per day patient quotas, basically undermining this healer-patient interaction. Cohen (1998) suggests that CAM providers can compromise themselves legally and be charged with malpractice for: (a) failing to provide care within the standards of their profession or failing to meet heightened standards of care in the event they exceed professional boundaries, (b) assuming too much responsibility for patients' traditional medical problems, (c) not referring when conditions warrant a more intense level of medical treatment; (d) misrepresenting their capabilities above and beyond their official training and skills, and (e) providing negligent care.

Over the years many federal and state laws, regulations, and court decisions have been made to protect the consumer from unsafe or untested services or products. Enforcement is predominantly handled through the FDA; Federal Trade Commission; U.S. Postal Service; and U.S. Department of Justice (Gordon et al., 1998). Court cases like Schloendorff v. Society of New York Hospital (1914), stating that “every human being of adult years and sound mind has a

right to determine what shall be done with his own body" lend themselves to establishing CAM safety standards. In response to public pressures from advocates and users of CAM, NIH-CCAM received an appropriation from Congress in 1991 to create the Office of Alternative Medicine (OAM). The main purposes of NIH-CCAM are to: (a) facilitate evaluation of the effectiveness of CAM treatments, (b) help integrate effective treatments into the medical mainstream, and (c) sponsor research. NIH-CCAM also acts as a clearinghouse for information and data on alternative health issues.

Predictions for the Future

The use of over-the-counter herbal and homeopathic medicines by consumers is expected to thrive, primarily due to aggressive marketing and lax regulation by the FDA (Jarvis, 1999). Potential reasons for increased use of CAS among Americans are their limited medical knowledge and their willingness to investigate new therapies. Jarvis defines this phenomenon as “rampant empiricism”. Patients will interpret the health care industry’s interest in CAM as an endorsement, encouraging further use.

Dramatic changes are required to fully integrate complementary alternative therapies with scientific medicine. Physicians must familiarize and educate themselves about the safety and efficacy of CAM therapies through controlled clinical trials, statistical analyses, and subjected peer reviews (Udani, 1998). The development of delivery systems for integrated health care will be dependent on effective information and resource management (Coates & Jobst, 1998). CAM will experience a wider presence in U.S. medical schools and residency programs (Udani, 1998; Wetzel, Eisenberg, & Kaptchuk,1998). Medical and pharmacy curricula will undergo needed changes to incorporate the evolving body of knowledge on complementary alternative medicine. An explosion is likely to occur in the number of continuing education programs devoted to CAM

for physicians and other allied health care providers. Medical practitioners and pharmacists need to delve into the wealth of evidence supporting the uses and benefits of herbal medicines and other forms of complementary medicine. Currently, many patients have a broader knowledge base in the field of complementary alternative medicine than the medical provider. As CAM use becomes more prevalent, physicians and other associated health care providers will focus on issues concerning natural substances, contraindications, adverse effects, and toxicology (National Association of Naturopathic Physicians, 1999). The curricula from medical school and other allied health professions will be modified to meet the challenge of the integrative health care system of the future (Carlston et al., 1999; Scott, 1998).

Unless mandated by state or federal laws, third-party payers will continue to embrace only those measures that prove to be cost-effective and will limit any existing programs that have proven to be cost-inefficient. Well-controlled, randomized scientific studies will be the basis for selected coverage. Although patient demand is a factor, most managed-care coverage will be driven by proof of medical efficacy and cost-effectiveness (Barrett, 1999). According to Padgug, third-party coverage of a new service always seems to have a noticeable and undesirable effect on charges; they rise rapidly and steeply. If this occurs, third-party carriers will be less inclined toward CAM, except in those instances in which overwhelmingly convincing evidence of cost effectiveness can be shown (1995).

This medical field has expanded so rapidly that regulatory control is imminent. The FDA will continue to assume this regulatory role, but will need to more aggressively address the issues posed by evaluation of alternative medicine products (Eskinazi, 1998). Historically, government intervention has demanded increased resources to meet regulatory requirements. The increased costs to meet these regulatory guidelines will be passed on to the consumer in the form of

increased cost for the particular method of treatment regulated. Increased cost of the CAM treatment may possibly exceed that of the cost of conventional treatment for the same condition.

Ongoing efforts will be made into the development and implementation of clinical practice guidelines for CAM. Significant need and opportunity exists for practice guideline development that can provide balanced information about the evidence supporting one therapy over another (Woolf, 1997). This need will be met partly with well-designed clinical trials and high quality outcome-based research.

Economic Impact of CAM

CAM products and services can be classified as both complementary and substitute goods. The term complementary indicates the product's purchase and consumption in conjunction with traditional (allopathic) medical products and services. As indicated in our review, vitamins and herbs are the most common CAM products consumed by the American public (Eisenberg, et al., 1998). When confronted with certain illnesses, such as allergies or flu, a health care consumer may visit a traditional physician in order to receive a diagnosis. In addition to the medications prescribed by the provider, the consumer may purchase vitamins and herbal products to complement the standard pharmaceutical regimen. By contrast, CAM products and services can also be considered substitute goods when patients forego traditional medical treatment totally in favor of CAM. For example, patients experiencing persistent lower back pain, and who have not found relief from traditional therapy, will seek treatment solely from chiropractors.

The assumption that all determinants of demand are constant, with the exception of price, governs the construction of the demand curve. Given *ceteris paribus*, CAM products and services can be classified as relatively inelastic. Significant research, cited in this paper,

indicates that consumers are willing to purchase CAM products and services regardless of price and requirement to expend considerable out-of-pocket funds. As constraints are placed on the availability of traditional medical goods and services under managed care, and as consumers become increasingly dissatisfied with certain aspects of traditional medicine, the demand for CAM products and services can be expected to increase.

Conclusions

The vast majority of Americans use CAM therapies in conjunction with more conventional Western biomedicine. Users are increasingly concerned about treating illness and disease within a broader context of spirituality and life meaning. As consumers continue to pay billions of dollars out-of-pocket each year, the demand for insurance and third-party financing will grow stronger. Nonetheless, complementary therapies will need to comply with the terms of the historical medical model in order to be recognized by the insurance and third-party payment systems (Padgug, 1995).

Recommendations

Ongoing efforts are needed in the development and implementation of evidence-based guidelines for CAM. These guidelines are critical in meeting the future information needs of the health care industry, clinicians and patients. Guidelines are critically needed in monitoring compliance, adverse effects, and outcomes. Since many patients often combine traditional and CAM therapies, information systems must be expanded to include practice guidelines and other pertinent data on CAM therapies in order to avert drug interactions and other adverse outcomes. Creating a comprehensive CAM data repository will assist in meeting the information needs of the health care industry, clinicians, and patients.

Financing of conventional alternative therapies by third-party payers and insurers should continue to expand to those treatments deemed beneficial and cost-effective. Randomized, well-controlled scientific research should be the basis for selected coverage.

Medical school and other allied health curricula should include instruction in both traditional and nontraditional care modalities, providing a more comprehensive knowledge base for future practitioners. In addition, the increasing number and role of non-physician clinicians should becomes a viable alternative to traditional primary health care providers under both managed care and in the private care arena. The scope of practice of traditional primary health care providers should be widened to include CAM modalities.

A program to develop licensure or certification guidelines for all CAM providers is required. As with traditional medicine, formal standards for length of training, curriculum content, testing and certification, scope of practice and monitoring procedures must be defined and implemented to eliminate "quackery" and to ensure quality health care delivery.

The FDA must develop and implement regulations applicable to alternative medicine products. As CAM continues to increase its share in the health care market, federal funding must increase accordingly for associated research programs, such as those funded through the National Center of Complementary Alternative Medicine.

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Table 1

Major Categories and Types of Complementary Alternative Medicine

Major Categories	Types and Description
Alternative Systems of Medical Practice	Acupuncture. Ayurvedic Medicine: A system of medicine from India using a holistic approach to healing. Environmental Medicine: The specialty in medicine in which doctors assist patients in uncovering the cause and effect relationship between their environment and their ill-health, and help them learn to avoid these areas. Homeopathic Medicine: The belief in the tendency of the body to heal itself; all symptoms of ill health are expressions of disharmony within the whole person; the patient needs treatment, the disease. Naturopathic Medicine: A medical practice that considers the "whole" person; uses natural remedies (homeopathy), manipulative techniques, and Oriental Medical Practices to stimulate the bodies natural ability to heal; also known as Traditional Oriental Medicine
Bioelectromagnetic Applications	Electroacupuncture Electromagnetic Fields

Table 1 Continued

Major Categories	Types and Description
Bioelectromagnetic Applications (cont.)	Electrostimulation and Neuromagnetic Stimulation
Devices	
	Diet, Nutrition, and Lifestyle
	Changes in Lifestyle
	Diet
	Macrobiotics: The belief that healthy food and lifestyle changes not only effect physical health in a positive way, but also can support emotional balance and clarity of mind.
	Nutritional Supplements
Herbal Medicine	Echinacea: A herb that American Indians used for wounds, infections, insect and snakebites; believed to be a good supplement for colds, slow or weak immune system, flu, antiviral, and antifungal.
	Ginger Rhizome: A herb used to help relieve post-operative nausea due to anesthesia and even the nausea common to chemotherapy patients.
	Ginkgo Biloba: A herb that is utilized to help with memory, improves circulation, aids brain circulation, and recovery from strokes and heart attacks.

Table 1 Continued

Major Categories	Types and Description
Herbal Medicine (cont.)	Ginseng Root: Has been demonstrated in clinical tests to have therapeutic value in relieving stress, improving memory, increasing energy, and fighting fatigue.
Manual Healing	Acupressure
	Alexander Technique: A posture correcting therapy developed in the late nineteenth century, emphasizes improvements in poor posture habits that may cause inefficient functioning of the body.
	Aromatherapy
	Biofield Therapeutics: Energy healing or laying on of hands.
	Chiropractic Medicine
	Massage Therapy
Mind-Body Control	Art Therapy
	Biofeedback: A therapeutic modality which teaches an individual self-health improvement techniques by recognition and manipulation of signals based on body responses.
	Counseling
	Dance Therapy

Table 1 Continued

Major Categories	Types and Description
Mind-Body Control (cont.)	Meditation
	Yoga
	Hypnotherapy
	Psychotherapy
	Relaxation Techniques
Pharmacological and Biological Treatment	Anti-Oxidizing Agents
	Cell Treatment
	Chelation Therapy: a recognized treatment for heavy metal (such as lead or mercury) poisoning. Ethylenediamine tetraacetic acid (E.D.T.A), injected into the blood; will bind the metals and thus allow elimination from the body in the urine.
	Metabolic Therapy
	Oxidizing Agents (Ozone, Hydrogen Peroxide)

Figure Captions

Figure 1. Total expenditures on complementary alternative medicine visits, books, equipment, and products for the years 1990 and 1997.

Figure 2. Percent of the U. S. population using at least one of the 16 most common alternative therapies for the years 1990, 1997, and 1998.

Figure 1.

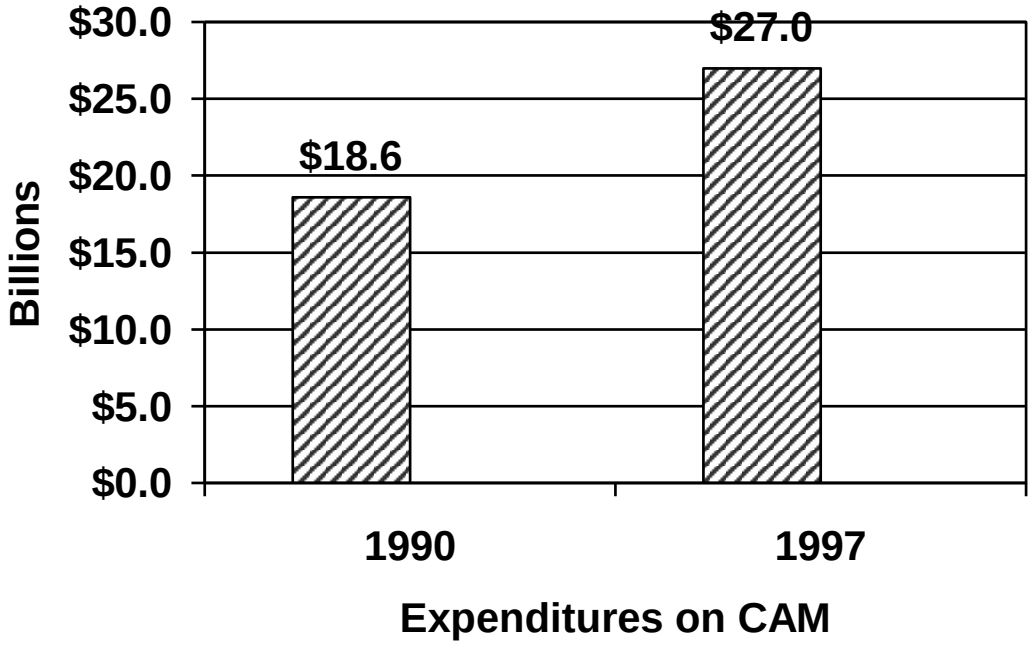
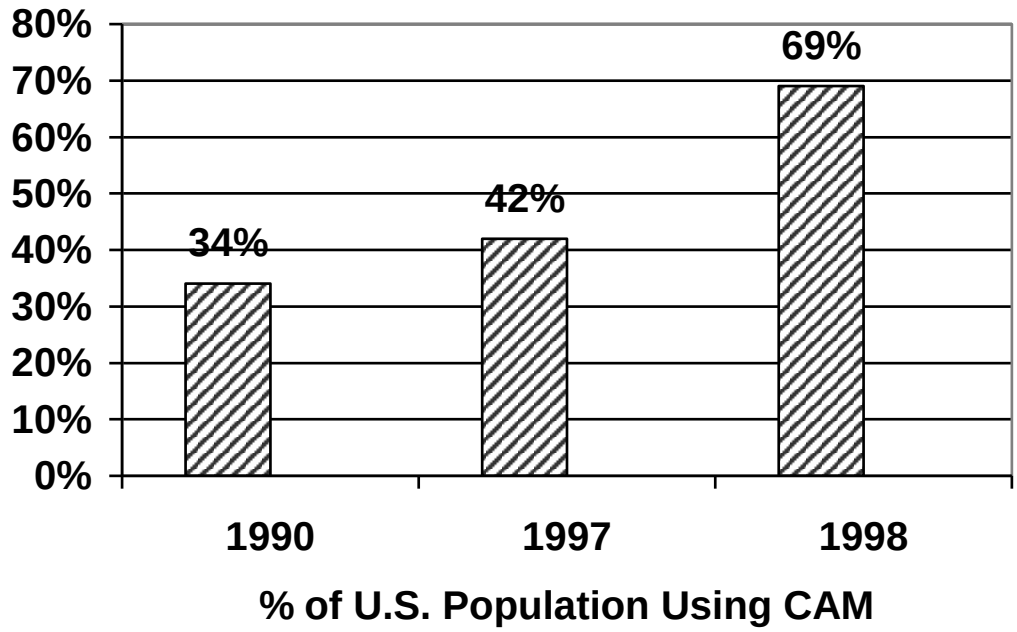


Figure 2.



Economic Impact of Complementary Alternative Medicine

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INTRODUCTON

Approximately one-third of Americans use a broad range of health care practices deemed outside the scope of conventional medical therapies. Complementary alternative medicine (CAM), once dismissed as quackery, is being greeted with reduced skepticism from physicians, other health care providers, third-party administrators, and American consumers. Several factors have contributed to the significant increase in the usage of CAM therapies including: (a) limited resource allocation under managed care, (b) dissatisfaction with conventional treatment options, and, (c) a desire for a return to more holistic approaches of therapy.

OVERVIEW

Consumer spending in excess of $27 billion for out-of-pocket expenditures has pressured insurers to more closely examine their coverage for CAM visits, supplies, and equipment. The less invasive nature of CAM treatment and closer provider-patient relationships have resulted in less litigation than that experienced in conventional medicine. However, providers can be sued for malpractice and health care organizations can be held vicariously liable for unfavorable outcomes. The role of third-party payers and insurers in the field is growing in response to both consumer demand and the desire to provide health care cheaper than available with conventional medical modalities.

CONCLUSION AND RECOMMENDATIONS

The vast majority of Americans use CAM measures in conjunction with conventional Western biomedicine. As consumers continue to pay billions of dollars out-of-pocket each year, the demand for insurance and third-party financing will grow stronger. Nonetheless, complementary therapies will need to comply with the terms of the historical medical model in order to be recognized by the insurance and third-party payment systems.Health care curricula should include instruction in both traditional and nontraditional care modalities in order to provide a comprehensive knowledge base for future practitioners. Developing licensure or certification guidelines for all CAM providers is required to insure quality of health care delivery. As with traditional medicine, formal standards for length of training, curriculum content, testing, and certification, scope of practice, and monitoring procedures must be defined and implemented. Scientifically-based CAM guidelines and clinical pathways must be developed in order to monitor compliance, adverse effects, and outcomes.The Food and Drug Administration must develop and implement regulations applicable to alternative medicine products. As CAM continues to increase its share in the health care market, federal funding for associated research programs must increase accordingly to increase access for the American public.

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