

2000

## West Virginians' perceptions and use of complementary medicine

Joshua David Blevins  
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**WEST VIRGINIANS' PERCEPTIONS AND USE OF COMPLEMENTARY  
MEDICINE**

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**Thesis submitted to the School of Pharmacy  
at  
West Virginia University  
in partial fulfillment of the requirements  
for the degree of**

**Master of Science  
In  
Pharmaceutical Sciences**

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**Morgantown, West Virginia  
2000**

**Keywords: Alternative Medicine, Therapy, Unconventional**

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## **ABSTRACT**

### **WEST VIRGINIANS' PERCEPTIONS AND USE OF COMPLEMENTARY MEDICINE**

**Joshua Blevins**

The purpose of this study was to determine how West Virginian's perceive and use complementary medicine. The first objective was to determine the frequency of respondents who had used at least one complementary therapy in the last year. The second objective was to determine the most commonly used complementary therapies among respondents. The third objective was to examine the demographic characteristics of respondents who used complementary therapies. The fourth objective was to determine if certain types of medical problems led to complementary medicine use among respondents. The fifth objective was to show the percentage of users who informed their physician of complementary medicine use. The sixth objective was to determine the respondent's perceptions of the safety and effectiveness of complementary medicine. The last objective was to see if respondents' perceived health status played a role in complementary medicine use.

Data were collected over a two and a half-month time period from July to October 2000. The sample consisted of 1200 West Virginians selected from eight counties located in the state. These counties were Brooke, Hancock, Monongalia, Kanawha, Logan, Nicholas, Webster, and Putnam. The percentage of respondents that used one complementary therapy within the last year was 59.6% (vitamin/mineral supplements not considered a complementary therapy). The most commonly used complementary therapies were vitamin/mineral supplements (68.0%), special diet (23.5%), and herbal supplements (21.0%).

Significant demographic variables that predicted complementary use of respondents were being female (64.8%), and older respondents used more than younger ones ( $p= 0.01$ ). Medical conditions that were found to be associated with complementary medicine use were individuals who had diabetes ( $p= 0.02$ ) and chronic back pain ( $p= 0.009$ ) (when vitamin/mineral supplements were not considered a complementary therapy). Twenty-six percent of respondents did not inform their physician of their complementary medicine use. Individuals felt that prescription medications were safer (37.2%) when compared to herbal supplements (14.3%) and also thought that prescription medications were more effective (45.3%) than herbal supplements (4.0%). Another significant predictor were people who perceived their health status to be poor used more complementary therapies than those who perceived their health status to be better than poor ( $p= 0.014$ ).

In conclusion, West Virginians in this study use more complementary therapies than other parts of the nation regardless of whether vitamin/mineral supplements were considered CAM. This use is higher among women and the elderly, as well as individuals with diabetes, chronic back pain, and those who rated their health as fair or poor. Traditional health care providers should be aware of this trend because of the risks involved, such as missed diagnoses, adverse drug interactions, and the possible discontinuation of conventional treatment altogether.

For  
Mom & Dad

## ACKNOWLEDGEMENTS

I would like to express my gratitude to the many people that made this study possible. First I would like to thank Dr. David Nau, my advisor and major chairperson, for his guidance, assistance, knowledge, and friendship that he offered throughout the course of my graduate studies. He was also a person that did not try and pressure his thoughts and ideas, but tried to work with mine. For all of this I am deeply appreciative.

I would also like to thank members of my committee that showed an incredible interest along with being extremely helpful whenever possible. So, thank-you Dr. Rosenbluth, Dr. Simon, and Dr. Goins for all the knowledge and help that you offered. A very large thank-you goes out to everyone who contributed with my study. These people are Dr. Madhavan, Dr. Scott, and especially Dr. Amonkar. I also show gratitude for the graduate students that gave their helpful advice and pure kindness when I needed it the most.

Additional thanks goes to Dr. Juckett and Dr. Williams who not only found interest, but provided much needed funding and input for the completion of this study.

Finally, those who deserve the greatest credit for everything I've accomplished, not just in graduate school but also in life, are my parents. They provided me with everything anyone could ask for along with the understanding and love that I appreciate more and more as the days go on. I hope that I could repay them someday for all they have given me, but I can not do the impossible. I just want you to know that this thesis is dedicated to you and that I love both very much.

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# CHAPTER 1

## INTRODUCTION

### **Background of Complementary Medicine**

#### Use of Complementary Medicine

The health care industry in the United States is currently going through a major revolution. There is an increasing movement toward self-care as individuals take a more active part in their own diagnosis, therapy and prevention of disease among Americans (Schiller and Levin, 1983). Alongside this more personal involvement with one's health is an increasing interest in wellness (Troy, 1994) and in alternative approaches to healing (Levin and Coreil, 1986). The large increase in complementary services being purchased and demanded is evidence of the revolution that is underway. Individuals who are more likely to use complementary medicine tend to be those who want more control over their health that may not be congruent with traditional medicine. People may also use complementary medicine because it is compatible with their own personal philosophy, such as believing in the connection between mind and body (Islander, 1998).

Complementary therapies include all practices and practitioners that are external to traditional or allopathic medicine. Originally, these practices were called "alternative medicine." More recently advocates of a combination of allopathic medicine and complementary medicine have coined the term "integrative medicine" (Strasen, 1999).

As we enter the 21<sup>st</sup> century, Americans are making more office visits to alternative medicine practitioners than to primary care physicians (Gower, 1999). Eisenberg et al. (1998) reported that Americans made 425 million visits to alternative health care providers in 1990 and this increased to 629 million visits in 1997. The latter

figure exceeded the number of visits to allopathic primary care physicians during the same period. Eisenberg et al. (1993), showed that 34% of respondents have used at least one type of complementary therapy within the previous year, and that usage is particularly high amongst people with chronic illnesses. Musculoskeletal disorders, asthma, arthritis, eczema, hypertension, sleep disorders, and stress-related conditions are chronic conditions which have been associated with complementary medicine use (Healthcare Open Learning, 1999) (Rao, 1998). Additionally, studies with patients who have cancer show that between 9% and 81% of patients use complementary therapies (Verhoef et al., 1999).

Also of importance is the fact that consumers spend \$6.5 billion out-of-pocket for dietary supplements annually (Muller and Clausen, 1998). Calculating a modest annual increase of 15% per year, the complementary medicine industry was projected to be a \$60 billion industry by the year 2000 (Strasen, 1999). These trends and personal experiences tell us that Americans are entering the 21st century with overwhelming needs and desires to feel cared for and feel well. Currently, the traditional health care system is minimally meeting those needs. As a result, individuals are looking outside the traditional system for products and services that can meet their wants and needs to feel good physically, emotionally, and spiritually (Strasen, 1999). Despite the high growth of complementary medicine, it is not taught widely in U.S. health professional schools or generally available in U.S. hospitals (Eisenberg et al., 1993).

## Diversity of Complementary Therapies

The National Center for Complementary and Alternative Medicine (NCCAM) has identified sixteen distinct types of complementary therapies. These therapies are relaxation techniques, herbal medicine, massage, chiropractic, spiritual healing by others, megavitamins, self-help groups, imagery, commercial diets, folk remedies, lifestyle diets, energy healing, homeopathy, hypnosis, biofeedback, and acupuncture. NCCAM classifies these therapies further into seven broad categories, which includes Mind-Body Medicine, Alternative Medical Systems, Lifestyle and Disease Prevention, Biologically-Based Therapies, Manipulative and Body-Based Systems, Biofield, and Bioelectromagnetics. These categories are not mutually exclusive and certain complementary modalities may fit into multiple categories.

The first category, Mind-Body Medicine, includes behavioral, psychological, social, and spiritual approaches to health. Some examples of mind-body medicine are hypnosis, biofeedback, imagery, and spiritual healing. Alternative Medical Systems involve complete systems of theory and practice that have been developed outside of the Western biomedical approach. Acupuncture, herbal formulas, diet, massage, and homeopathy are some examples of this category. The third category is Lifestyle and Disease Prevention. This category involves theories and practices designed to prevent the development of illness, identify and treat risk factors, or support the healing and recovery process. Lifestyle and Disease Prevention is concerned with integrated approaches for the prevention and management of chronic disease in general or the common determinants of chronic disease. Dietary changes and stress management are

two examples of Lifestyle and Disease Prevention. Biologically-Based Therapies include nature and biologically-based practices, interventions, and products. Two examples in this category are herbalism and special diet therapies. Another category is Manipulative and Body-Based Systems, which refers to systems that utilize manipulation and/or movement of the body. Chiropractic and massage/body work are included in this category. Biofield and Bioelectromagnetics are the final categories of complementary therapies as defined by the NCCAM. Biofield Medicine involves systems that use subtle energy fields in and around the body for medical purposes, and Bioelectromagnetics refers to the unconventional use of electromagnetic fields for medical purposes (NCCAM).

#### Reasons for the Use of Complementary Medicine

There are many reasons for the attraction of complementary medicine. Consumers who feel increased disenchantment and alienation from traditional health care may drive the demand for complementary medicine. Strasen (1999) described this phenomenon in the following way: “because of the major focus of health care providers on providing high-tech, low-touch, cost-effective services, health care consumers have become increasingly alienated from health care providers and payers.” Thus the apparent inattention or disinterest of allopathic providers in the holistic wellness of their patients may be driving people to alternative providers who express greater interest in the well being of their patients.

To further illustrate the attraction of complementary medicine, Astin proposed three theories to explain the large increase in use of complementary therapies:

- (1) “Dissatisfaction: Patients are dissatisfied with conventional treatment because it has been ineffective, has produced adverse effects, or is seen as impersonal, too technologically oriented, and/or too costly.”
- (2) “Need for personal control: Patients seek alternative providers because they see them as less authoritarian and more empowering and as offering them more personal autonomy and control over their health care decisions.”
- (3) “Philosophical congruence: Alternative therapies are attractive because they are seen as more compatible with patients’ values, worldview, spiritual/religious philosophy, or beliefs regarding the nature and meaning of health and illness” (Astin, 1998).

#### Concerns Associated with Complementary Medicine Use

Although complementary medicine is increasing dramatically and is becoming more attractive to the consumer, there are some legitimate concerns about complementary medicine. Zollman and Vickers (1999) stated that, “The general attributes of complementary medicine do not always lead to increased patient satisfaction. Complementary medicine has some features that can cause patients problems or produce negative effects.”

The safe and appropriate use of complementary therapies is also a source of concern. Some studies have shown that substantial proportions of patients (35%-40%) do not discuss complementary therapy use with their physicians (Verhoef et al., 1999). This could lead to duplicate therapies and drug interactions. Another source of concern is the



lack of licensure for complementary practitioners. Zollman and Vickers (1999) stated, “There is public anxiety that some complementary practitioners may not be adequately qualified, although patients who have already used complementary medicine show less concern.”

The lack of nationally recognized professional standards for herbal medications and dietary supplements is also a major problem. Patients may also make assumptions about the safety of complementary medication bought over the counter. As many of these contain pharmacologically active agents, they have the potential for adverse effects particularly where they are taken in combination with other complementary or conventional medications (Zollman and Vickers, 1999).

The economic burden to patients who use complementary therapies may be phenomenal considering it is almost impossible to predict the outcomes of many complementary therapies. This problem may result in the patient spending a large amount of money on therapies that do not have a positive effect and lead to a substantial economic burden at home.

#### Differences of Complementary Medicine Use Nationwide vs. Appalachia

West Virginia is the only state that lies completely within the region known as Appalachia. This region of the United States is different in a number of ways from other parts of the nation. The Appalachian region is characterized by low levels of urbanization and lower standards of living than the nation (Isserman, 1997). Life expectancy for both men and women is lower in Appalachian counties than in the United States overall (Murray et al., 1998). Preventable chronic health problems, on average, are

more prevalent in Appalachia compared to rest of the country (West Virginia Bureau of Public Health, 1994).

Rosswurm and Dent (1996) stated that Appalachia, as defined by the Appalachian Regional Act of 1965, has a population of approximately 21 million and contains 399 counties in portions of 13 states. The Appalachian region has a long history of economic instability, most commonly associated with outsider exploitation of its resources. Although Appalachians are similar in race, religion, ancestry, and language to the mainstream American culture, they have been described as a distinct, geographically isolated subculture.

Illness, the perception or subjective feeling of disease symptoms (Boyle and Andrews, 1989), reflects the cultural understanding of what it means to be ill and how to deal with disease. Studies have shown that many Appalachians feel that illness and disability are a part of aging or determined by God (Rosswurm and Dent, 1996). Appalachians have traditionally relied on family, faith, and folk healers rather than physicians. Horton (1984) reported that the large extended families in rural Appalachia take care of the children and household responsibilities of the ill persons. Although some women in Horton's study viewed their hospitalizations for exploratory surgeries as vacations, Appalachians also commonly have a fear of hospitals as places where they go to die (Lewis et al., 1985). Because of their different beliefs about health and healthcare, Appalachians may also have a different pattern of complementary medicine use.

### **Problem Statement**

There has been much interest in the public's attitudes, beliefs, and usage of complementary medicine in recent years. Much of this has to do with rising health care

costs and growing disenchantment with the mainstream medical system in the United States. There have been national surveys, community surveys, and prospective studies dealing with the use of complementary medicine. However, health care practices and health beliefs in Appalachia sometimes diverge from national trends, and there have been no systematic evaluations of complementary medicine use in Appalachia. Thus, it is important to examine the beliefs of Appalachians regarding complementary medicine and their involvement in various approaches to healing and wellness.

### **Goal of Study**

This study will demonstrate how West Virginians perceive complementary therapies and describe complementary medicine usage in this state.

### **Study Objectives**

1. Determine the percentage of West Virginians that have used at least one type of complementary therapy within the last year.
2. Identify the most commonly used “complementary” therapies.
3. Examine the demographic characteristics of users of complementary medicine (e.g., differ by age, gender, socio-economic status, and health insurance).
4. Determine whether people with certain types of health problems are more likely to use complementary therapies.
5. Show the percentage of users who inform their physicians of complementary medicine use.
6. Determine West Virginian’s perceptions of the effectiveness and safety of complementary therapies.
7. Examine whether West Virginians with a perceived poorer health status use more complementary therapies.

## **Research Significance**

West Virginia is geographically isolated from much of the continental United States in a region known as Appalachia. This area is different in many aspects ranging from health to education. An appropriate way to understand such a region is to obtain a profile of the people of the region. By obtaining a profile of complementary medicine use in West Virginia, we can better understand the changing behaviors of this population.

Such understanding should also enhance the awareness of local physicians, nurses, pharmacists and other health professionals regarding the public's use of complementary therapies. An increased understanding of West Virginians' use of these therapies may help enhance West Virginia University's training programs in the health sciences. By providing better information to providers regarding local trends in complementary medicine use, we may be able to help providers and patients more appropriately integrate different approaches to healing and wellness.

## CHAPTER 2

### LITERATURE REVIEW

#### History of Complementary Medicine

A myriad of healing practices has been used by different cultures for thousands of years. The oldest healing approach, dating back about 5,000 years, is Ayurveda which came from India. Selvester (1997) called Ayurveda the ancient healing system of India, in that it shows health as a reflection of the balance of life forces that each individual possesses. This healing system is composed of the three doshas (fire, wind, and water) which when out of balance can cause disease. Ayurvedic philosophy, which modern medicine still has problems embracing, “is that disease results from the body’s own efforts to preserve itself.” This is not atypical of many “alternative” healing practices in use today. The interconnectedness of nature, mind and body is a pervasive theme in many non-western medical philosophies (Selvester, 1997).

Even though “alternative” therapies have been in use for thousands of years, there has been a wall between western and eastern cultures concerning these complementary and alternative medicines (CAM). It has been less than two decades that the wall started coming down in the United States. The use of CAM in the United States has started to emerge as a trend that has had tremendous growth over the last decade and is expected to continue growing throughout the next millennium (Strasen, 1999).

Fuller (1992) stated that mesmerism, the science of animal magnetism, gave rise to many alternative healing systems in the United States. It was created in the mid 1800’s by a Viennese physician named Franz Anton Mesmer, but became quite popular

in America in the late 19<sup>th</sup> century as many disciples of Mesmer traveled New England giving lectures and demonstrations of this therapy. In Mesmerism magnets were passed over one's body to induce the flow of animal magnetism (Fuller, 1992). By doing this, some patients enter a trance like or mesmerized state and awake feeling cured of an ailment. Conditions that are supposedly cured by this means include rheumatism, loss of voice, stammering, nervousness, chorea, epilepsy, blindness, digestive disorders, and insomnia. Fuller (1992) noted, "In the act of popularizing this European-born medical theory, the American mesmerists gradually modified their beliefs and practices to meet their audiences' metaphysical needs or interests. And in so doing they fashioned a system of medical beliefs that became the template from which a good many alternative healing systems were eventually fashioned."

The growth of complementary medicine continued into the 20<sup>th</sup> century. Ruppert (2000) told of the beginning of the century when practitioners of natural remedies, homeopathy, physical manipulation, and other alternative therapies were considered as equal to the traditional medicine of the time. The standards we know today for conventional practitioners were created during this period. Abraham Flexner's report in 1910 is what most people consider the catalyst for change in health care education. His report, *Medical Education in the United States and Canada*, found a large qualitative variance between the methods and outcomes of different institutions that trained physicians. As a result, the Association of American Medical Colleges and others helped to bring about stringent standards for certifying the nation's caregivers and created an accreditation process. This was the time when complementary healing practices slipped away from the mainstream of medicine.

During the 1990's, we have seen an explosion of complementary therapies. Many of these practices had existed for millennia, but had been shunned by the Flexnerian medical education system. Strasen (1999) states that this revolution is going unnoticed by many health care professionals because they have been concerned with health care consolidation, the decline in reimbursement, the growth of pharmaceuticals and technology, and the increase in bad press concerning poor hospital outcomes and adverse drug reactions. With increasing technological advances in modern medicine, it's amazing that visits to complementary practitioners outnumbered that of visits to primary care physicians (Eisenberg et al., 1998). These trends will continue into the 21<sup>st</sup> century because patients are seeking new ways to feel good rather than just relying on a quick fix that conventional practitioners offer at times. Also, insurance companies will begin to reimburse for certain complementary therapies as more research establishes their safety and efficacy (Ruppert, 2000).

The growing demand by the public for more knowledge about their health and medical practice has spurred this revolution. In 1994, the federal government responded to the overwhelming demand for information on complementary medicine by creating the Office of Alternative Medicine (OAM) within the National Institutes of Health (NIH). In 1999, the OAM was replaced by the National Center for Complementary and Alternative Medicine (NCCAM). NCCAM had four main goals: evaluate various treatments, investigate various benefits of complementary care, establish an information clearing-house, and support research and training in complementary medicine practices.

Problems are also arising because of the increased use of complementary medicine. Physician's lack of education and negative attitudes towards complementary

therapies has led to patients not telling their conventional practitioners of the complementary therapies that they use. This breakdown of communication between the patient and physician can lead to disastrous effects. The communication barrier can result in the simultaneous use of prescription medications with non-prescription therapies that may result in harm to the patient. However, very little is known about how often patients use alternative therapies without informing their physicians.

### Recent Trends in Complementary Medicine Use

There have been a few national surveys conducted about the frequency of complementary medicine use in the 1990's that have had a great impact on today's literature. Eisenberg et al. conducted the first national telephone survey in 1990. The key results to this survey are as follows: 33.8% of the population used 1 of the 16 complementary therapies that were tested for in the previous year, the probability of a user to visit a complementary medicine practitioner was 36.3%, complementary therapies were used most frequently for chronic conditions, 39.8% reported not telling their physician about use of complementary therapies, 64.0% reported paying out-of-pocket for these complementary services, and there were approximately 427million visits to complementary medicine practitioners.

A subsequent survey (Eisenberg et al., 1998) that was administered in 1997 has received a lot of attention when looking at therapies used, out-of-pocket expenses paid, and total visits made to complementary practitioners. The telephone survey used random-digit dialing to select households and also randomly selected an individual over 18 years of age to take the survey. This survey was limited to English speaking persons



where any kind of impairment did not prevent the completion of the survey. The response was 2055 persons which created a 60% weighted response rate. Six follow-up phone attempts were made to each household that didn't answer. Out of the initial sample of households, a total of 42% were unreachable by various means. Another 481 households were ineligible because they couldn't speak English or had some physical or cognitive impairment.

No mention of complementary therapies was made before the interview. Questions were asked about perceived health, health worries, days spent in bed, and functional impairment due to health problems. Respondents were then asked about their interactions with a medical doctor (MD), or a doctor of osteopathic medicine (DO), not a chiropractor or other alternative practitioner. The term medical doctor was used throughout the remainder of the interview. This survey explored five trends: (1) respondents were asked if they had certain common medical conditions from a prepared list in the past 12 months, (2) with the people who reported having more than three of these conditions, the three most bothersome conditions were determined, (3) respondents were asked about their lifetime and past 12-month use of 16 different complementary therapies, (4) use of these therapies under supervision of a complementary practitioner was then determined, and (5) users were asked if they discussed the use of these therapies with their medical doctor, why and why not. For each of the 16 therapies that a respondent used, the amount of insurance coverage was requested. Total costs and total out-of-pocket expenses were calculated. SUDAAN software was used to compute significant tests. Chi-square tests were used to for comparisons of proportions, while t-

tests were used for continuous measures. Extrapolations for total population were based on the assumption that 198 million adults lived in the U.S. in 1997.

Results from Eisenberg's et al. (1998) study showed that the demographics of the respondents who answered the survey were extremely similar to the U.S. population that is published by the U.S. Bureau of the Census. Complementary therapies were more commonly used by women (48.9%) compared to men (37.8%). People in the age range of 35-49 years used complementary therapies more than older persons or younger ones. Persons with college education were more likely to use these therapies (50.6%) than people with no college education (36.4%). Complementary therapy was also more common with people having annual incomes of \$50,000 or higher (48.1%) than people with lower incomes (42.6%). The western U.S. showed more usage (50.1%) than elsewhere in the United States (42.1%). Also noted was that these results were similar to the results from the 1990 study. Basically the same demographic profile for complementary therapy usage was obtained in a study conducted by Brown (1991). This study showed the average user was a white female that was older than 25 years and had problems controlling her disease state.

Eisenberg et al. (1998) indicated that the use of the complementary therapies included in the survey increased from 33.8% in 1990 to 42.1% in 1997. The complementary therapies showing the greatest increases were herbal medicines, massage, megavitamins, self-help groups, folk remedies, energy healing, and homeopathy. The most common reasons for using complementary therapies were for back pain, arthritis, digestive problems, and allergies. Only 38.5% of respondents consulted their medical doctor about their usage of complementary therapies. While 58.3% of persons paid for

these services directly out-of-pocket, the total expenses for complementary therapies for 1997 was estimated at \$21.2 billion to \$32.7 billion.

To sum up, 4 in 10 individuals had used at least one complementary therapy in 1997. Prevalence of use increased by 25%, total visits by an estimated 47%, and expenditures on services provided by complementary practitioners, 45% exclusive of inflation (Eisenberg et al., 1998). Complementary medicine use was also distributed across all sociodemographic groups. Eisenberg came to the conclusion that a large amount of complementary therapy use was for health promotion and disease prevention. Finally, the percent of persons who informed their physicians of the complementary therapies they were using remained low despite the phenomenal increases in the use of these therapies.

Astin (1998) reported in another national study that 40% of the respondents had used some form of complementary medicine in the previous year. Of these therapies chiropractic was most common (15.7%), life-style diet (8.0%), exercise/movement (7.2%), and relaxation (6.9%). The health problems most frequently treated by these therapies were chronic pain (37%); anxiety, chronic fatigue syndrome, and “other health condition” (31% each); sprains and muscle strains (26%); addictive problems and arthritis (25% each); and headaches (24%). The top five health problems reported by respondents were back problems, allergies, sprains/muscle strains, digestive problems, and respiratory problems.

Druss and Rosenheck (1999) conducted a study using the 1996 Medical Expenditure Panel Survey (MEPS) data to examine the relationship between the use of complementary therapies and conventional medical care in the United States. This study

included all individuals over the age of 18 years who answered the survey, which totaled a response of 16,068 individuals. There were 12 categories of complementary therapies given on a card to answer the question of, “During the calendar year 1996, for health reasons, did you consult someone who provides these types of treatments?”

Conventional Medical visits were calculated while questions were asked to determine the individuals perceived health status.

Druss and Rosenheck (1999) found that 6.5% of the US population had visits for *both* complementary and conventional services while only 1.8% used complementary therapies only. This report was much lower than reports in other national surveys. Another conclusion was that complementary therapy use was used in conjunction with and not as an alternative to conventional medicine.

The 6.5% usage rate of complementary therapies in Druss and Rosenheck’s (1999) study was drastically different from the 42.1% usage rate found by Eisenberg et al. (1998). The main reason for this discrepancy is that Druss and Rosenheck’s study had a more narrow definition of complementary medicine use compared to that of the Eisenberg study. Druss and Rosenheck’s study left out key complementary therapies like chiropractic and vitamin/mineral supplements. An additional cause for discrepancies was the fact that Eisenberg’s study looked just at CAM usage, where Druss and Rosenheck’s study looked at CAM use in conjunction with conventional medicine use. Finally, Druss and Rosenheck used the MEPS data to form their conclusions. The problem is that the MEPS main focus isn’t complementary medicine use, but health questions in general. Since there was a only a subsection of this survey dedicated to complementary therapy

use, it wasn't as in-depth or as focused as Eisenberg's study which reflected higher usage rates.

A survey conducted at the University of Kansas found that 60% of outpatients at the university medical center used vitamins or other complementary medicines. The cost to the patient for these complementary medicines ranged from 66% of respondents paying less than \$10 monthly, while 7% of respondents paid over \$50 monthly. HIV patients made up the largest proportion of the big spenders accounting for over \$75 monthly (Kravetz, 2000). The survey didn't reflect the national population because its respondents were mainly outpatients from a university hospital.

*Consumer Reports* (2000) conducted a survey of its readers to examine real life experiences with complementary therapies. This survey ended with over 46,000 reader responses. *Consumer Reports* found that 60% of its readers who use complementary therapies told their doctor about this use. Almost 35% of the respondents reported using some form of complementary therapy. The main reason that these respondents turned to complementary therapies was that conventional treatments did not relieve their symptoms. The majority of the respondents who tried these complementary therapies said they found these alternatives to be very or somewhat helpful.

For almost all medical conditions, conventional medicine was the choice for the majority of the readers of *Consumer Reports*. For hard to treat conditions, such as neck/back pain and fibromyalgia, readers said complementary therapies were as good, if not better, than conventional approaches. Also, for the 60% of readers who told their physicians of their complementary therapy use, more than half of the doctors approved (55%) and 40% were neutral. The reason this survey reported higher usage rates than

previous studies was probably due to the high education levels of *Consumer Reports* readers.

Oldendick et al. (2000) conducted a cross-sectional telephone study of 1,584 South Carolinians, in which there was a response rate of nearly 66%. This survey measured the frequency of complementary or alternative medicine (CAM) use, the perceived effectiveness of CAM, and physician knowledge of CAM usage. The survey also included items on the respondents' general health and specific health conditions. They were also asked two questions: (1) whether they would recommend CAM use to a friend or family and (2) whether they have experienced a bad result from using CAM. Data was weighted, so the sample would resemble that of South Carolina's adult population.

Frequency and demographic results from the study by Oldendick et al. (2000) were very similar to those from Eisenberg's study. The study indicated that 44% of respondents have used complementary or alternative therapies at least once in the last year, and 52% have tried CAM at least once in their lifetime. The demographic characteristics for a person using CAM were white females that were over the age of thirty and had some college education. Divorced or separated respondents were more likely to use CAM, and urban/rural living location didn't affect CAM use. The most frequently used CAM therapy grouping was personal therapies (27.5%), which included home remedies, herbals, vitamins, and homeopathy. The next largest grouping of therapy usage was relaxation techniques (25.7%), which includes massage therapy, imagery, and visualization. Also, one in every five respondents had used chiropractic in the last year, and 1 in 12 had used this therapy in their lifetime. A small percent of persons reported

using healing therapies (4.6%), which included healers, spiritual healing, Native American healers, and energy healing. Even though South Carolina has a large minority population, CAM use was very similar to that of other national studies.

Kitai et al. (1998) conducted a study on the use of complementary medicine among primary care patients in Israel because of the increase of CAM use there in the early nineties. This increase, much like that in the U.S., is occurring despite the fact that CAM use is not covered by the National Health Insurance in Israel. Patients who wish to consult a CAM provider must pay privately. While it seems that socio-demographic factors have some influence on the use of CAM, little is known about this in Israel. Israel is a multicultural society, composed of native Israelis and immigrants with various ethnic and social characteristics. Results from this study showed utilization rates similar to others done in the US. Nineteen percent of the respondents had consulted an alternative medicine practitioner at least once in the past. Demographic variables showed persons between 19 and 65 years used CAM therapies more than the younger or elderly populations. Highly educated persons also used CAM more than the less educated. This could be because the highly educated have a higher income, and therefore are able to afford the use of complementary therapies. Neither gender nor ethnic origin was associated in different utilization rates of CAM. Of the CAM therapies under investigation homeopathy was used most (34.6%) followed by reflexology (18.7%) and naturopathy (17.8%). The most common complaints for which CAM was used were musculo-skeletal (20.6%), respiratory (15.9%), and digestive (12.1%). Reflexology was used to treat most of the musculo-skeletal complaints, while respiratory, digestive, allergic, and dermatological complaints used homeopathic therapies for treatment.

## Why People Use Complementary Therapies

Although complementary medicine usage has been increasing, we still do not have a good understanding of “why” people use these therapies (Astin, 1998). Zollman and Vickers (1999) suggested eight reasons why people are turning to complementary or alternative medicine (CAM). The amount of time available for consultation with CAM practitioners compared to that of conventional medicine seems to be the largest attraction to CAM therapies. Furthermore, while both CAM and conventional practitioners tailor their interventions to meet the needs of each specific patient, CAM practitioners base their treatment on the *way* patients experience their disease, not the disease itself. This type of care is based on the beliefs that the patient is a person and not a disease.

Another attraction to CAM is that the individual can participate in every step of the recovery process including the selection of the CAM therapy. CAM practitioners often give hope by addressing the emotional states of the patient, which is very important for patients who have a chronic disease for which conventional medicine has no cure. Physical contact is usually provided more by CAM practitioners than conventional ones. This can lead to a more honest and open communication between patient and physician. Western medicine has been effective when it comes to treating a specific disease, but when no overt disease is present, CAM practitioners do better at dealing with patients. CAM practitioners are better at making sense of the illness when a person asks “Why did this happen to me?” where conventional practitioners have difficulty explaining questions that have no biomedical explanation. Finally, complementary practitioners acknowledge the existence and importance of spiritual symptoms. This may be particularly important



in areas of the country where the public has traditionally relied on spiritual guidance and healing (e.g., Appalachia).

Astin (1998) conducted a study with the main purpose of testing three theories about complementary therapy use: (1) Patients are dissatisfied with conventional treatments because they do not work, are too expensive, too impersonal, too technologically oriented, and produce adverse effects; (2) Patients seek these complementary therapies because they feel more in control of their health care decisions; and (3) Complementary therapies are attractive because they fit the patients values, views, spiritual philosophy, and beliefs concerning the nature of health and illness. This study used data from a mail survey developed by Ray (1997) which was conducted through the National Family Opinion, Inc.

Astin (1998) reported education as the number one sociodemographic variable predicting complementary medicines, in that 50% of people with graduate degrees compared to 31% with a “high school education or less” reported using complementary therapies in the previous year. Also, among people illustrating a philosophical congruence, 46% of these respondents stated being users of complementary medicine, while only 33% were users if they didn’t exhibit a philosophical congruence. Having a transformational experience, which causes the person to view the world differently than before, was a significant predictor of complementary medicine use. Respondents who have had a transformational experience were more likely to use complementary therapies (53%) compared to those who haven’t had a transformational experience (37%). Health status proved to be a significant predictor, in that those reporting poorer health status were more likely to try complementary therapies than those in good health. People

reporting anxiety, back problems, chronic pain, or urinary tract problems were also more likely to turn to complementary therapies

A study conducted by Verhoef et al. (1998) identified five major reasons that people with cancer chose complementary therapies. First, complementary therapies were used to minimize the adverse effects of cancer therapy. They used these therapies to build up their immune system after a chemotherapy session. They felt these therapies enhance physical, spiritual, emotional well being, and healing. Many cancer patients reported that by using complementary therapies, they were regaining their sense of control. Finally, some patients used these therapies in an attempt to stop cancer from spreading and to prevent cancer cell growth.

Respondents of the Oldendick et al. (2000) study found that many people (47%) used CAM to maintain their current health rather than trying to treat a specific condition. A majority of people using life-style diets, commercial weight loss programs, healing therapies, and relaxation techniques did so to stay healthy and maintain their current health. Less than half of those who used personal therapies (e.g., homeopathy) did so to maintain health, which is primarily due to people trying to treat allergies and other respiratory problems. People who saw chiropractors frequently did so to treat a specific health condition, such as a musculoskeletal or neurologic problem.

### Satisfaction with Complementary Medicine

A study by Oldendick et al. (2000) revealed that a majority of complementary therapy users were satisfied with the therapy and would recommend their therapy to a friend or family member. It indicated that 63.3% of users, for any type of CAM,

perceived their therapy to be extremely effective. Those using commercial weight loss programs were the least likely to report the therapy being extremely or even very helpful (44.9%). Healing therapies on the other hand were the most likely to be reported as being extremely or very helpful (79.3%). Less than 5% of CAM users reported having a bad experience with a certain therapy and more than 85% of CAM users would recommend these therapies to a friend or family member.

The findings of Astin (1998) regarding satisfaction were not highly congruent with other reports. Astin reported that negative attitudes towards or experiences with conventional medicine were not predictive of CAM use. Fifty-four percent of respondents reported being highly satisfied with their conventional practitioners, which 39% of these satisfied individuals used CAM. Additionally, 40% of those reporting high levels of dissatisfaction with their conventional practitioner were users of complementary medicine. Another study conducted by Kitai et al. (1998) showed similar results in satisfaction rates of primary care patients in Israel. This study also indicated that 48.1% of CAM users thought that the therapy was beneficial and 34.5% thought of the therapy as partially beneficial.

#### Conventional Practitioner Involvement in Complementary Medicine Use

Zollman and Vickers (1999) reported that physicians deal with complementary or alternative medicine in a number of situations. Since 35%-40% of patients didn't discuss their CAM use with their physicians, this could have potentially negative effects due to interactions that could occur between conventional and complementary medicine. If physicians are not aware of CAM use by their patients, they may mistakenly attribute the

patient's outcomes to conventional therapy. Verhoef (1999) reported that, "Effective communication between patients and physicians increased patient satisfaction, compliance, quality of life and health."

Physicians of the western world view CAM as moderately effective, but younger physicians seem to be less skeptical than their older counterparts. Most medical students perceive their knowledge of CAM as inadequate and want more training in the subject. Research does show that medical doctors accept their patient's choices concerning CAM, but they regard these therapies as scientifically unproven (Zollman and Vickers, 1999). Doctors do have concerns about whether CAM is being used as alternatives to or complementing conventional treatments. These concerns are that the use of CAM before a diagnosis has been made may delay or prevent diagnosis of a disease. Another concern is that patients who stop and refuse conventional treatments, such as maintenance medication of an asthma or anticonvulsant treatment, because of a CAM practitioner giving advice that contradicts the conventional one. Adverse interactions between conventional and complementary medicine are another concern. Most of these instances involve herbal or dietary supplement use. Other concerns are the poor records of CAM use for a conventional practitioner's patient, the ability for a person to choose a reputable CAM practitioner, and patients awareness of possible problems that can occur with CAM use (Zollman and Vickers, 1999).

An estimated one in three people use complementary therapies to manage medical conditions (Eisenberg et al., 1998). Thus, it is likely that patients are using these complementary therapies concurrently with prescription medications (Brown, 1998). Adler et al. (1999) found that the majority of CAM users who used conventional

therapies did not tell their physicians of their concurrent CAM use. Munstedt et al. (1996) documented the high prevalence of complementary therapy use of patients with chronic diseases, mostly those who require long-term therapy. This situation enhances the risk for preventable drug-related problems, such as noncompliance and drug interactions, that may result in problems with medication use (Brown, 1996).

Brown (1998) conducted a study on alternative medicine that had startling results. It showed that 33.1% of the pharmacists didn't know of any of their patients using complementary therapies, and 35.9% of the pharmacists indicated that they were never asked about CAM use. Respondents also reported that 25.9% of the people who use complementary therapies are generally not adherent to their prescription drug regimens. However, it is not clear whether the non-adherence rate to conventional medicine differs for patients who do not use CAM.

Adler et al. (1999) conducted a study on disclosing complementary medicine use during a medical encounter involving women with breast cancer. They found that only 54% of the women being treated by an alternative medicine practitioner told their physicians about their CAM use. Conversely, 94% told their alternative medicine practitioners about their biomedicine usage. Reasons for not disclosing CAM use to physicians were: 1) the patients thought that the physician wouldn't be interested; 2) that the physician would give a negative response; 3) the patient was not willing or able to give useful information about the CAM therapy; and 4) the perception the use the CAM wasn't relevant in their use of biomedicine. Adler et al. (1999) concluded that communication of the patients' CAM use is poorly integrated into the medical encounter compared to discussions of biomedical treatment with complementary practitioners.

Patients' disclosure is often cautiously modulated, even by those who would welcome an open discussion with their physicians.

Verhoef et al. (1998) conducted a study about cancer patients and their expectations of their family physician concerning communication about complementary medicine. The authors report that studies have shown that complementary medicine use ranges from 9% to 81% for people with cancer. Data from their study indicated that it was important for the family physician to become sensitized to the patient's CAM use, and it revealed how the physician's reaction to this use can affect the patient's outcome. Another conclusion was that patients could be quite demanding when it comes to wanting their physicians to find out about or know more about CAM. Results suggest that education is needed for both patients and physicians.

Oldendick et al. (2000) found that 43% of physicians surveyed were aware that their patients were using CAM. These physicians are most aware of their patients who use self-help or support group participation and lifestyle diets. The physicians were least likely to be aware of patient usage of healing therapies (72.9%) and were less likely to recommend this type of CAM (7.4%). Physicians were most likely to recommend biofeedback (39.3%) to their patients and would also recommend life-style diets, self-help groups, and relaxation techniques 33% of the time. Approximately, 20% of CAM users said that the main source of information of these therapies was a medical doctor, and another 20% said that their spouse or other relative was the main source. Other sources were magazines (16.4%), friend or neighbor (9.2%), their own experience (8.8%), television (6.0%), books (5.3%), newspapers (4.2%), or other health care professionals (4.1%).

### Complementary Medicine Use and Appalachia

Appalachia is a region that was federally defined by the Appalachian Regional Act of 1965. This region contains approximately 21 million people and includes parts of 13 states. West Virginia is the only state that lies completely within the Appalachian region. Appalachia has a long history of economic instability commonly associated with outsider exploitation of its resources (Rosswurm and Dent, 1996). This has led to distrust of outsiders and bureaucracies (Cunningham, 1987). “Although Appalachians are similar in race, religion, ancestry, and language to the mainstream culture, they have been described as a deviant, geographically isolated subculture. Appalachians are perceived to be practical, people oriented, easy paced, and fatalistic. They value family, religion, tradition, and personal treatment” (Rosswurm and Dent, 1996).

Illness (Boyle and Andrews, 1989) reflects the cultural understanding of what it means to be ill and how to deal with illness. Previous studies suggest that Appalachians view illness and disability as an inevitable part of aging or as an event determined by God (Rosswurm and Dent, 1996). Horton (1984) reported that extended families in the rural areas of Appalachia take care of children and the duties of the ill. Although women in Horton’s study viewed their surgeries as vacations, Appalachians have commonly feared hospitals as a place to go and die (Lewis et al., 1985). Because of the culture, Appalachians may be more amenable to non-conventional treatments. Additionally, they also tend to have lower education and income than the rest of the country, which may preclude visits to conventional practitioners. Thus, it is possible that Appalachians would generally use more CAM therapies.

Given the excess morbidity of chronic disease in West Virginia (West Virginia Bureau of Public Health, 1994), the impact of CAM may be particularly high in this state.



## **CHAPTER 3**

### **METHODS**

This section is concerned with the methods used to achieve the research objectives. It includes subsections labeled study population, data collection, instrument development and validation, data analysis, and limitations.

#### **Study Population**

##### Sample Selection

The subjects for this study were randomly selected from eight counties in the state of West Virginia. Phone directories from Brooke, Hancock, Monongalia, Kanawha, Putnam, Logan, Webster, and Nicholas counties were used to establish the sample needed for the study. Individuals were eligible for the study if they met the following criteria:

- the individual was listed in one of the eight county Bell Atlantic telephone directories;
- the individual had a complete address given when the reverse telephone number look-up was applied using the Bell Atlantic web page; and
- the individual was 18 years or older.

### Sample Size and Procedure

The study was conducted with an initial sample size of 1200 individuals. These individuals were selected from eight counties (Brooke, Hancock, Monongalia, Kanawha, Logan, Nicholas, Webster, and Putnam) that would be representative of the state of West Virginia. Two criteria were used to demonstrate that these eight counties were representative of West Virginia:

- 1) the eight counties' poverty rates (when averaged) were similar to that of the state of West Virginia; and
- 2) the eight counties educational attainment (when averaged) were similar to that of the state of West Virginia.

According to the U.S. Census Bureau (1989), West Virginia had 19.7% of residents living below the poverty level for all counties in 1989. The eight counties chosen, when averaged, had a poverty level of 19.8%. West Virginia had an education attainment rate, which is the percent of individuals 25 years or older that graduated high school, of 66%. The eight counties used in the study had an average educational attainment rate (at least a high school education) of 65.9%.

The sample of 1200 individuals was based on the available funding for the project. Past experience with surveys of the general public in West Virginia led us to expect a 15 to 20 percent response rate. Thus, we anticipated that approximately 200-250 responses would be received. This would provide a sufficient response for most analyses. Individuals from the eight county directories were counted to find a total

population count. These eight counties had a total directory population of approximately 420,000 individuals. The total directory size of the eight counties was divided by the sample size needed. This figure indicated that every 350<sup>th</sup> name was to be chosen for participation in this study.

After the eight county directories were received, every 350<sup>th</sup> name was highlighted. Once all the names of individuals were identified, a label program in Microsoft Word was used to enter these eligible individuals. A reverse telephone-number lookup program was used from the Bell Atlantic web page. When a telephone number was entered in the reverse lookup box, a search was done to give the appropriate address of the phone number entered. Three potential scenario's were:

- 1) the search could provide a usable full address of an individual to which a survey was mailed to that individual;
- 2) the search could provide one or more names of individuals under which the phone number was listed under; and
- 3) the search could provide a name without a complete usable address.

If the search provided a usable address, then the name and address was entered into the Microsoft Word label program. If the address provided more than one name for a usable address, the first name that appeared (the web page did this alphabetically) was entered into the label program. If the search provided an address that was not usable, then the phone number that was directly under it in the phone directory was entered to see if it

provided a usable address. This continued until a usable address was found, then the next highlighted name was checked.

Once all 1200 names and addresses were entered, the labels were printed. The labels were placed on envelopes. A cover letter and the survey were placed in each envelope and mailed.

### **Data Collection Procedures**

A non-experimental, cross-sectional study design was used by distributing mail surveys. Data from these surveys were collected over a two and a half-month period from July to October 2000.

The purpose and nature of the study was discussed in a cover letter (Appendix A). The questionnaire and cover letter were approved by the Institutional Review Board (IRB) before any mailings went out. Participants who received the survey were then asked to complete the questionnaire, informing them that the information they gave would be completely anonymous. These individuals were also informed about their right to refuse participation in the study. The respondents were then instructed to return the completed survey in a self-addressed stamped envelope.

### **Instrument Development and Validation**

#### **Instrument Development**

Based on the literature review and committee member input, question items were developed to measure the frequency of use and perceived effectiveness of complementary therapies. Other items were developed to estimate physician involvement in these

choices and how the subjects' perceived health status plays a part in their decision to use complementary therapies. The questionnaire consisted of four sections: 1) general information; 2) complementary and alternative medicine use; 3) opinions; and 4) background information.

The first section, labeled general information, dealt with the individual's locus-of-control, satisfaction with conventional practitioners, and health status questions. The section concerning complementary and alternative medicine use had questions concerning the use of 18 different complementary therapies. If respondents reported CAM utilization, then frequency of use and reasons for doing so were listed. Also, questions pertaining to physician involvement were included in this section.

Section three included questions showing the respondents' opinions on the safety and effectiveness of herbal remedies compared to prescription drugs. These answers were used to examine the relationship of complementary medicine use along with questions dealing with the individual's perceptions of conventional medicine. The last section contained questions about the subject's age, gender, income, educational attainment, and medical conditions. The demographic questions produced a profile of an individual who uses complementary medicine in West Virginia as well as profiles for each individual therapy.

### Content Validity

The content validity of the instrument was assessed by expert review and pilot-testing. Experts in this area were called upon to give their opinions and possible revisions about questions included in the survey. Following this expert review, a pilot

test of the questionnaire was conducted with 20 people in the general public to check for problems associated with wording and grammar. Committee members who helped refine the questionnaire content then reviewed and approved the final instrument (Appendix B).

### **Data Analysis**

The following analyses were conducted for the objectives listed:

- 1. Determine the percentage of West Virginians that have used at least one type of complementary therapy within the last year.** A variable was created to reflect whether the subject had responded “Yes” for any of the listed therapies. The frequency of this variable was then calculated.
- 2. Identify the most commonly used “complementary” therapies.** The sum of “Yes” responses for each individual therapy was used to determine the most frequently used complementary therapy.
- 3. Examine the demographic characteristics of users of complementary medicine.** A multiple logistic regression model was used to examine demographic differences of users.
- 4. Determine whether people with certain types of health problems are more likely to use complementary therapies.** A multiple logistic regression model was used to determine whether having a certain medical condition could lead to complementary medicine use.
- 5. Show the percentage of users who inform their physicians of complementary medicine use.** Each respondent either has informed or not informed their physician of this use to give a final percentage for physician involvement.
- 6. Determine West Virginians’ perceptions of the effectiveness and safety of complementary therapies.** The frequency of various responses to these two items were examined to determine what the respondent’s perceptions of the effectiveness and safety of CAM.
- 7. Examine whether West Virginians with a perceived poorer health status use more complementary therapies.** Chi-square test was conducted to see if individuals with a perceived poorer health status were more likely to use a complementary therapy.

The data for this study were analyzed by the Statistical Package for Social Sciences (SPSS, version 9.0). The file contained a total of 394 cases of usable questionnaires. The data were checked over and over for errors from data entry, then frequencies were obtained for all the variables in rechecking the cleanliness of the data.

Analytical methods used for testing the study objectives were:

- 1) Frequency tests;
- 2) Multiple Regression; and
- 3) Chi-square test.

#### Analyses for Objectives 1,2,5, and 6

Frequency tests were used in answering certain objectives mentioned above. Objective one was answered by creating a new variable in the data table. This variable was called anycam. This variable was then analyzed appropriately to determine the percentage of individuals who used at least one complementary therapy within the last year. Another variable was also created called anycamvi. This variable was created to leave out vitamin/mineral supplement use as a CAM. This variable was also analyzed to see the percentage of respondents who used at least one CAM (not including vitamin/mineral supplements) within the last year.

The second objective used a simple frequency test on all the complementary therapies that showed which therapies were used most in the last year. The same test was used to analyze objective five. The simple frequency test showed the percentage of users of CAM that consulted their physician of this use. Objective six used the frequency of one separate question to determine the safety and effectiveness of CAM for all respondents.

#### Analyses of Objectives 3 and 4

A multiple logistic regression model was constructed wherein “use/nonuse” of any CAM therapy served as the bivariate dependent variable. The following demographic parameters served as independent variables: Gender (coded 0,1 with 1 representing male), marital status (coded 1-4 representing, married single, separated/divorced, and widowed), ethnicity (coded 0,1 with 1 representing Caucasian), age (coded 1-6 representing age categories from 18-65+ years), income (coded 1-7 representing income ranges from less than \$10,000 to \$50,000 or more), education attainment level (coded 1-6 representing education levels from less than high school to having a Graduate degree), and insurance coverage (coded 0,1 with 1 representing being covered by Medicare, Medicaid, private, and/or any combination of the three). Another multiple logistic regression model was constructed with “use/nonuse” of any CAM therapy serving as the bivariate dependent variable. Several chronic health problems served as the independent variables and were coded (0,1) where “1” represented the presence of the condition.

#### Analysis of Objective 7

A chi-square test was chosen to determine if respondent’s perception of their own health status led to the use of CAM. A crosstabulation of “health status” (a category consisting of five possible answers) and CAM use (consisting of two possible answers) was used to determine what percentage of users and nonusers felt their health status to be. This objective was done both by considering vitamin/mineral supplements as a CAM and by not considering vitamin/mineral supplements a CAM.



## **Limitations**

This study was constructed to be similar or identical to some of the larger national studies dealing with complementary medicine. By doing this, the study was compared to the others to determine whether West Virginia had a different usage pattern and profile from those of the nation.

The generalizability of findings was limited to people of West Virginia and can be somewhat telling of the population of Appalachia. As with Astin's study (1998), another limitation to this study was that it is cross-sectional and does not give definitive conclusions about cause-and-effect relationships, meaning that it was not clear whether certain medical conditions led to complementary medicine use or having had these medical conditions led to a certain view about conventional medicine.

The study had some of the same limitations as the Eisenberg (1998) study. It was limited to people who could read and write in English and by the sampling frame that was made up by people who had telephones. Therefore, this survey was more likely to leave out the rural and poor given that they have been found to be more likely not to have a telephone. Also, self-reporting of complementary therapy use and frequency of this use may not be accurate.

Another limitation is that the scientific community views what should be considered complementary therapies differently. Eisenberg's definition of complementary therapies (neither taught widely in U.S. schools or available in many U.S. hospitals) has become a target for these therapies because of the integration of CAM into academic curricula and its inclusion into insurance packages. The definition for

complementary therapies for this study is similar to that of other national studies, the inclusion or exclusion of various therapies can change the frequency of CAM use dramatically (Druss and Rosenheck, 1999).

## **CHAPTER 4**

### **RESULTS**

#### Subjects

Of the 1200 questionnaires that were mailed, 120 were returned as undeliverable, leaving 1080 eligible respondents. Three hundred and ninety-four usable responses were received, yielding a response rate of 36.5% (394/1080).

Of the 394 respondents who completed the questionnaire, 196 (50.4%) were male and 193 (49.6%) were female. The majority of persons were married (66.1%) and Caucasian (95.4%). Almost thirty-two percent of the individuals were in the age range of 65 years and over. Approximately 40% of the respondents were retired, and 40% were working full-time. Over 34% of respondents had an income range of \$50,000 and higher, compared to 64% of respondents in the income range of \$50,000 and less. About half of the individuals had an education level of “some college with no degree” or less. The most common reported medical conditions were arthritis (29.8%) and high blood pressure (29.3%). The characteristics of the respondents can be found in Table 4-1.

**Table 4-1 Sample Characteristics (N=394)**

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CHARACTERISTIC	FREQUENCY	PERCENT (%)
Gender		
Male	196	50.4
Female	193	49.6
Marital Status		
Married	257	66.1
Single	34	8.7
Separated/Divorced	49	12.6
Widowed	49	12.6
Ethnicity		
White	370	95.4
African American	8	2.0
Hispanic	1	0.3
Asian/Pacific Islander	5	1.3
Native American/Indian	2	0.5
Other	2	0.5
Age		
18-24 years	12	3.1
25-34 years	35	9.1
35-44 years	65	16.9
45-54 years	77	20.0
55-64 years	71	18.4
65 or older	125	32.5
Employment Status		
Full-time	158	41.8
Part-time	34	9.0
Unemployed	35	9.3
Retired	151	39.9

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**Table 4-1 Sample Characteristics continued (N=394)**

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CHARACTERISTIC	FREQUENCY	PERCENT (%)
<b>Income</b>		
Less than \$10,000	36	10.4
\$10,000-\$19,999	48	13.9
\$20,000-\$29,999	52	15.0
\$30,000-\$39,999	47	13.6
\$40,000-\$49,999	34	9.8
\$50,000 or more	119	34.4
Don't know	10	2.9
<b>Education</b>		
Less than high school	42	10.9
Graduated high school or GED	97	25.1
Some college/no degree	93	24.1
Associate or Technical degree	33	8.5
Bachelor's degree	63	16.3
Graduate degree	58	15.0
<b>Medical Conditions</b>		
High Blood Pressure	115	29.3
Heart Disease	53	13.5
Diabetes	46	11.7
Arthritis	117	29.8
Kidney Problems	21	5.3
Cancer	23	5.9
Chronic Back Pain	75	19.1
Respiratory Problems	60	15.3
Other	99	25.1

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## Use of Complementary and Alternative Medicine

The first objective was to determine the percentage of West Virginians that have used at least one complementary or alternative medical therapy (CAM) within the last year. The second objective was to determine the most commonly used complementary therapies.

If vitamin/mineral supplement use was considered a complementary therapy, then 83.5% of respondents had used at least one CAM modality within the last year. If vitamin/mineral use was not considered a complementary therapy, then 59.6% of respondents reported having used at least one type of CAM in the last year. The only CAM therapy used by the majority of respondents was vitamin/mineral supplements (68%). Some of the other more commonly used therapies were special diet (23.5%), herbal supplements (21.0%), home remedies (16.9%), meditation (16.1%), and spiritual healing (15.3%). There was a category for the use of other complementary therapies, but only two respondents answered what could appropriately be considered CAM. All of these results can be found in Table 4-2.

## Demographics and CAM

Logistic regression was used to determine if insurance coverage, education, gender, marital status, ethnicity, age, and income had any significant impact on the use of complementary therapies. When vitamin/mineral use was considered a complementary therapy, age ( $p=.0001$ ) was the only significant predictor for the use of complementary and alternative medicine with older respondents being more likely to use CAM than younger respondents (Table 4-3).

**Table 4-2 Complementary Medicine Use (N=394)**

COMPLEMENTARY THERAPY	FREQUENCY	PERCENT (%)
Vitamin/Mineral Supplements	264	67.9
Special Diet	91	23.5
Herbal Supplements	82	21.0
Home Remedies	65	16.9
Meditation	63	16.1
Spiritual Healing	59	15.3
Massage Therapy	33	8.4
Chiropractic	28	7.1
Support Groups	26	6.7
Aromatherapy	23	5.9
Crystals/Magnets	13	3.4
Yoga/Tai Chi	6	1.6
Hypnosis	6	1.5
Guided Imagery	5	1.3
Biofeedback	4	1.0
Acupuncture	4	1.0
Reiki	0	0.0

**Table 4-3 Logistic Regression of Demographic Variables and CAM Use:  
Vitamin/Mineral Supplements Considered a Complementary Therapy (N=394)**

CHARACTERISTIC	$\beta$	p-value	OR <sup>a</sup>	C.I.
Insurance Coverage	-0.52	0.44	0.59	(0.15, 2.29)
Gender	-0.17	0.58	0.83	(0.45, 1.57)
Marital Status	-0.46	0.23	0.63	(0.29, 1.35)
Ethnicity	0.66	0.28	1.94	(0.57, 6.56)
Age	0.43	0.0001*	1.54	(1.25, 1.91)
Income	0.04	0.66	1.05	(0.85, 1.29)
Education	0.18	0.10	1.20	(0.97, 1.50)

a. OR= odds ratio

\*significant at the .05 level



When vitamin/mineral use wasn't considered a complementary therapy, age ( $p=0.01$ ) and gender ( $p=0.04$ ) were shown as significant predictors for CAM use (Table 4-4). CAM use was most prevalent in person's aged 55-64 years (67.6% of persons in this strata used CAM). Additionally, 64.8% of women used CAM compared to 54.6% of men ( $\chi^2 =4.18$ ,  $p=.04$ ).

### Medical Conditions and CAM

A logistic regression model was constructed to test the relationship of medical conditions and CAM use. When vitamin/mineral use was considered a CAM therapy, there were no significant predictors evident (Table 4-5). However, when vitamin/mineral use was not considered a CAM, diabetes ( $p=0.02$ ) and chronic back pain ( $p=0.009$ ) were significant predictors for complementary medicine use as shown in Table 4-6.

Respondents with diabetes were 2.5 times more likely to use CAM than those without diabetes, and persons with chronic back pain were 2.4 times more likely to use CAM than respondents without chronic back pain. Respondents with diabetes used had a 80.4% usage rate of CAM ( $\chi^2 =9.23$ ,  $p=.002$ ), and persons with chronic back pain had a CAM usage rate of 80.0% ( $\chi^2 =15.74$ ,  $p<.001$ ).

### Physician-Patient Communication about CAM

Objective five was to show the percentage of users who inform their physicians of complementary medicine use. This was accomplished by calculating the frequency of CAM users who informed their physicians about CAM use.

**Table 4-4 Logistic Regression of Demographic Variables and CAM Use:  
Vitamin/Mineral Supplements NOT Considered a Complementary Therapy  
(N=394)**

CHARACTERISTIC	$\beta$	p-value	OR <sup>a</sup>	C.I.
Insurance Coverage	-0.54	0.29	0.57	(0.21, 1.60)
Gender	-0.49	0.04*	0.61	(0.38, 0.98)
Marital Status	-0.15	0.59	0.86	(0.50, 1.49)
Ethnicity	0.18	0.72	1.20	(0.43, 3.34)
Age	0.19	0.01*	1.22	(1.04, 1.43)
Income	-0.01	0.89	0.99	(0.85, 1.16)
Education	0.08	0.29	1.09	(0.93, 1.28)

a. OR= odds ratio

\* significant at the .05 level

**Table 4-5 Logistic Regression of Medical Conditions and CAM Use:  
Vitamin/Mineral Supplements Considered a Complementary Therapy (N=393)**

CHARACTERISTIC	$\beta$	p-value	OR <sup>a</sup>	C.I.
High Blood Pressure	0.65	0.11	1.93	(0.85, 4.89)
Heart Disease	-0.23	0.62	0.79	(0.30, 2.04)
Diabetes	1.93	0.06	6.93	(0.91, 52.8)
Arthritis	0.54	0.17	1.73	(0.78, 3.80)
Kidney Problems	-0.62	0.37	0.54	(0.14, 2.11)
Cancer	0.76	0.32	2.15	(0.46, 9.99)
Chronic Back Pain	0.64	0.17	1.91	(0.75, 4.86)
Respiratory Problems	0.16	0.71	1.18	(0.47, 2.95)

a. OR= odds ratio

**Table 4-6 Logistic Regression of Medical Conditions and CAM Use:  
Vitamin/Mineral Supplements NOT Considered a Complementary Therapy  
(N=393)**

CHARACTERISTIC	$\beta$	p-value	OR <sup>a</sup>	C.I.
High Blood Pressure	0.06	0.82	1.06	(0.62, 1.84)
Heart Disease	-0.07	0.84	0.93	(0.46, 1.88)
Diabetes	0.90	0.02*	2.46	(1.09, 5.53)
Arthritis	0.52	0.058	1.69	(0.98, 2.89)
Kidney Problems	0.50	0.41	1.65	(0.50, 5.43)
Cancer	0.35	0.47	1.43	(0.54, 3.76)
Chronic Back Pain	0.85	0.009*	2.35	(1.23, 4.49)
Respiratory Problems	0.55	0.10	1.74	(0.89, 3.43)

a. OR= odds ratio

\* significant at the .05 level

Twenty-six percent of CAM users did not inform their physician regarding their use of CAM (Table 4-7). These individuals who didn't disclose CAM use to their physician were most likely to use vitamin/mineral supplements (82.4%) followed by herbal supplements (47.8%). The two reasons that were most frequently cited for not disclosing complementary medicine use were: 1) that the person felt it wasn't necessary to tell their physician; and 2) the respondent felt that the physician was ignorant of CAM products or not interested in CAM usage.

#### Perceptions of Safety and Effectiveness

Only 14.3% of respondents indicated agreement with the statement, "Herbs are safer than prescription medicines," while 4% of respondents agreed or strongly agreed that herbs are more effective than prescription medicines (Table 4-8).

#### Health Status and CAM Use

When vitamin/mineral supplements were considered a complementary therapy, there was not a significant relationship between self-rated health and CAM use (Table 4-9).

However, when vitamin/mineral supplements were not considered a CAM, a chi-square test showed a significant relationship ( $p=0.014$ ) between perceived health status and CAM use. Results showed that respondents who rated their health as "poor", "fair", or "good" were more likely to use CAM than persons who rated their health as "very good" or "excellent" (Table 4-10).

**Table 4-7 Physician Consultation (N=267)**

VARIABLE	FREQUENCY	PERCENT (%)
Informed Their Physician of CAM Use	191	71.5
Did Not Inform Their Physician of CAM Use	69	25.8
Did Not Remember if They Told Their Physician About Their CAM Use	7	2.6

**Table 4-8 Perceptions of Complementary Therapies (N=394)**

VARIABLE	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Herbs are Safer than Prescription Medicines	10.1	27.1	48.5	11.4	2.9
Herbs are More Effective than Prescription Meds	11.1	34.2	50.7	2.7	1.3

**Table 4-9 CAM Use and Health Status: Vitamin/Mineral Supplements Considered a CAM (N=394)**

VARIABLE	CAM USE		CHI-SQ	p-value
	YES (%)	NO (%)		
Health Status			5.934	.204
Poor	84.0	16.0		
Fair	83.8	16.2		
Good	88.3	11.7		
Very Good	77.0	23.0		
Excellent	80.5	19.5		

**Table 4-10 CAM Use and Health Status: Vitamin/Mineral Supplements Not Considered a CAM (N=394)**

VARIABLE	CAM USE		CHI-SQ	p-value
	YES (%)	NO (%)		
Health Status			12.546	.014*
Poor	72.0	28.0		
Fair	63.5	36.5		
Good	66.2	33.8		
Very Good	49.0	51.0		
Excellent	46.3	53.7		

\* significant at the .05 level

## **CHAPTER 5**

### **DISCUSSION**

The purpose of this chapter is to discuss the study's goals and findings. The findings are discussed, when appropriate, along with descriptions of the study implications and conclusions.

#### **Review of Study Objectives**

Complementary and alternative medicine (CAM) is gaining recognition every year in the United States. The total number of CAM visits increased to 47%, from 1990 to 1997, thereby exceeding the number of total visits to all U.S. conventional primary care physicians (Eisenberg et al., 1998). Because of this, researchers are led to profile CAM use in the United States, cultures within the U.S., and different populations within the U.S. to get a better understanding of such usage. The knowledge of who uses CAM and what CAM is used more than others can create a better understanding and lead to other research to determine why Americans are turning to complementary medicine use.

West Virginia is in a region known as Appalachia. With the region's history of economic instability and being taken advantage of by outsider exploitation of its resources, Appalachia has developed a mistrust of outsiders and bureaucracies (Rosswurm and Dent, 1996). Studies have suggested that Appalachia is a geographically isolated subculture in which residents deal with health issues differently than that of other parts of the nation (Rosswurm and Dent, 1996). West Virginia is the only state that lies completely in the Appalachian region and its people are more white, less ethnic, less

educated, have a higher percentage of individuals below the poverty level, and have less money than people in most other states (U.S. Census Bureau, 2000). With such differences in demographic characteristics, it was important to study how these variables played a part in CAM use in comparison with other studies done in other parts of the country. It was also important to determine how different medical problems are associated with CAM considering the relatively unhealthy population in West Virginia.

With complementary medicine use increasing, it is of interest to ascertain the level of physician involvement with patients who use CAM. Without medical involvement, problems like adverse reactions between conventional medicine and complementary therapies, missed diagnoses, and refusal of conventional care could occur (Zollman and Vickers, 1999). Because of these reasons and the differences between Appalachia and the rest of the U.S., it was important to measure disclosure rates of CAM use to conventional practitioners in West Virginia. By gaining associated knowledge and information on why this happens, many risks should become avoidable.

Astin (1998) said that people are faced with an abundance of complementary therapies and are willing to pay out-of-pocket for these therapies. What are the underlying factors that underlie the decision to use CAM? Astin's study measured how effectiveness and safety of herbals compared to that of prescription medicines to try to gain some understanding of this process. In this study of West Virginia, an individual's perceptions of his/her health status was also measured to see if poorer health led to CAM use.



## Discussion of Results

### West Virginians and CAM Use

According to 1990 census data, West Virginia was made up of fairly equal numbers of men and women (51.8% female compared to 48.2% male). The state was primarily white in ethnicity (96.2%) and tends to be older than the rest of the nation (United States Census Bureau, 1998). Persons younger than 18 years comprised 24.7% of the state 1990 population while 15.0% of people were over the age of 65 years. The percentage of persons in the state that graduated high school was 66.0%, and the median household income for a West Virginian in 1990 was \$25,354 (United States Census Bureau, 1998). The respondents in the present study were fairly consistent with the state average for gender distribution (50.4% male versus 49.6% female) and ethnicity (95.4% were white). However, the present study had more respondents that were older (32.5% over 65 years), more educated (89.1% graduated high school), and were of higher income ranges (34.4% made \$50,000 or more). Because of the differences between the respondents and the state averages for age, education, and income, generalizations of the results to the entire state should be made with caution.

Very little is known about Appalachia and its' perception towards the use of complementary medicine. National studies have shown profiles for the average user of complementary medicine. Eisenberg's et al. (1998) study showed that 42.1% of respondents used at least one complementary therapy within the last year. In 1998 Astin reported that 40% of responders used some form of CAM within the previous year. Comparing the two national studies to the present study based in West Virginia, there was a larger usage rate of CAM by West Virginians (59.6% when vitamin/mineral

supplements were not considered a CAM) compared to the other two studies' rates of 42.6% and 40%. This is primarily due to the fact that home remedies, or folk medicines, and herbal supplements were used considerably more than in other studies. This is evidence suggesting that Appalachians are more likely not to rely solely on medical doctors and are inclined to use folk healers and family as health providers (Rosswurm and Dent, 1996).

In 1998, Astin reported that the complementary therapies most used were chiropractic (15.7%), lifestyle diet (8.0%), exercise/movement (7.2%), and relaxation (6.9%). Eisenberg's (1998) study reported relaxation techniques (16.3%) to be used most frequently followed by herbal medicine (12.1%), massage (11.1%), and chiropractic (11.0%). In West Virginia vitamin/mineral supplements were used more extensively (67.9%) than any other CAM. Other leading categories of CAM use were special diet (23.5%), herbal supplements (21.0%), and home remedies (16.9%). These results can have serious implications due to the fact that so many respondents used herbal supplements within the last year. Individuals could be taking these products along with prescription drugs. The majority of respondents did not report CAM use to their physician, increasing the risks for serious drug-drug interactions.

A study by Eisenberg et al. (1998) indicated that the profile for a user of CAM was white, female, had some college education, was in the age range of 35 to 49 years, had annual income of \$50,000 and higher, and lived in the West. The present study showed, when vitamin/mineral supplements was not considered CAM, that 64.8% of women ( $\chi^2=4.18$ ,  $p=0.04$ ) used CAM compared to only 54.6% of men. Also, individuals in the age range of 55-64 years (67.6%) showed more CAM use than any

other age range. These results are very similar to Eisenberg's and other studies offering profiles for CAM users.

### Characteristics Associated with CAM Use

In a survey of readers of *Consumer Reports* (2000), only 65% of respondents indicated that they were satisfied with conventional medicine. If people do not receive satisfactory care from a conventional practitioner, they may turn to alternative healers or therapies. Eisenberg et al. (1998) indicated that the most prevalent conditions that CAM was used for were back problems (24.0%), allergies (20.7%), fatigue (16.7%), and arthritis (16.6%). *Consumer Reports* (2000) showed that CAM was used mainly for hard to treat conditions like back and neck problems and fibromyalgia. Astin reported in 1998 that the most frequent health problems that CAM was to treat were chronic pain (37%), chronic fatigue syndrome (31%), sprain and muscle strains (26%), and arthritis (25%). Data from the present study showed that CAM was used significantly more for diabetes (80.4%) and chronic back pain (80.0%). Chronic health problems are evident in West Virginia (West Virginia Bureau of Public Health, 1994). While the use of CAM for chronic back pain correlates to other national studies depicting CAM use, the large number of respondents that use complementary therapies for diabetes could be associated with the increased attention given by the media for complementary ways to help in diabetes management.

### Physician-Patient Communication about CAM Use

The lack of communication between physician and patient about the use of CAM could lead to adverse drug reactions and missed diagnoses (Zollman and Vickers, 1999). Studies have shown that 35-40 percent of patients do not tell their physician of CAM use and this (Adler and Fosket, 1999; Eisenberg et al., 1998; Verhoef et al., 1999) percentage increases to upwards of 70% of patients that have chronic conditions. Only 26% of respondents from West Virginia did not disclose CAM use to their physician, which indicates a higher rate of disclosure than previous studies. This high rate of disclosure may be related to the inclusion of vitamin/mineral supplements as CAM, which patients may feel more comfortable discussing with their physician. Those who did not disclose their CAM use to physicians often indicated that they did not feel it necessary to do so. This trend is very risky and more research is needed to understand disclosure rates of CAM to the patient's physician and how to improve communications between physicians and patients regarding CAM.

### Effectiveness and Safety of CAM

Appalachians have tended to rely on family, faith, and folk healers rather than physicians (Rosswurm and Dent, 1996). Oldendick et al. reported in 2000 that 60% of their respondents believed that CAM therapy was very effective. With this in mind, the present study measured how West Virginians perceive the safety and effectiveness of prescription medications when compared to herbal remedies. The results revealed that 37% of respondents felt prescription drugs were safer compared to 14 % who felt herbals were safer. Also, 45% of respondents thought prescription medications were more

effective compared to only 4% who thought herbal medicines to be more effective. Even though a large number of respondents have used a CAM therapy within the last year, many respondents felt that conventional medicines are still safer and more effective than complementary ones.

### Health Status and CAM

Perceptions of an individual's health status was also measured to see if individuals who think of themselves as having poor health would use more CAM than those who see themselves as healthy. Astin (1998) demonstrated in his study that CAM use did increase as health status declined. The present study also indicated complementary therapy use was highest among people with poor or fair health status ( $\chi^2 = 12.55$ ,  $p = .01$ ). As Eisenberg indicated, this finding could be attributed to the possibility that people with poorer health have had less success in treating their health problems; therefore, they have turned to alternatives.

### **Implications and Future Research**

Considering the limitations to this study, certain results can make contributions to our understanding of complementary medicine. West Virginians indicated that their CAM use in the previous year was higher than other national studies found in the past. This is in part due to the extensive use of home remedies, vitamin/mineral supplements, and herbal supplements as compared to other parts of the nation. Eisenberg et al. (1998) found a 380% increase in the use of herbal remedies and 130% increase in high-dose vitamin use, so it is not surprising that nearly 1 in 5 individuals taking prescription

medications also take herbal supplements, high-dose vitamins supplements, or both. Eisenberg also noted that nearly 15 million adults per year were at risk for potential adverse interactions involving prescription medications and herbal supplements or megavitamins. Even though West Virginians tend to communicate their CAM use to their physician at higher rates than the rest of the nation, this communication is essential in getting rid of the current status quo, “don’t ask and don’t tell” (Eisenberg, 1997). Also, it is important for physicians to have some understanding of how their patient’s health care needs are not being met. Healthcare professionals are also responsible for developing greater awareness, efficacy, and reasons why their patients use CAM (Astin, 1998).

Because of the dramatic increase in the use of complementary medicine, it is suggested that, “federal agencies, private corporations, foundations, and academic institutions adopt a more proactive posture concerning the implementation of clinical and basic science research, the development of relevant educational curricula, credentialing and referral guidelines, improved quality control of dietary supplements, and the establishment of postmarket surveillance of drug-herb (and drug-supplement) interactions” (Eisenberg et al., 1998). It also seems important, with the increase in CAM use, to understand why a significant proportion of the population is turning to CAM therapies to treat their illnesses and maintain their general wellbeing (Eisenberg et al., 1998). The current study hopes to make a contribution in these areas and to at least help individuals understand some of the reasons for the abundance of CAM use.

## **Conclusion**

West Virginians in this study used more complementary therapies than other parts of the nation regardless of whether vitamin/mineral supplements were considered CAM. This usage is higher among women and the elderly, as well as individuals with diabetes, chronic back pain, and those who rated their health as fair or poor. Traditional health care providers should be aware of this trend because of the risks involved, such as missed diagnoses, adverse drug interactions, and the possible discontinuation of conventional treatment altogether.

## BIBLIOGRAPHY

- Adler SR, Fosket JR. (1999). Disclosing Complementary and Alternative Medicine Use in the Medical Encounter. *J Fam Prac.* 48(6): 453-458.
- Astin JA. (1998). Why Patients Use Alternative Medicine. *JAMA.* 279(19): 1548-1553.
- Boyle J, Andrews M. (1989). *Transcultural Concepts in Nursing Care.* Glenview, IL: Scott, Foreman.
- Brown CM. (1998). Use of Alternative Therapies and their Impact on Compliance: Perceptions of Community Pharmacists in Texas. *J Am Pharm Ass.* 38(5): 603-608.
- Brown CM, Segal R. (1996). The Effects of Health and Treatment Perceptions on the Use of Prescribed Medication and Home Remedies Among African American and White American Hypertensives. *Soc Sci Med.* 43: 903-917.
- Caperton, Gaston et al. (1994). *The Burden of Diabetes in West Virginia.* West Virginia Department of Health and Human Resources, Bureau of Public Health, Office of Epidemiology and Health Promotion, and Diabetes Control Program & Health Statistics Center. 4:1-7.
- Clark LT. (1991). Improving Compliance and Increasing Control of Hypertension: Needs of Special Hypertensive Populations. *Am Heart J.* 121(suppl): 664-669.
- Consumer Reports.* (2000). The Mainstreaming of Alternative Medicine. 17-25.
- Cunningham R. (1987). *Apples in the Food.* Knoxville: University of Tennessee Press.
- Druss BG, Rosenheck RA. (1999). Association Between Use of Unconventional Therapies and Conventional Medical Services. *JAMA.* 282(7): 651-656.
- Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Rompay MV, Kessler RC. (1998). Trends in Alternative Medicine Use in the United States, 1990-1997. *JAMA.* 280(18): 1569-1575.
- Eisenberg DM. (1997). Advising Patients who Seek Alternative Medical Therapies. *Ann Intern Med.* 127:61-69.
- Eisenberg DM, Kessler RC, Foster C, et al. (1993). Unconventional Medicine in the United States. *N Engl J Med.* 328: 246-252.
- Fuller RC. (1992). The Turn to Alternative Medicine. *Second Opinion.* 18(1): 10-32.



- Gower T. (1999). Talk about a Revolution. *Health*. 5: 92-97.
- Healthcare Open Learning. (1999). Who Uses Complementary Therapies? *Nursing Times Learning Curve*. 2(11): 12-13.
- Horton C. (1984). Women have Headaches, Men have Backaches: Patterns of Illness in an Appalachian Community. *Soc Sci Med*. 19: 647-654.
- Islander CB. (1998). Why Complementary Medicine? *People's Medical Society Newsletter*. 17(4): 1-2.
- Isserman AM. (1997). Appalachia Then and Now: An Update of "The Realities of Deprivation" Reported to the President in 1964. *J Appalachian Stud*. 3: 43-69.
- Kitai E, Vinker S, Sandiuk A, Hornik O, Zeltcer C, Gaver A. (1998). Use of Complementary and Alternative Medicine Among Primary Care Patients. *Family Practice*. 15(5): 411-414.
- Kravetz SB. (2000). Survey Quantifies Use of Complementary Medications at Medical Center. *Pharmacy Practice News*. 48.
- Levin JS, Coreil J. (1986). 'New Age' Healing in the US. *Soc Sci Med*. 23(9): 889-897.
- Lewis S, Messner R, McDowell W. (1985). An Unchanging Culture. *Journal of Gerontological Nursing*. 11(8): 21-26.
- Muller JL, Clausen KA. (1998). Top Herbal Products Encountered in Drug Information Requests. *Drug Benefit Trends*. 10(5): 43-50.
- Munstedt K, Kirsch K, Milch W et al. (1996). Unconventional Cancer Therapy: Survey of Patients with Gynaecological Malignancy. *Arch Gynecol Obstet*. 258: 81-88.
- Murray CJL, Michaud CM, McKenna MT, Marks JS. (1998). U.S. Patterns of Mortality by County and Race: 1965-1994. Cambridge Massachusetts: Harvard University Center for Population and Development Studies.
- National Center for Complementary and Alternative Medicine. (2000). Classification of Alternative Medicine Practices.
- Oldendick R, Coker AL, Wieland D, Raymond JI, Probst JC, Schell BJ, Stoskopf CH. (2000). Population-Based Survey of Complementary and Alternative Medicine Usage, Patient Satisfaction, and Physician Involvement. *South Med J*. 93(4): 375-381.
- Rao JK, Arick R, Mihaliak K, Weinberger M. (1998). Using Focus Groups to Understand Arthritis Patients' Perceptions about Unconventional Therapy. *Arthritis Care Research*. 11(4): 253-260.

Ray PH. (1997). The Emerging Culture. *American Demographics*. Available at: [www.demographics.com](http://www.demographics.com).

Rosswurm MA, Dent DM. (1996). Illness Experiences and Health Recovery Behaviors of Patients in Southern Appalachia. *Western Journal of Nursing Research*. 18(4): 441-460.

Ruppert D. (2000). Complementary and Alternative Medicine: More Americans Choose Alternative Care. *Managed Healthcare News*. 23-32.

Schiller PL, Levin JS. (1993). Is Self-Care a Social Movement? *Soc Sci Med*. 17(18): 1343-1352.

Selvester J. (1997). Ayurveda: 5000-Year Old Medical Science for the Next Millennium. *Total Health*. 19(5): 56-59.

Strasen L. (1999). The Silent Healthcare Revolution: The Rising Demand for Complementary Medicine. *Nursing Economics*. 17(5): 246-253.

Troy M. (1994). New Attitudes Drive Product Sales. *Drug Store News for the Pharmacist*. 4(5): S6-S8.

United States Census Bureau. (1998). Available at: [www.tier2.census.gov](http://www.tier2.census.gov).

Verhoef MJ, White MA, Doll R. (1999). Cancer Patients' Expectations of the Role of Family Physicians in Communication about Complementary Therapies. *Cancer Prevention and Control*. 3(3): 181-187.

West Virginia Bureau of Public Health. (1994). The 1992 West Virginia Behavioral Risk Factor Survey. Charleston, WV: Health Statistics Center.

Zollman C, Vickers A. (1999). Complementary Medicine and the Doctor. *BMJ*. 7224: 1558-1562.

## APPENDIX A. COVER LETTER

June 23, 2000

Dear West Virginia resident:

In recent years, there have been an increasing number of persons across the country using medicines or other therapies outside of the “mainstream.” This may include herbs, homeopathy or other treatments such as acupuncture or hypnosis. We don’t know much about West Virginia’s use of these “complementary” or “alternative” therapies. This has led a team of researchers at West Virginia University to study the use of these therapies in our state. Specifically, we are conducting research of persons in West Virginia to determine how often various therapies are used, and why people are using them. We would like you to complete the enclosed survey.

The survey should only take about five minutes to complete, and all your answers will be completely anonymous. Once you have completed the questionnaire, please return it in the enclosed envelope. While we hope you answer all the questions, you don’t need to answer any question that makes you feel uncomfortable.

Our goal is to find out whether West Virginians’ use of complementary medicine is different from that of other parts of the nation. The results of the survey should be helpful in better understanding health practices in our state and will be used as part of a master’s thesis for Mr. Blevins. If you have any questions or concerns about the survey, please call David Nau at West Virginia University at 304-293-1453.

Thank you for your help!

In Good Health,

Josh Blevins, B.S.  
*Graduate Student*  
*West Virginia University*

David Nau, Ph. D.  
*Assistant Professor*  
*West Virginia University*

**APPENDIX B. QUESTIONNAIRE**

**Complementary Medicine Use  
Survey**

## I. General Information

1. What would you prefer regarding decisions about your health care?

- Keep control in your own hands?
- Have an equal partnership with your doctor?
- Leave it in the doctor's hands?

2. How satisfied were you with the care you received, the last time you saw a medical doctor?

- very unsatisfied     unsatisfied     neutral     satisfied     very satisfied

3. The last time you had important questions concerning your health, and you asked a medical doctor about them, did you understand the answers?

- yes                       somewhat                       no

4. How much confidence do you have in the medical doctor you see most often?

- no confidence                       some confidence                       a lot of confidence

5. Would you say that your health in general is:

- poor               fair               good               very good               excellent

6. During the past month, how many days did illness interfere with your work or leisure activities? \_\_\_\_\_

7. How much bodily pain have you had during the past 4 weeks? (check one box)

- none     very mild     mild     moderate     severe     very severe

## II. Complementary and Alternative Medicine Use

1. **In the last year**, have you used any of the following therapies or health promotion strategies? (please check the appropriate boxes)

YES   NO

     **Vitamin/Mineral Supplements**

If yes, how often?

daily                       weekly                       occasionally

Which vitamin/mineral supplements do you use on a regular basis? \_\_\_\_\_

\_\_\_\_\_

     **Herbal Supplements or Homeopathic Remedies**

If yes, how often?

daily                       weekly                       occasionally

Which herbals supplements or homeopathic remedies do you use on a regular basis? \_\_\_\_\_

\_\_\_\_\_

     **Chiropractic**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

\_\_\_\_\_

     **Massage Therapy**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

\_\_\_\_\_

     **Meditation**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

Please describe your reason for using Meditation? \_\_\_\_\_

\_\_\_\_\_

YES    NO

**Yoga/Tai Chi**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

Please describe your reason for using Yoga or Tai Chi? \_\_\_\_\_

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**Aromatherapy**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

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**Crystals/Magnets**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

Please describe your reason for using crystals or magnets? \_\_\_\_\_

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**Guided Imagery**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

Please describe your reason for using Guided Imagery? \_\_\_\_\_

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**Biofeedback**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

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**Acupuncture**

If yes, how often?

daily       weekly       monthly       only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

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YES   NO

 

**Hypnosis**

If yes, how often?

daily    weekly    monthly    only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

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**Reiki**

If yes, how often?

daily    weekly    monthly    only 1-2 times per year

If you use this therapy, what conditions do you use this for? \_\_\_\_\_

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**Support groups**

If yes, how often?

daily    weekly    monthly    only 1-2 times per year

Please describe the group. \_\_\_\_\_

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**Spiritual Healing**

If yes, how often?

daily    weekly    monthly    only 1-2 times per year

Please describe your methods of spiritual healing. \_\_\_\_\_

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**Home Remedies**

If yes, how often?

daily    weekly    monthly    only 1-2 times per year

Please describe the most common home remedy that you use and the conditions you use it for?

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YES    NO

  

**Special Diet**

If you have a special diet, please describe it?

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If you regularly use any other therapies or wellness practices that are **not listed, please list them here.**\_\_\_\_\_

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2. Were any of the therapies listed above recommended by a medical doctor?

yes  
 no

If yes, which ones? \_\_\_\_\_  
\_\_\_\_\_

3. Did you use any of the therapies listed above without informing your medical doctor?

yes                       no                       don't remember  
 did not use any of the therapies listed above

4. If you have used any of the therapies listed above and didn't tell your medical doctor or physician about it, please tell us why.

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### III. Opinions

Please indicate your agreement with the following statements. (Check one box for each)

1. Herbs are safer than prescription medicines.

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

2. Herbs are more effective than prescription medicines.

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

3. Medical doctors don't spend enough time with you.

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

4. It is difficult to find a good doctor.

Strongly Disagree    Disagree    Neutral    Agree    Strongly Agree

### IV. Background Information

1. Gender:    Male                       Female

2. Current Marital Status:

Married                       Separated/Divorced  
 Single                          Widowed

3. Ethnicity:

White                          Asian/Pacific Islander  
 African American          Native American/American Indian  
 Hispanic                      Other (PLEASE LIST) \_\_\_\_\_

4. Age:

- |                          |             |                          |             |
|--------------------------|-------------|--------------------------|-------------|
| <input type="checkbox"/> | 18-24 years | <input type="checkbox"/> | 45-54 years |
| <input type="checkbox"/> | 25-34 years | <input type="checkbox"/> | 55-64 years |
| <input type="checkbox"/> | 35-44 years | <input type="checkbox"/> | 65+ years   |

5. Are you employed? (check all that apply)

- Full-time    Part-time    Unemployed    Retired

6. Household Income?(per year)

- |                          |                    |                          |                   |
|--------------------------|--------------------|--------------------------|-------------------|
| <input type="checkbox"/> | Less than \$10,000 | <input type="checkbox"/> | \$30,000-\$39,999 |
| <input type="checkbox"/> | \$10,000-\$19,999  | <input type="checkbox"/> | \$40,000-\$49,999 |
| <input type="checkbox"/> | \$20,000-\$29,999  | <input type="checkbox"/> | \$50,000 or more  |
|                          |                    | <input type="checkbox"/> | Don't know        |

7. What is the highest level of education you have completed?

- |   |  |
|---|--|
| <input type="checkbox"/> Less than high school        | <input type="checkbox"/> Associate or Technical Degree           |
| <input type="checkbox"/> Graduated high school or GED | <input type="checkbox"/> College for 4 years (Bachelor's degree) |
| <input type="checkbox"/> Some college with no degree  | <input type="checkbox"/> Graduate degree                         |

8. Do you have health insurance? (check all that apply)

- Private    Medicare    Medicaid    None    Don't know

9. Your county of residence?\_\_\_\_\_

10. Do you have any of the following medical conditions?

- |  |  |
|--|--|
| <input type="checkbox"/> High Blood Pressure | <input type="checkbox"/> Kidney Problems                                 |
| <input type="checkbox"/> Heart Disease       | <input type="checkbox"/> Cancer  |
| <input type="checkbox"/> Diabetes            | <input type="checkbox"/> Chronic Back Pain                               |
| <input type="checkbox"/> Arthritis           | <input type="checkbox"/> Respiratory Problems<br>(Ex. Asthma, emphysema) |

Other (**Please list**)

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**Thank-you for taking time to complete this questionnaire!**