

Trends in Utilization of Herbal Medicine: Implications for Health Education

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Abstract

English:

Over the last few decades, people have increasingly used herbal medicine as an alternative or adjunct to modern drugs. Few of the herbs available to the public have undergone testing for safety, efficacy, or potential interaction with other drugs taken for an ailment. Although herbs are generally safe when used properly, they can be harmful and even fatal if misused. The value of herbal products has generally been determined by anecdotal reports therefore, potential risks in utilization of herbal medicine are largely unrecognized. However, trends indicate that there will be greater utilization of the herbal medicine in the future. The great challenge now is to respond appropriately to this burgeoning interest in herbs to eliminate the increasing potential high-risk behaviors among the users. In health education literature, information about herbal medicine is scant. Health educators must take the lead in working with the public, conventional medicine community, pharmacists, medical insurance groups, and those who market herbal medicine to ensure informed health decisions. The purpose of this article is to discuss, in light of the claimed marvels of modern medicine, why is the public increasingly turning to herbal medicine for their health needs? Also, what are the implications for health education in such growing trends in self-diagnosis, and utilization of herbs for self-treatment or preventive health care?

Spanish:

Durante las últimas décadas, mas personas han aumentado el uso de hierbas medicinales como alternativa o en conjunto con medicinas modernas. Pocas de las hierbas disponibles al público han sido probadas para seguridad, eficacia, o interacción potencial con otras medicinas tomadas para una enfermedad. Aunque por lo general, las hierbas son seguras cuando se usan apropiadamente, estas pueden ser dañinas y aun fatal si se mal usan. El valor de los productos herbarios ha sido, por lo general, determinado por informes de anécdotas, por lo cual, los riesgos potenciales en el uso de hierbas medicinales son enormemente desconocidos. Sin embargo, las tendencias indican que va haber un mayor uso de hierbas medicinales en el futuro. El mayor desafío ahora es el de responder apropiadamente a este crecimiento en el interés por el uso de hierbas para eliminar el aumento potencial de los comportamientos de alto-riesgo entre los usuarios. En la literatura de educación de la salud, información acerca de hierbas medicinales es escasa. Educadores de la salud debe tomar la delantera en trabajar con el público, la comunidad medica, farmacéuticos, grupos de seguros médicos, y aquellos que ponen al mercado hierbas medicinales para asegurar que las personas tomen informadas decisiones acerca de su salud. El propósito de este artículo es para discutir, en luz de los aclamados milagros de la medicina moderna, ¿porque la gente ha aumentado su inclinación al uso de hierbas medicinales para sus necesidades medicas? Además, ¿cuales son las implicaciones para el campo de la educación de la salud dado este aumento en la tendencia de auto-diagnostico, y uso de hierbas para el auto-tratamiento o cuidado preventivo de la salud?

Keywords: Alternative Health; Health Education; Self-Help

Introduction

The use of plants for healing purposes predates human history and forms the origin of much of the modern medicine. Long before the advent of modern medicine, herbs were the mainstream remedies for nearly all ailments. Knowledge of herbal medicines was common and use of herbal medicines was widely practiced. People commonly diagnosed their own illnesses, prepared and prescribed their own herbal medicine, or bought them from the local apothecaries. The decline of traditional herbal medicine knowledge and usage coincides with the development of the modern medical practice and the science of pharmacology. Consequently, the prevalence of modern medical drugs, refined or synthesized from raw materials became widespread and an accepted aspect of United States' modern civilization (Tyler, 2000).

However, over the last few decades, people have been turning in increasing numbers to the use of herbal medicine as both an alternative and adjunct to modern drugs. The growth of this segment of society has been greatly accelerated within the last ten years (Eisenberg et al., 1998). Herbal medicines are being used increasingly as dietary supplements to fight or prevent common maladies like cancer, heart disease and depression. The public and herbal medicine community are extolling the miraculous medical benefits of the ginkgo biloba, St. John's wort, saw palmetto, black cohosh and many other herbs. However, few of the

herbs available to the public have undergone testing for safety, efficacy, or potential drug interaction with other drugs taken for an ailment (Cohen, Rousseau & Robinson, 2000; O'Hara, Kiefer, Farrell & Kemper, 1998).

The value of these herbal products generally has been determined by anecdotal reports (Cohen et al., 2000). Since herbal products are not regulated by Food and Drug Administration (FDA), they cannot be labeled as effective for alleviating or treating diseases (Glisson, Crawford & Street, 1999). In the absence of mandatory standards, however, they are marketed as nutritional supplements under the Dietary Supplements and Health Education Act (DSHEA) in 1994 (U.S. Food and Drug Administration).

The purpose of this article is to discuss, in light of the claimed marvels of modern medicine, why is the public increasingly turning to herbal medicine for their health needs? Also, what are the implications for health education in such growing trends in self-diagnosis, and utilization of herbs for self-treatment or preventive health care?

Background

Throughout the first half of this century, many herbs were considered conventional medicine and as such were included in medical curricula and formularies (e.g. United States Pharmacopoeia and The National Formulary). Two important factors fostered a division between mainstream drugs and herbal medicine: the development of a pharmaceutical industry capable of

mass-producing purified chemicals, and regulatory changes by FDA (O'Hara et al., 1998).

In an historical perspective, O'Hara et al. indicate that in 1962 Congress passed an amendment to the Food and Drug Act to increase assurance of drug safety and efficacy after thalidomide was found to be teratogenic. Therefore, a manufacturer must gain approval of FDA to produce a substance as a drug. While successful in general, the amendment created a regulatory dilemma regarding herbal medicine, no longer herbs could be considered drugs based on traditional use alone. Traditional herbal medicine cannot be patented since they lack sponsors for the costly and lengthy approval process. Consequently, manufacturers of herbs began marketing herbs as "food" products sold in health food stores. The FDA made no move to regulate these so called "foods" as long as no claims of efficacy were made. The FDA suggests but cannot require that manufacturers of herbs provide consumers with scientific data in support of advertising claims. Additionally, it is the responsibility of FDA to prove that an herbal product is unsafe or ineffective before it can require the product to be removed from the market. Suspected adverse effects and drug interactions should be reported to FDA's MEDWATCH (1-800-FDA-1088). Such individual cases are important part of FDA's decision to remove a product from the market and to ensure public safety.

In 1992, the National Institutes of Health (NIH) was instructed by congress to establish the office of Alternative Medicine to support studies of alternatives therapies (Youngkin & Israel, 1996). The passage of the DSHEA in 1994 ruled that herbs could be labeled with information on their effects on the structure and function of the body. The label, however, must include a disclaimer stating that FDA has not reviewed the substance and the herb should not be used as a drug (Glisson et al., 1999). Originally initiated by congressional mandate in 1992 as the office of Alternative Medicine, the National Center for Complementary and Alternative Medicine was established by NIH in 1998. This office facilitates and conducts biomedical research on CAM (NCCAM, 2000).

Definition of Herbal Medicine

Herbal medicine is referred to the use of plant products to treat or prevent a disease. It is also known as botanical medicine, herbalism, herbology, phytomedicine or Phytotherapy (Glisson et al., 1999; Foster, 1995). An herb is a plant or plant part valued for medicinal, savory, or aromatic qualities. Others consider herbs to be botanicals and therefore define them as a substance derived from plants, a vegetable drug, especially in its crude state. When added to foods as supplements, herbs have been also termed as "nutraceuticals" (Blumenthal, 1997). Herbal medicine is also known as a subset of the larger term "complementary and alternative medicine" (CAM). The National Institutes of Health (NIH) Office of

Alternative Medicine's panel on Definition and Description states the CAM is a broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period (Burg & Hatch, 1998). However, CAM does not receive a significant attention in U.S. medical schools and Ness & Sherman (1999) refer to it as a spectrum of health care practices that do not conform to the standards of mainstream medical community and are not commonly reimbursed by health insurance plans.

Herbal medicine may be defined as using unpurified plants extracts, either alone or in combination with other herbs, as a drug treatment. The practice uses different diagnostic principles from practitioners, frequently manifested as a holistic approach. Another insight in defining herbal medicine as a practice may best be found in its comparison to conventional medicine. Public's use of the herbal medicine is mostly for treating chronic conditions and producing improvements in well-being where as reaching out for conventional medicine is generally for treatment of acute conditions (Eisenberg et al., 1998; Vickers & Zollman, 1999).

Current Trends

The market for herbal medicines in the United States is purported to be approaching \$4 billion (Brevoort, 1998). Within the past decade, use of herbal medicine has increased 380% . Over 22 million people saw a CAM practitioner in 1990 compared to 39 million in 1997. There was over 43% of increase in total visits to alternative medicine practitioner, from 427 million in 1990 to 629 million in 1997, thus exceeding total visits to all US primary care physicians. Users generally pay the fees themselves, and in 1997, out-of pocket expenditure was estimated at \$27 billion a figure comparable to projected amount of out-of-pocket expenditures for all US physician services (Eisenberg et al., 1998; Ness & Sherman, 1999). More than 40% of the public now uses at least one type of CAM, and herbal medicine tops the list among those with increasing trends (Blumenthal, 1999, Eisenberg et al., 1998). Patients are using herbal medicines alone or as an integral part of many CAM treatments. The growth is projected to continue in an accelerated rate in U.S. Populations (Marwick, 1995).

Increasingly people are choosing self-medication rather than making a visit to the physician's office. Patients are using herbal medicines for variety of purposes including treatment of arthritis, chronic pain, back problems, depression, anxiety and headaches (Geriatrics, 1999). Midwives commonly administer herbal remedies (Delaney, 1997). Many older Americans are using herbal medicines not only for prevention and management of chronic disease, but also to boost their overall well-being, improve cognitive function, and increase longevity (Ness & Sherman

1999). Among the most common preparations are St. John's wort, echinacea, ginkgo biloba, garlic, ginger, ginseng, saw palmetto, chamomile, and valerian (Blumenthal, 1999; Ness & Sherman, 1999).

Generally, people act upon a belief that CAM is good medicine. Those who seek conventional medical care commonly do not inform their physician of their CAM use. The majority of patients seeking CAM are white, college-educated women, age 25 and up, with an annual family income exceeding \$50,000 (Ziel, 1999). Within the last decade, the number of visits to CAM providers increased by 47% (Eisenberg et al., 1998). People who have a regular primary care physician are also likely to use CAM and home remedies for cold symptoms and general health care (Burg & Hatch, 1998). According to Knicheloe (1999), trends in purchasing indicate that most of the growth in herbal supplements is coming from first time users or light users of herbal supplements, and from purchases at supermarkets and drug stores vs. health food stores. Also, over 60% of physicians refer their patients to practitioners of non-traditional therapies, but they do not make the referral so often. According to Borken, Neher & Artson (1995), physicians indicated that they made the referral for the following reasons:

- The patient requested it
- The alternative therapy fit the patients cultural beliefs
- The patient failed to respond to conventional treatment
- The patient had a "non-organic" disease

Potential risks in utilization of herbal medicine are generally unrecognized. People do suffer complications due to the effects of herbs or the interaction of an herbal medicine and a prescribed drug. The extent of knowledge regarding the interactions, antagonistic or additive effects, within and between herbs and conventional drugs is largely unknown (Cupp, 1999). Purity and adulterations of commercially produced herbal products have raised major questions. Information on the benefits and effects of herbs are generally obtained through word of mouth, users testimonies, cultural knowledge, CAM practitioners and herbal company advertisements. The medical community is concerned about the lack of scientific tests but herbal medicine is not required the need for such testing (Blumenthal, 1999). Few medical doctors admit they have adequate knowledge of herbal medicine. There is a great debate among major factions of conventional medicine whether to even acknowledge and thereby possibly legitimize CAM. There is some growing interest by the medical professionals to educate themselves about herbal medicine, but the support is currently disjointed among the medical organizations. Some medical schools have recognized the need for educating physicians and currently have CAM as a curriculum element. However, seminars and workshops are becoming more prevalent. (Wetzel, Eisenberg & Kaptchuk, 1998; Whitehorse, 1999).

Why People Use Herbs

The reasons people use herbal medicine is diverse, however, there are a number of theories explaining the relatively recent upswing in the use of herbal medicine. The consumer's attitudes toward the relationship between health and diet have been improving. The avoidance behaviors have grown, discouraging foods that contain preservative and other carcinogenic materials. This concern quickly moved to ingredients such as salt, sugar, and cholesterol. During this time, the vitamins and mineral supplement industry experienced significant growth (Wood, 1997).

In recent years, the terms "natural" and "organic" have nearly gained unquestioned equal states with the term "health." Of major influence in the last few decades has been the impact of an influx of emigrants with Asian and Latin cultures and their deep-seated beliefs in and use of herbal medicines. Use of plant products as medicine is inherent in Ayurveda, the ancient Indian system of health care and longevity (Dev, 1999). In China, medicinal herbs are supported by the ancient practice and modern theories, and have a regulated status (Lee, 2000). Based on ancient and experiential evidence, these culturally accepted herbal practices and beliefs are becoming quite common. Approximately 60% of the world's population relies on herbal medicine (Lee, 2000; Tattam, 1999). Among these are countries with modern medicine, like Germany, where herbal medicine is openly endorsed, regulated and its utilization is well accepted (Glisson et al., 1999).

The increased longevity of Americans has resulted in an increased interest in the "quality of life." Herbs that promise a relief from arthritis and joint pain, improved cardiovascular health and maintenance of mental sharpness correspond to the needs of a large segment of the population. Albert Schweitzer stated about 70 years ago "the doctor of the future will be oneself" (Page, 1999). Many people are taking an active role in their own health and treatment. The aging baby boomers are also taking supplements as preventive measures for potential conditions of old age.

Marketing efforts by herbal companies has cast herbs into the limelight. Features in the mass media including television programs have increased consumer awareness and given the herbal products respectability and credibility. There has been an increase in the number of health care providers allowing for reimbursement for physician prescribed herbal medicine (Brevoort, 1998). The availability of herbal medicines and supplements is widespread, a large variety can be found in virtually every supermarket and drug store.

Public's utilization of herbs for self-medication has a number of other reasons. Many people are uncomfortable about discussing their medical problems and fear lack of confidentiality in handling their health information. Often, patients with non-specific symptoms or general malaise may fear possible

misdiagnosis and wrong treatment. The lack of time to see a physician is commonly indicated as a reason particularly where prior visit did not result in a positive experience. Others may be motivated by a lack of medical insurance. Patient satisfaction is reflected in claims of malpractice against CAM practitioners which are less frequent, and involve injuries less severe than claims against physicians (Studdert et al., 1998). One of the main reasons for the increasing use of herbal medicine is also high level of patient satisfaction in tactile interaction with CAM practitioners. The patient's ability to "choose" a practitioner, and having more involvement and choice encourage people to utilize alternative treatments and herbal medicine (Zollman & Vickers, 1999).

Many patients select herbal medicine because of a deductive approach based on anecdotal information, that is, "it worked for my friend or relative." Additionally, people are increasingly disposed to accepting therapeutic value of a treatment based on faith or intuition rather than scientific reasoning (Astin, 1998; Ziel, 1999). If an herbal remedy does not work, there are other options with little risk and potential for a cure. By contrast, conventional medicine offers fewer alternatives for a given ailment and free from potential risks. Herbal medicine approach is particularly alluring when it emphasizes the body's natural capacity for self repair, given appropriate conditions (Zollman & Vickers, 1999). While the conventional medical community considers CAM as "alternative" medicine, the patients are considering it not as an alternative but a viable and effective treatment (Kent, 1999). Research has found that users of the herbal medicine are frequently those who strive to keep control of their lives in their own hands and need to trust effectiveness of the treatment (Astin, 1998). Opponents claim that the herbal medicine user benefit from the placebo effect, thereby, attributing the healing effects to the psychological expectation of the herbs. However, Astin (1998) indicted that persons who use CAM (including herbal medicine) have been characterized as having:

- A history of anxiety, back problems, chronic pains, or urinary tract symptoms
- A holistic philosophy of health
- An interest in culturally creative approach to health
- A high level of education
- A transformational experience that change their outlook o life

Glisson research team (1998) explained various reasons why people use unconventional therapies including: dissatisfaction with conventional medicine, greater personal control, holistic approach to health and lower costs. Additionally, many people consider conventional medicine as aggressive and invasive, whereas alternative therapies like herbal medicine tend to take a gentler approach. From a pragmatic view, many people see conventional medicine as having limited success in public health education and

promotion, disease prevention and chronic disease management. Whereas, CAM has been making its greatest claims in these areas, thereby fitting the public's primary concerns. Additionally, many people view the conventional medical system not as healing, but as cutting and drugging for treatment of symptoms without addressing underlying causes. Contrary, herbal medications are generally viewed as having holistic and systematic benefits not only in treating the disease but also in maintaining or developing the overall health.

Scientific Evidence

Data about the safety and efficacy of medicinal herbs are limited (Arab, 2000). In some cases, the best data are years old, limited to in vitro animal studies, and in journals available outside of the United States. Clinically important information is particularly sparse in the literature, such as the results of scientific trails, drug interactions, allergic and toxic reactions, and effects in special populations such as children, pregnant and lactating women (Ernst, 1998). In some cases, good evidence about short-term side effects comes from well-controlled human trails. However, information about the effects of long-term use is usually based on case reports rather than prospective studies. Traditional use has revealed some toxic effects associated with some common medicinal herbs. On the other hand, FDA categorizes about 250 herbs as "generally recognized as safe" for consumption based on long-term and/or widespread traditional use and without significant side effects (O'Hara et al., 1998).

The potential for selecting a non-traditional solution increases when patient's belief involves distrust in the contemporary medical system. Wagner et al. (1999) studied users of Saint John's wort (SJW) and found that a pattern of beliefs and openness to alternative treatments set the stage for the self-treatment of depression. Perceptions about the remedy itself, its safety and lack of side effects, along with stigma of the prescription antidepressants, increase the likelihood of use of SJW. Also, effective presentation of SJW in the media increased awareness, its availability, and a lack of risk for self-disclosure all add to SJW utilization. The Health Belief Model was used as an explanatory paradigm in studying why patients choose SJW, the study found that perception of decreased seriousness of the disorder, increased perceived benefits, and reduced barrier to the use of SJW all work to gather to make it easy choice for patients. However, Astin (1998) found that a holistic health orientation, a transforming experience, anxiety, presence of chronic problems lead patients to seek alternative therapies.

Most research on medicinal herbs is conducted in areas of the world where the use of medicinal herbs is mainstream. In India, China, Japan, many other parts of Asia and in Europe, herbal medicines have a longer history of being accepted alongside the conventional drug therapy. In 1988, the German government established an expert panel, Commission E, to review the clinical literature on more than 1,400 herbal drugs,

including clinical trials and case reports. This effort has resulted in some 300 monographs on the most popular herbal remedies (Glisson, et al. 1999; Marwick, 1995; NCCAM, 2000). In Germany, herbal products are considered safe and a manufacturer is allowed to place medical claims on the label as long as the monograph guidelines for quality assurance are followed (Glisson, et al. 1999). The 1988 German Commission E Monographs has been revised and is the best available collection of clinical information in the world, however, it does not disclose the scientific basis for its conclusions (O'Hara et al., 1998).

Risks, and Benefits

People who use herbal medicine for self-diagnosed health concerns run potential health risks. These risks range from unknown effects of herbs, their interactions with prescriptions drug use, misdiagnosing of symptoms of diseases, thereby, losing the opportunity for early diagnosis and treatment (Cupp, 1999). The risks involve people of all ages. Young persons usage of herbs for its euphoric effects, has resulted in cardiac arrest and fatal consequence. Similarly, older persons have experienced serious medical complications when they were admitted to the hospital due to severe interactions of herbs and prescribed medications. Other implications include women who developed kidney disease after taking Chinese herbs prescribed by a slimming clinic (Cupp, 1999; Vickers & Zollman, 1999).

Greater risk is involved when physicians and their patients do not communicate effectively about the intake of herbal medicine, interaction and possible toxic effects of herbal medicines and conventional drugs. Due to lack of adequate information, the physician often does not address the potential risks of combining herbs and medications. Of those patients who do not mention their use of herbs to their physician, more than one-half said it was because their physician didn't ask (Cupp, 1999; Zollman & Vickers, 1999).

Of equal concern is the risk faced by children and pregnant women. There are a few studies on the possible developmental effects on children who were given herbal remedies. In addition to their direct pharmacological effects, herbal products may be contaminated, adulterated, or mislabeled. Many herbal medicines are known to contain toxic reactions, possible mutagenic effects or allergic reactions (Ernst, 1998; Senior, 1998). Constituents of identical herbal products can be highly variable with complex and confusing terminologies (Ernst, 1998; Ziel, 1999). Another subtle but real risk involves pregnant women who face many potential risk to the unborn child, and nursing mothers who take herbal medicine and pass it on to the child through breast milk. There is little knowledge of the effects of herbal medicines on the developing fetuses. However, midwives have used herbal remedies for easing pain during delivery, apparently, with no ill effects (Delaney, 1997).

Herbs are generally safe if used properly, but they can be harmful and even fatal if misused (Cupp, 1999; Ernst, 1998; Roan, 2000). The concern is that no safe use has been established, scientific data is scant, potency and packaging information is inconsistent. Additionally, there are many questions related to doses and prescription batteries. Analysis of some of the available herbs indicated that ingredients, active or other wise, may vary greatly from one preparation to another (Matthews, Lucier & Fisher, 1999). While there are many unknowns associated with the use of herbs, there appear to be a growing empirical knowledge in the United States about benefits of certain herbs. In the absence of standardization, however, a number of herbs have become popular. For examples, St. John's wort is used extensively for mild to moderate depression and some preliminary test have indicated no ill effects or interactions. Likewise, saw palmetto has shown promising, but limited results when used for prostate problems. Garlic has been shown to have some possible beneficial effects on cholesterol levels; echinacea for treatment and prevention of common cold; and valerian for its calming and sleep-inducing effects (O'Hara et al., 1998; Youngkin & Israel, 1996).

However, there are no qualifications required for those who prescribe herbs making adequacy of their knowledge level highly questionable. A major concern is how informed are the users of herbs. Wood (1997) describes three levels of knowledge. At the first level are those who obtain information from word of mouth, mass media, advertising sources, health food stores brochures, and the herb manufacturer's containers label. The second level knowledge involves those who read mainstream popular health literature. They have a general knowledge of the potential risks and possibly are more inclined to discuss them with their physician. This, however, may not preclude self-diagnosis and self-medication. This group is characterized as middle class and better educated. The third level of knowledge appears to be the well-read and knowledgeable herb users. Those in this level are most likely to be long-term users, cautious in their use and open in discussions with their physicians. This group is undoubtedly the smallest of the three groups mentioned.

Future Trends

Medicinal herbs are becoming increasingly popular and important in the public and scientific communities (Lee, 2000). As baby boomer society moves toward its golden years, there will continue to have interest and search for products that increase the quality of life and overall health. Herbs tantalizingly promise a panacea for the ravages of time on both body and mind. With the recently organized herbal medicine branch of NIH and the support of herbal companies, clinical trials will be funded for efficacy and safety of many herbal products. Announcements of RFPs can be found at <http://nccam.nih.gov>. Consequently, providing scientific information will give credence and encouragement for more use of herbs. The unwanted

outcome of this may be that more untested herbs with promising miracles become available to the public for self-medication. However, the positive aspect of the clinical trails can be the validation of safe and effective alternatives to conventional drugs and advent of treatments that have proven effective for overall public health.

The demand for alternative medicine practitioner is expected to dramatically increase (Riley, Reilly & Milton, 1997; Whitehorse, 1999). Practitioners of conventional medicine will need to become more knowledgeable about herbs, as their patients demand advice and are reluctant to give up their favorite herbs. This will result in medical schools to increase and expand incorporating herbal medicines training into their curricula. Continued interest by insurance companies and managed health care providers will help propel herbal use into mainstream medicine. Pharmacy schools are actively building herbal medicine into their curriculum (Rowell & Kroll, 1998). Universities are collaborating with scholars and practitioners of traditional herbal medicine from abroad to learn what they can offer to complement the health care in the United States.

Implications for Health Education

Herbal medicine use in the United States presents both promise and risks. The promise is of alternative and effective natural substances for improved health. The risk is borne out of the great-unknown effects of herbs on the human body. The medical community is at odds whether to embrace or denounce herb usage. This seems to lead to a huge hole for people to fall into. This hole is dug with both consumer and provider ignorance and maintained by the medical community's apathy. There is little evidence that the educational effort related to herbal medicine for consumer and physicians is beyond infancy. It is dismaying that our medical community is divided and takes postures in what many practitioners see as a turf war.

People will continue to seek ways of improving their physical and mental well being, especially when it is threatened or if conventional medical treatments fail to resolve their health concerns. The inevitable clinical trails on herbs will take time, possibly years. People, however, have little patience and trends indicate that there will be greater utilization of the herbal medicine in the future. The great challenge now is to respond appropriately to this burgeoning interest in herbs to eliminate the increasing potential high-risk behaviors among the users.

Providing accurate information and enabling consumers in making informed health decisions is one of the areas of responsibilities of health educators. In addition to this professional and ethical responsibility, there are potential legal and medical implications in addressing dietary supplements including herbal medicine (Perko & Dennison, 2000). When discussing herbal medicine, health educators must be cautious to avoid legal issues and dangers of practicing medicine

without a license. The situation, therefore, requires availability of scientifically sound information which can be disseminated within the field of health education.

In health education literature, however, information related to public utilization of herbal medicine is scant. The growing public interest in and use of herbal medicine have resulted not only in the need for the availability of reliable information for the public but also for health care providers to inform their patients. There is an urgent need for health educators to intervene and offer guidance concerning the quality, proper use, adverse side effects and precautions associated with herbal products. This is not only an immediate professional responsibility but also an opportunity to develop a unique role in public health education and health promotion.

The lay press, however, is replete with information about the herbal medicine many often-touted "miracle cures." In terms of books, for example, a search of Barnes and Noble website (www.bn.com) resulted in over six hundred books related to herbal medicine. Among the bestsellers are Balch & Balch (2000), Castleman (2001), Duke (1997), Duke and Castleman (2001), Page (1999), Simon (2000), and Weil (1998). Sale ranks are high, for instance, Duke & Castleman (2001)'s sales rank reached about 55,000 in about 3 months after its publication at Barnes and Nobles website. There is a need to evaluate resources available to the public and make appropriate recommendations regarding reliable sources of information. Health educators must take the lead in working with the public, conventional medicine community, pharmacists, medical insurance groups, and those who market herbal medicine to ensure informed health decisions.

Health education advocates must focus on integrating herbal medicine into the curriculum of special sphere of influence, whether it is in the schools, medical settings, the workplace, or the community at large. Suggestions have been made for a CAM course for health education preparation programs inclusive of herbalism (Patterson & Graf, 2000). Collaborations with others disciplines such as Nutritional Science and Nursing can enhance preparation of students both in content and in establishing professional network. Educational possibilities about the trends of utilization of herbal medicine or other popular alternative medicine practices need to be expanded through utilization of elective courses, courses that deal with special topics, current issues in public health, or included as apart of required courses. The course format must include lectures and participation by practitioners and where possible, patients or consumers. The challenge for health educators is to inform those currently using herbs as well as the prospective users.

Research and evaluation efforts are essential to identify the extent, scope and diversity of utilization of herbs, and support quality control (Arab, 2000; Matthews et al., 1999). Needs assessments are

necessary to identify and clearly define various populations' motives for the use of herbal medicine and degrees of their satisfaction. Research based health education programs must be planned to target the groups at greatest risk as well as those who may develop high-risk behaviors. While the current users are mostly middle class and senior citizens, other groups of socioeconomic status will become users as the herbal use becomes mainstream. People need to be informed of the benefits and risks, both short term and long term. Physician must be trained to ask about current and past use of herbs and understand why the patient chose herbs for self-medication. Advocacy for quality control is another area for potential contributions since unregulated sale and uninformed use pose potential adverse health effects for the consumer. Due to the lack of the standardization and quality control, the responsible producer is at risk as well. Most importantly, health educators must be informed about the issues of herbal medicine and, in a broader sense, complementary and alternative medicine to appropriately serve the public's health. To summarize, the health educators' sphere of influence include:

- Identifying extent and scope of the problems associated with the public's use of herbal medicine.
- Identifying risk and benefits involved in public's use of herbal medicine.
- Developing, testing and implementing interventions to assist the public in making informed health decisions.
- Conducting research and program evaluation, and publishing the results to provide necessary information.
- Promoting local, state and national dialogue to advocate a sensible regulatory environment for quality control to ensure safety and effectiveness of herbal medicine.

Conclusion

Use of herbal medicine is here to stay and appear to be growing quickly. Herbs have potential health risks and health benefits. Despite too much unknown information, public has developed a belief that herbal medicine is a good choice. The risks and rewards of herbal medicine must be understood, communicated and managed given the current situation. Trends indicate that public increasingly prefers to go to a store to purchase herbs rather than making a visit to their physician's office. It seems that providers of conventional medicine will eventually be forced by the economics of the marketplace to deal with the reality of the public interest in the use of herbs. In the interim, great harm can befall the uneducated users. Therefore, health educators must consider the challenge to insure that people are informed in making decisions about the herbal medicine to protect the public' health.

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