

Foundations of Botanical Medicine

Botanical Medicines, CAM, and Integrative Medicine: Definitions and Use Prevalence

Aviva Romm



CHAPTER

The U.S. medical care system is self-validating. Biomedicine is rarely viewed as a historical and cultural byproduct, but rather is considered to be entirely factual, scientific, and universal. Furthermore, many powerful groups have an interest in the maintenance of existing approaches. Nonetheless, several problems have been identified with this medical care delivery system, including issues of access, quality of care, quality of life, technology use, and costs. The conservative, self-validating nature of biomedicine places severe limits on our ability to rethink our approach to medicine and deepen innovative and viable solutions to these problems. Alternative health care systems exist as a rich readily accessible resource for testable ideas about the practice and organization of medical and health care. By virtue of their popular nature, they seem generally to be well-received, low technology, and low-cost approaches to health problems. The potential contribution of these systems to solutions for the medical care problems we face would seem to be great.

—Carol Sakala¹

WHAT IS COMPLEMENTARY AND ALTERNATIVE MEDICINE?

The National Institutes of Health (NIH) National Center for Complementary and Alternative Medicine (NCCAM) defines complementary and alternative medicine (CAM) as “a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.”² Complementary medicine is considered to be those therapies used in conjunction with conventional medicines, whereas alternative medicine is considered to be those therapies used in lieu of conventional medicine, for example, the use of a specific herb to reduce perimenopausal symptoms in lieu of hormone replacement therapy (HRT).²

CAM therapy includes traditional Chinese medicine (TCM), Ayurvedic medicine, botanical medicine, nutritional supplements, physical therapies (i.e., massage, acupuncture), homeopathy, and mind-body therapies. Spiritual practices, especially prayer, are also commonly listed among CAM therapies. “CAM therapies...share common principles. Unifying themes among CAM practices include individualized treatment plans; belief in the healing power of nature; union of mind, body, and spirit;

and often, more time spent with patients.”³ The term *alternative medicine* creates a sharp distinction between the worlds of nonconventional therapies and conventional medicine in an either/or dichotomy, whereas the term *complementary medicine* may be “closer to describing what many people in reality really do; they combine the two worlds...”³ Indeed, over 80% of the US public uses nonconventional practices and complementary medicines adjunctive to conventional medical care.⁴ As CAM therapies are proved safe, they may be integrated into conventional health care approaches, and thus the list of what is considered to be a CAM therapy changes constantly.

WHERE DO BOTANICAL MEDICINES FIT INTO CAM?

NCCAM divides CAM therapies into five distinct categories. Herbal remedies fall under the classification “biologically based therapies,” which refers to substances found in nature, including herbs, foods, and vitamins. These substances are broadly classified as dietary supplements. The term *dietary supplement* is specifically defined by the Dietary Supplement Health and Education Act

(DSHEA), enacted in 1994, as a product, other than tobacco, taken by mouth, and intended to supplement the diet, including vitamins, minerals, herbs, and a number of other nutritional supplement products. Forms in which dietary supplements may be sold include extracts and concentrates, tablets, capsules, gel caps, liquids, and powders. Herbal medicines are amongst the most frequently used CAM therapies.⁵⁻⁷

HOW WIDESPREAD IS CAM USE?

Globally, it is estimated that 70% of all health care is provided by traditional, nonconventional medicine.⁸ The World Health Organization (WHO) Traditional Medicine Fact Sheet states “countries in Africa, Asia and Latin America use traditional medicine to help meet some of their primary health care needs. In Africa, up to 80% of the population still relies on traditional medicine for primary health care.”⁹ One of the most commonly used forms of traditional medicine worldwide is botanical medicine.

Surveys indicate that as many as 50% (or more) of all Americans acknowledge using CAM therapies.¹⁰⁻¹³ The actual rate of use is likely higher than reported in the United States, suggested by the fact that as many as 50% of patients do not report CAM use to their conventional doctors.^{8,14} Surveys typically exclude non-English-speaking respondents, thereby eliminating from the statistical pool those demographic pockets of Americans whose use may be even higher than in the average population; for example, large numbers of Hispanic Americans in certain locales regularly use herbs and spiritual healing practices.⁷

David Eisenberg’s seminal surveys on CAM use by Americans, conducted between 1990 and 1997, revealed a 45% increase in the use of CAM therapies during that period with estimated out-of-pocket expenses of up to \$27 billion in 1997—up from \$14 billion in 1990.⁷ American patients’ visits to CAM practitioners have been estimated at \$600 million per year, exceeding the sum of all visits to primary care physicians.^{3,5-8,14,15} Because these visits are mostly out of pocket, fewer individuals might currently use CAM therapies than if they were fully reimbursed by insurance or deductibles were lower. It is likely that there will be a significant increase in CAM use as more coverage is available from insurance companies, and as greater numbers of conventional practitioners integrate their practices to include a broader range of therapies or increase their number of referrals to a wider range of complementary therapists, such as acupuncturists, naturopathic physicians, and herbalists.

WHO USES COMPLEMENTARY AND ALTERNATIVE MEDICINE?

The average US CAM user is a well-educated health consumer, generally with at least a college education and an annual income of \$50,000 or greater. Most are women between 30 and 59 years of age.^{6,8,14} Individuals whose personal values include a holistic approach to health, environmentalism, feminism, or a desire for personal spiritual growth are more than twice as likely to use

CAM therapies.^{6,7,14} Additionally, members of numerous ethnic communities, such as Hispanics, African Americans, Asian Americans, and Native Americans, incorporate traditional cultural practices, including the use of herbal medicines, into their healing practices. Having a chronic disease is also an independent predictor of CAM use.¹⁴⁻¹⁶

WHY ARE PATIENTS TURNING TO CAM?

According to Wayne Jonas, MD, former director of NCCAM, “Complementary and alternative medicine (CAM) is a health phenomenon that is largely driven by the public, and this is rather unique in medicine.”¹⁵ What is it, in this age of life-saving antibiotics, surgeries, and other seemingly miraculous medical therapies that causes so many individuals to seek therapies outside of conventional medicine? Ostensibly, there are many answers to this question.

CAM therapies are generally seen by Americans as desirable for the prevention of common chronic illnesses, including heart disease, obesity, cancer, and numerous other widespread conditions. In the past 10 years, there has been a dramatic rise in awareness of the benefits of preventative health measures, both by health practitioners and the general public. This awareness is summarized in the following statement: “Preventive health measures, including education, good nutrition, and appropriate use of safe nutritional supplements will limit the incidence of chronic diseases, and reduce long-term health care expenditures...healthful diets may even mitigate the need for expensive medical procedures.”¹⁷ This message has been reinforced by cancer and heart disease prevention societies, and the multibillion-dollar-a-year nutritional supplements industry. In response, Americans have turned to the health food store as their pharmacy, self-medicating with dietary supplements—which categorically include herbal products. Too often, individuals are getting health information from the Internet, friends and family, magazines and other popular media, and product manufacturers, rather than from well-trained CAM professionals.

A desire for safer products also leads patients to turn to CAM. Consumers place a strong belief in the high margin of safety of dietary supplements, with 53% of 1027 US adults in a survey commissioned by the Dietary Supplement Education Alliance (DSEA) stating they feel that some dietary supplements offer benefits that are not matched by conventional drugs. Fifty-six percent of respondents stated that some dietary supplements offered benefits comparable with those of drugs but with fewer side effects.¹³ According to Jonas, concern about the adverse effects of conventional medicines is the third most commonly stated reason for turning to CAM.⁵ Many individuals maintain the sometimes erroneous belief that “natural” means safer and gentler.

Numerous patients hold a simple pragmatic reason for using CAM therapies—they’ve seen many doctors and tried many medications, and they are still sick. Jonas states, “In such circumstances, it is logical that patients search for something else that works. So they seek out other alternatives without necessarily abandoning

conventional care.”⁵ Conventional medicine may be at its best when treating acute crises, but for the treatment of chronic problems it may fall short of offering either cure or healing, leading patients to seek out systems of treatment that they perceive as addressing the causes of their problem, not just the symptoms. Many prefer palliative solutions that seem safer and less invasive than the medical options with which they may be presented.

High costs of conventional medical care are also a factor. “Studies indicate that consumers are placing increased reliance on the use of non-traditional health care providers to avoid excessive costs of traditional medical services and to obtain more holistic consideration of their needs.”¹⁷ Although high-quality professional herbal products are not inexpensive, there may be hidden costs to conventional therapies, including more side effects than many herbal medicines. In one study comparing St. John’s wort with a typical tricyclic antidepressant drug, both proved close to equally effective in treating depression, although the St. John’s wort cost one-fourth the price of the drug and caused one-tenth the side effects of the conventional medication.⁵ Cost-effectiveness studies comparing medical interventions with CAM interventions are scarce, and should be conducted more widely.

The desire for a holistic approach, as well as for increased participation in their care may be one of the most significant forces driving the desire for complementary medicine. “Patients increasingly do not want to be treated simply as a body with a kidney, blood pressure, or blood sugar problem. Rather they want the accompanying social and psychological aspects of their ailments addressed as well.”⁵ Many patients simply feel that using alternative and complementary therapies more accurately reflects their personal belief systems.^{8,18,19}

Interestingly, dissatisfaction with conventional medicine is not an independent predictor of CAM use, with greater than 95% of Americans still regularly relying on conventional medical doctors.^{14,20} It appears that most Americans seek to supplement rather than supplant traditional medical care.⁸ According to Brokaw et al., “Clearly, CAM is offering something that many patients want but are not getting from conventional medical services.”¹⁹

Some see the use of CAM therapies as an act of self-empowerment and an opportunity to take their health more into their own hands, perhaps a response to the days when “doctors made the decisions; patients did what they were told.”^{6,21} Dr. Atul Gawande, in his compelling and best-selling book, *Complications: A Surgeon’s Notes on an Imperfect Science*, states that “little more than a decade ago...doctors did not consult their patients about their desires and priorities, and routinely withheld information—sometimes crucial information, such as what drugs they were on, treatments they were being given, and what their diagnosis was. Patients were even forbidden to look at their own medical records: it wasn’t their property. They were regarded as children, too fragile and simpleminded to handle the truth, let alone make

decisions...and they suffered for it. And they missed out on treatments they might have preferred.”²²

Chambliss observes, “Poor physician–patient communication may increase the chance that a patient will turn to alternative medicine. Conventional physicians sometimes alienate patients by minimizing the connection between the mind and the body.”⁸ Snyderman and Weil, in *Integrative Medicine: Bringing Medicine Back to Its Roots*, observe that the marked improvements in medical understanding that have been the hallmark of the scientific model have been accompanied by “an unexpected and unintended erosion of the patient–physician relationship... Burgeoning medical knowledge has created specialties and subspecialties, all of which are necessary; however it has created a dizzying array of practitioners, who generally focus their attention on small pieces of the patient’s problem... Managed care, capitation, increased need for documentation and productivity, and major constraints in health care funding have further eroded the patient–physician relationship and, at times, have forces physicians into positions of conflict with patients’ needs... Physicians simply do not have the time to be what patients want them to be: open-minded, knowledgeable teachers and caregivers who can hear and understand their needs.”¹⁰ Table 1-1 compares a conventional medical consultation and a CAM consultation.

Linda Hughes, MD, of the University of California, San Francisco, suggests that “Complementary and alternative medicine is attractive to many people because of its emphasis on treating the whole person, its promotion of good health and well-being, the value it places on

TABLE 1-1

CAM Consultations vs. Conventional Medicine Consultations

	CAM	CONVENTIONAL MEDICINE
Time	More	Less
Touch	More	Less
History taking	Holistic	Specific
Language used	Healing	Cure
	Holistic	Dualistic
	Subjective	Objective
	Wellness	Illness
Patient’s role	Consumer	Sick role
Decision making	Shared	Doctor in paternalistic role
Bedside manner	Empathetic	Professional
Consulting room	Counseling	Clinical

Adrian Furnham, PhD, of the Department of Psychology at University College, London, researches the difference between CAM consultations and conventional consultations. His observations suggested these differences.

Presented in the report, *Can Alternative Medicine Be Integrated into Mainstream Care?* From the NCCAM-Royal College of Physicians Symposium, January 23–24, 2001, London.

prevention, and its often more personalized approach to patient concerns."¹⁴ Many CAM practitioners and researchers corroborate this view.* David Spiegel, MD, professor of medicine and biochemistry at Stanford University School of Medicine, described the current state of health care delivery in the United States as having turned doctors into "biomechanics" and "providers." "They are drowning in paperwork," he said, "especially when it comes to reimbursement for CAM modalities... They haven't been good in helping people reconstitute a relationship with their body and deal with the emotional effects of their disease."²⁴

In summary, complementary and alternative medicine use is increasing because in many aspects, it "fills patients' needs."²³

HOW OFTEN DO WOMEN SEEK CAM THERAPIES AND WHY?

Women seek medical care overall more frequently than men, and also follow more preventative health measures.²⁵ Therefore, it is no surprise that one of the largest subgroups of CAM users is women. Specifically, they are college-educated, employed women of reproductive age, between 30 and 59 years old.^{6,8,11} Women are up to 40% more likely to use CAM therapies than are others.⁶

Although not all women who use CAM define themselves as feminist, in a study by Astin, feminism was cited as one of the three most common personal values contributing to CAM use, with twice as much CAM use likely by women who identified themselves as feminist.⁶ This may be a reflection of CAM use as a tool of self-empowerment. The Consumer Healthcare Products/Roper 2001 survey reported that 60% of women, versus 46% of men, were regular dietary supplement users.²⁵ This pattern of increased use by women is likely to continue. In 1998, the US Surgeon General predicted that gender would be the greatest contributing factor to people's health over the next century, with women predicted to experience significant increases in health-related problems, particularly as baby boomers move into their menopausal years.²⁵

The need for personal connection and relationship with health care providers may be a motivating factor for women seeking care from integrative or alternative practitioners. According to feminist theory on gender, communication, and models of learning, women thrive better in environments emphasizing connection.²⁶ The rampant perception of the depersonalization of medicine and disregard for subjective experience leaves many women feeling alienated. Noted childbirth educator and author, Sheila Kitzinger states: "There remains a deep-seated suspicion of women's own accounts, which are often dismissed as mere anecdote... female experience, [particularly in relation to childbearing] is often ignored or trivialized because it does not match with 'observable facts' or because it does not match with ['expert'] perceptions of the same event or process."²⁷ This phenomenon is recognizable in the cases of PMS and postnatal

depression, now acknowledged medical syndromes, but for which women were historically dismissed or pathologized. Models of objectivity and distrust of the experiential in favor of evidence-based may be contrary and counterintuitive to women, who may place more value on intuition and personal experience as valid means of "knowing."²⁶ CAM therapies, typically patient-centered in their philosophies, are inherently more inclusive of the subjective voice—of the "intuitive and personalized."²⁶

Doctor-patient interactions are frequently hurried, with little time for the patient to ask questions and have concerns addressed. Women often feel uncomfortable questioning or disagreeing with their physician, particularly if the physician is male, and especially if they already feel vulnerable as a result of a challenging health condition. Many women, by social convention, do not exercise their assertive voice ("speak up"), and thus do not experience satisfaction at their medical appointments. Seeing themselves as the passive recipients of health care services rather than consumers with the right to expect certain services for the fees they've paid, women often leave medical appointments feeling vaguely dissatisfied and marginalized.

Because personal interaction with the patient is typically lengthier, and establishment of a partnership rather than hierarchical relationship between client and provider an important aspect of most CAM therapies, women are more likely to feel that their questions and concerns have been acknowledged and addressed in the course of a CAM appointment, and are less likely to feel marginalized by their health care experience. CAM therapies, inherently personalized and individualized, incorporate the client's subjective experience into the development of the protocol. Thus, CAM therapies may be more compatible with women's emotional and psychological needs in the health care relationship.

The absence of the feminine voice in our health institutions may also be a primary contributing factor to women seeking health care outside of these institutions and returning to traditional healing methods, such as the use of herbal therapies. There is a need for inclusion of the emerging feminist perspective, known in academic circles as 'women's ways of knowing,' into the discussion of potential new paradigms for women's medicine. Jeanne Achterberg, in *Woman as Healer: A Panoramic Survey of the Healing Activities of Women from Prehistoric Times to the Present*, states insightfully that

*The dissonance between women's talents and women's fate bears close attention as it reflects the evolution of institutions that lack the feminine voice. The absence of balance in these institutions has perpetuated a crisis that now extends alarmingly through all levels of health—from the health of tissues, mind, and relationships, to the health of the environment upon which life itself is dependent.*²⁸

Women also have significant concerns over the safety of some of the therapies specifically prescribed for women's health. For example, recent back-pedaling by the medical and pharmaceutical establishments on the actual safety and efficacy of HRT has led many women to lose

*References 3, 6, 8, 10, 19, 23.

confidence in a range of pharmaceutical interventions. Turning to herbs and nutritional supplements for the symptomatic relief of menopausal complaints, and even the prevention of cardiovascular disease, seems to many a practical and relatively safe response to the HRT confusion. Erosion of confidence in conventional care makes women increasingly vulnerable to “natural product” marketing schemes by pharmaceutical and nutraceutical companies.

With the number of women in the 40 and above age range increasing by 10 million women in the next decade, it is expected that women are likely to be targets for massive dietary supplement, functional food, and OTC (over-the-counter) product advertising campaigns, as this represents multimillions of dollars of profit to the dietary supplements industry. It is essential that health professionals give direct attention to the safety and efficacy of dietary supplements and CAM therapies aimed toward women, sorting the reality from the hype, lest marketing at the expense of their health and pocket-books victimize women.

WHAT PATIENTS DON'T TELL THEIR DOCTORS

“Most patients who are using CAM are, unfortunately, not talking with their practitioners about it,” states Ellen Hughes, MD, in *Integrating Complementary and Alternative Medicine into Clinical Practice*.²⁰ Statistics vary, but research indicates that 20% to 72% of all patients do not inform their physicians of their use of herbs, nutritional supplements, and other CAM therapies.^{6–8,20,23,29} In one significant example, almost 50% of patients undergoing surgery at a University of Colorado hospital never informed their doctors about using an alternative therapy within the 2 weeks prior to the surgery.⁸

Wendy Kohatsu, MD, in *Complementary and Alternative Medicine Secrets*, emphasized that it is “of great concern that two-thirds of patients do not tell their doctors about the use of CAM. Because of growing data about interactions between conventional and CAM therapies, open communication is imperative for all concerned.”³

There are several probable reasons for such nondisclosure. Two commonly cited reasons are “Doctors don’t ask because they don’t want to know and/or don’t feel they have the time; and patients feel reluctant to volunteer such information because they are afraid doctors will think less of them and/or don’t feel it’s relevant.”⁶ According to Hughes, among others, 61% of patients in one survey simply felt it wasn’t important to reveal to their doctors, 60% stated that their practitioner “didn’t ask,” and 31% asserted that it was none of their care provider’s business! Twenty percent felt their provider was not knowledgeable enough about CAM to make it worth mentioning, and 13% felt their physician would disapprove and discourage their use of CAM.¹⁴ In an article in *U.S. Pharmacist*, Michael Montagne, PhD, a professor at Massachusetts College of Pharmacy, confirms the possibility that care providers might make derogatory remarks: “words used by conventional health professionals to describe...why people choose alternative

therapies tend to be pejorative, paternalistic, sarcastic, ethnocentric, or negatively biased in some way.”³⁰ The perception that derogatory attitudes toward CAM users exist, or that physicians are just not interested in taking time to serve as advocates and educators for patients may play a dramatic role in keeping patients from talking to their doctors about CAM use.

Patients may pay the price. Recent surveys indicate that 18% (15 million) of US adults take prescription drugs concurrently with herbs or vitamins, and most are unaware of the potential risks and contraindications of the herbal remedies they use.^{30,31} Nondisclosure of CAM use to physicians could result in unfavorable consequences for the patient.⁸ For example:

- A patient might be using a less effective CAM treatment in place of a more effective standard therapy.
- A patient might be using an ineffective CAM therapy, wasting the patient’s time and money.
- Combining dietary supplements (herbs, vitamins, minerals) with pharmaceutical drugs can lead to unknown or known adverse reactions.
- A patient could be using a potentially dangerous CAM therapy.

Fortunately, and as a general testament to the overall safety of botanical medicines, “despite this widespread concurrent use of conventional and alternative medicines, documented drug–herb interactions are sparse.”³⁰

Approximately 25% of Americans end up substituting herbs for prescription drugs.¹⁴ Lack of knowledge of the use of a complementary therapy may lead the practitioner to misinterpret the effects, including the benefits, of a conventional therapy.^{4,29} If health care providers are going to provide safe and effective therapies to their patients, they must be open-minded and knowledgeable enough about CAM therapies to have honest, meaningful, and respectful discussions with their patients, and be able to at least advise their patients about the safety and efficacy of the most common therapies, or be able to provide appropriate resources for information and referrals for competent care.

CAM EDUCATION FOR HEALTH PROFESSIONALS

Health professionals are aware of the growing need for a minimum understanding of CAM, and many physicians and medical students express a direct interest in learning to incorporate CAM practices. As many as 60% of doctors have recommended an alternative therapy to their patients at least once, and half have used them themselves.³ Yet presently, few medical professionals are fully comfortable with or knowledgeable enough about CAM therapies to actually integrate them as a part of the clinical repertoire, or to be able to thoroughly or accurately educate their patients about the benefits and risks of CAM therapies.^{11,14} This lack of comfort with and knowledge about CAM therapies extends to pharmacists and dietitians.³² They may be particularly concerned about the safety of herbs because they contain pharmacologically active constituents, as opposed to other therapies that may not contain measurable active constituents (i.e., homeopathy) or that are not ingested (i.e., massage

therapy, aromatherapy, Reiki).¹¹ Then again, the known potential for pharmacologic activity is exactly what makes botanical medicines of special interest.

Many medical students, aware of the growing trend for patients to use nonconventional therapies, admit that they would like to receive training in CAM therapies—particularly botanical medicine.^{10,11} Currently, most receive little training, if any, in the use of phytotherapy during the course of their medical education.¹⁰ There is little consensus in the conventional medical world as to what extent, or how to integrate such therapies into medical training and practice. An increasing number of conferences on CAM are a regular feature of the continuing education options available for physicians, pharmacists, nurses, and other health professionals.

As of a 1997–1998 survey of 125 medical schools in the United States, 64% of the 117 schools that responded were offering courses in CAM either as required courses or electives, with only one-third of schools requiring CAM study as part of the formal curriculum.^{14,19} This number doubled from 34% in 1995. Botanical medicine is a dominant topic in such courses. However, most of the courses are brief, with fewer than 20 contact hours, and in a lecture series on multiple modalities, students typically receive no more than 2 hours of lecture on any single modality; thus, they are more likely to be introductory survey courses than in depth presentations of clinically applicable information and techniques.^{19,29} Additionally the majority of physicians currently practicing received no training in CAM modalities.²⁰ David Eisenberg states, “Unless medical students or physicians in practice or in training are exposed to these therapies...unless they actually see a demonstration on a patient, a volunteer, a medical colleague, or themselves, they are simply unable to prescribe it. And they are unable to appreciate the conversation that they may need to have with a patient who wants a referral.”³³ Presently only one-fourth of CAM courses surveyed by Wetzel and Kaptchuk use a case-based teaching approach. Further, it is not realistic to expect physicians to be fully fluent in a wide range of alternative medicines and treatments, while under pressure to remain current on all the developments in their own fields.²³ Although Hughes suggests that the number of physicians who become bilingual will be in great demand, he points to the need for a cooperative environment between physicians and alternative practitioners—in this case, skilled herbalists and naturopathic doctors—for the purpose of referrals and mutual support of the patient.^{20,23}

There is an unmistakable demand for increasing the number of CAM courses in medical schools, botanical medicine conferences for health professionals, and even postgraduate courses in botanical medicine for doctors and pharmacists. However, if these courses provide only superficial information, most of which is based on the limited number of herbs for which there is comprehensive scientific evidence, and taught in a way that merely presents herbs as substitutes for pharmaceutical drugs, then patients are not necessarily going to get what they are asking for—an increased sense of individuality, personal care, and attention to their holistic needs in

the course of seeking to improve or restore health. Although such care is the cornerstone of traditionally practiced botanical medicine and naturopathic care, herbalists and naturopathic doctors are only rarely featured teachers in such venues. In the integration of medicine, there needs to be increased cooperation between various types of qualified professionals, so that herbs are not treated as softer pharmaceuticals or as discrete entities from herbal medicine. For this to happen, modern, professional herbal practitioners must be consulted for direction in shaping educational programs for health professionals.

TOWARD AN INTEGRATED FUTURE OF HEALTH CARE

There is a crisis in our current health care system. As health professionals, we have the opportunity to remake the health care system into a model that includes compassion, mutual patient and practitioner satisfaction, intelligent scientific rationale, the best technology, and the best natural therapies. In fact, these qualities together may be considered characteristic of what is being referred to as *integrative medicine*. Integrative medicine embodies characteristics that are inherent in the foundational principles of botanical medicine and naturopathic medical care, and is emerging as a discrete model and speciality training in the halls of conventional medicine.

Ben Kligler, MD, and Roberta Lee, MD, leaders in this field, define integrative medicine as

a practice that is oriented toward prevention of illness and toward the active pursuit of an optimum state of health. It is the marriage of conventional biomedicine, other healing modalities, and traditional medical systems (Chinese medicine, Ayurveda, homeopathy, and Western herbalism, among others).³⁴ This involves an understanding of the influences of mind, spirit, and community, as well as the body. It entails developing insight into the patient's culture, beliefs, and lifestyle that will help the provider understand how best to trigger the necessary changes in behavior that will result in improved health. This cannot be done without a sound commitment to the doctor-patient relationship.³⁵

Medical residencies and post-doctoral fellowships in integrative medicine have arisen to meet the educational needs of physicians interested in such training, and a national organization, the Consortium of Academic Health Centers for Integrative Medicine has evolved to support the development of undergraduate integrative medical education for emerging physicians. Harvard Medical School, Yale School of Medicine, Stanford University and Johns Hopkins University are among the many schools now a part of this group. The Consortium defines integrative medicine as follows:

Integrative Medicine is the practice of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines to achieve optimal health and healing.

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Integrative practitioners embrace both conventional and alternative practices critically, prioritizing therapeutic options according to the level of benefit, risk, potential toxicity, and cost to the patient. Although integrative practitioners have a wide range of modalities at their disposal, they often are not specialists in any specific modality, having gained only brief exposure to a variety of modalities in their medical training. Some integrative physicians have specialized in a specific modality outside of medical school, for example, obtaining a license in acupuncture or specific training in botanical medicine. Many work in integrative clinics that employ a variety of types of practitioners, or work in conjunction with CAM practitioners in their communities. Integrative medicine practitioners can serve as a bridge for patients seeking both

conventional and alternative modalities, with the integrative physician serving as a central figure assisting the patient in orchestrating her health care options.

Natural therapies incorporating herbs tend to acknowledge the multifaceted nature of a client. Finally, there is a growing trust in herbal medicine and a belief in its ability to heal. These factors combine to form a foundation for transforming illness into wellness. How this renewal is achieved by herbal medicine is not through mimicking a medical model of pathology or substituting "natural" drugs. One alternative objective in herbal medicine is to assess and address functional disturbances rather than pathology. We look for simple causes that affect our normal function rather than suspecting disease first.

—Amanda McQuade Crawford, MNIMH, RH (AHG)

History of Herbal Medicines for Women

Aviva Romm and David Winston



WOMEN, HERBS, AND HEALTH REFORM: A HISTORICAL SUMMARY

Aviva Romm

Such “fathers of herbal medicine” as Dioscorides did not simply pull their therapeutic theories out of the air. His herbal was the human, largely female heritage finally recorded by a man interested enough in the subject and literate enough to be able to write it down. Ironically, the early records of women’s knowledge could be read by very few women.²

—Jennifer Bennett, *Lilies of the Hearth: The Historical Relationship between Women and Plants*

Women’s history has always been woven with plants and the healing arts, particularly botanical medicine and midwifery.^{1–4} In virtually every culture, without exception, women maintained knowledge of herbal healing for the prevention and treatment of common maladies that afflicted their communities, including herbal treatments for women’s complaints. A textbook on botanical medicine for women would not be complete without recognition of the historical role of women healers.

Few records exist to tell us the stories of ancient women healers: their training, their successes, the clinical challenges they faced, or their experiences as women with medical careers.¹ The limited historical records that do exist, however, give us a glimpse of some of the remarkable women healers in ancient times. Given the pharmacy of their day, it is clear that many of these women were highly skilled herbalists.^{3,5} Modern history leaves no doubt as to the important role women have played in the resurgence of herbal medicine and traditional healing practices in present-day medicine.

WOMEN HEALERS THROUGHOUT HISTORY

There is a remarkable absence of women healers in the archives of medicine. Information on the practices of women healers must be “carefully teased out of a few

surviving works written by women healers, from relics and artifacts, from myth and song, and from what was written about women.”¹ Although women have long handed herbal knowledge down to their daughters, both orally and in the form of “stillroom” books—the herbal equivalent of family recipe books—only a minority of women from the most privileged, educated backgrounds managed to keep comprehensive records or documentation of herbal “recipes.” Negligibly few women published serious medical works. On the rare occasion one did, it was frequently under a male pseudonym. Jeanne Achterberg states:

The experience of women healers, like the experience of women in general, is a shadow throughout the record of the world that must be sought at the interface of many disciplines: history, anthropology, botany, archaeology, and the behavioral sciences. . . . The available information on woman as healer in the western tradition spans several thousand years, stretching far back into prehistory when conditions were likely to support women as independent and honored healers. During and following those very early years, the role of women healers has been inexorably married to shifts in the ecology, the economy, and the politics in the area in which they lived.¹

Women Healers of Ancient Egypt and Ancient Greece

The oldest report of a woman physician dates to circa 3000 BCE. Records from this time indicate that a well-known practicing female physician lived in the city of Sais, where later there was a medical school. One of the earliest known medical documents, the Kahun papyrus (circa 1900 BCE) from Egypt, addresses the diseases of women and children. It has been suggested that this papyrus was written for women practitioners, as in ancient Egypt only women treated women’s diseases.³ Egyptian queens, including Queen Hatshepsut (who reigned from 1503–1482 BCE), encouraged women to become physicians. Hatshepsut herself set up three medical schools as well as botanical gardens. Women healers

were responsible for planting medicinal herb gardens and maintaining pharmacies.

Egyptian belief in the afterlife led to the practice of burying with the dead those things that were important to them in life and that would be needed in their next existence. At least one Egyptian Queen, Mentuhotep, is purported to have been found buried with alabaster ointment jars, vessels for tinctured herbs, dried herbs, and spoons for measurement. Polydamna, also a queen and physician of Egypt, was reputed to have given knowledge of the healing properties of the opium poppy, one of the possible ingredients in the famous sedative nepenthe. She was also alleged to have trained Helen of Troy (circa 2000 BCE), who is thought to have brought herbal knowledge from ancient Egypt to ancient Greece.³

The role of women healers was well established in ancient Greece, whereas in Egypt priestesses were often physicians and keepers of healing traditions. Their practices represented a synthesis of the physical and spiritual aspects of healing. One of the most revered deities of healing in ancient Egypt was the goddess Isis, to whom supplicants directed their prayers for healing. The medical practices of ancient Greece led to the development of later Western medical healing practices, including surgery. It has been suggested by scholars that women may have been largely responsible for the initial development of surgical techniques and therapeutics. Leto was the goddess of surgery.

Hygiea, an important goddess in the Greek pantheon and daughter of Asclepias, the legendary father of medicine (circa 900 BCE), is still a part of medicine today. Her statue is found on the fronts of hospitals and her name is invoked daily in our word hygiene, as is her sister's—Panacea—often mentioned in medicine. Both sisters were invoked for the restoration of good health—the practice of hygiene now considered central to preventive medicine. Hundreds of shrines dedicated to this family were erected in ancient Greece. Each woman in the family of Asclepias had her own staff, much like Asclepias', with a snake winding around it—a symbol that has persisted for thousands of years as emblematic of healers—and that is still used today as the symbol of Western medicine.

By the time of Hippocrates (400 BCE), women's role in society had been minimized to that of servants; their role in the healing arts was likewise marginalized. Nonetheless, the contributions of several women healers were recorded. Aristotle's wife Pythias was known to "assist" Aristotle in his work; together they wrote a text of their observations of the flora and fauna of one of the Greek islands. She was also involved in the study of anatomy and left detailed illustrations of chick and human embryologic studies. Queen Artemisia of Caria (350 BCE) has been praised by Pliny the Elder and Theophrastus for her healing abilities, and is credited by them for introducing wormwood (*Artemisia* spp.) as a cure for numerous ailments, although there is some debate over the attribution of the botanical name for the *Artemisia* species to Queen Artemisia as opposed to the goddess Artemis. Pliny (c. 50 CE) wrote of several women who authored medical books, including Elephantis and Lais.³

A famed ancient Athenian woman healer, Agnodice, left an extraordinary legacy. At the time of her birth in Greece, women were forbidden to study medicine; the penalty for doing so was death. Women throughout the entire Greek empire recognized her as having started a female medical revolution in Athens, which eventually influenced the practice of medicine. It is said that Agnodice felt so called to practice medicine as a response to the number of women dying as a result of refusal by medical doctors to treat them that she dressed as a man and enrolled at the medical school in Alexandria. Upon graduating, she established her practice, still disguised as a man, but upon being discovered to be a woman, local women flooded to her practice. When authorities discovered her proper identity, she was arrested and put on trial. It is purported that when her patients discovered her plight they threatened to rebuke their husbands by withholding "marital favors" if they did not support Agnodice's liberation. Congregating at the courthouse, they threatened to commit suicide en masse if she was not released. Successful in their efforts, Agnodice was freed and permitted to practice—in any manner of clothing she pleased. More significantly, women, with the exception of slaves, were permitted to openly study and practice medicine, treating only the diseases of women and children. This led to a new avenue of social and economic freedom for women in Greece. Numerous famed female physicians followed in Agnodice's footsteps: Theano, Aspsasia, Antiochis, and Cleopatra, a physician practicing at the time of Galen (second century CE). These women specialized in gynecologic and obstetric complaints, wrote extensively, and were renowned for their work.

At the University of Athens there is a fresco of the famed woman physician Aspsasia in the company of such leaders as Socrates, Plato, and Sophocles. Her writings remained the standard textbook of gynecology until the time of Trotula. Aspsasia employed treatments for problems as diverse as difficult labor, retained placenta, uterine tumors, and peritonitis, for which she performed successful surgeries. Cleopatra also wrote an extensive gynecology text that was distributed throughout Greece and Rome, and used as a standard treatise by doctors and midwives well into the sixteenth century. However, her work had been falsely attributed to a male writer of the sixth century CE. Soranus is later thought to have plagiarized her work extensively in his famed text, *Gynaecology*. This was not uncommon: What is believed to be the oldest medical treatise, written by a woman named Metrodora, was attributed to a man named Metrodorus. The original manuscript written by Metrodora still survives in Italy.

Women Healers in Ancient Rome

Prior to Greek influence in Rome, physicians were disparaged. Families were expected to tend to their own health needs. The spiritual attributions of health and disease received more recognition than the physical, with goddesses such as Diana, Minerva, and Mater Matuta presiding over women's reproductive concerns. Women had better social status in ancient Rome than in ancient

Greece, and Roman women met the arrival of female physicians from Greece with great receptivity. It may be that Roman male rulers were less pleased. Pliny the Elder is quoted as having said that women healers should practice inconspicuously “so that after they were dead, no one would know that they have lived.”¹ Nonetheless, women healers, mostly from aristocratic families, were busily practicing by the first century CE, being greatly sought after and handsomely paid for their work.

Two successful practitioners were Leopolda and Victoria, both of whom are mentioned in medical writings of the day, with Victoria receiving the dedication to a medical book. In the preface of the book, *Rerum Medicarum*, she is recognized as being a knowledgeable and experienced physician. Inscriptions of tombstones of women physicians from Rome include such accolades as “mistress of medical sciences” and “excellent physician.”³ Several celebrated women physicians include Olympias, Octavia, Origenia, Margareta (an army surgeon), and Fabiola. The former two wrote books of prescriptions, and the latter was considered to possess remarkable intellectual ability as well as unusual charity. Fabiola opened a hospital for the poor in Rome—the first civil hospital ever founded and thought to be one of the best in Europe at the time. It is said that when she died thousands attended her funeral procession.

Western Europe: The Middle Ages

The Middle Ages were an ambivalent time for women healers. Emerging from the early Middle Ages, during which women healers were considered to be diabolic, little respect was left for ancient traditions deifying women, their bodies, and their connection to nature. St. Jerome, ironically a dear friend and supporter of the healer Fabiola, is quoted as having said that “woman is the gate of the devil, the path of wickedness, the sting of the serpent, in a word, a perilous object.”¹

By the Middle Ages, women healers appeared to take two divergent paths: Although midwives were well respected as skilled practitioners within their communities, many so-called cunning women, who were often poor and illiterate, were accused of and tried for witchcraft. Cunning women were thought to be dabbling in sorcery and bewitchment; midwives were often called as witnesses to testify against them at witchcraft trials.⁶ Midwives were seen as protectors of the expectant mother; a midwife was “the key figure in preventing harm... who guaranteed and subtended the order threatened by the witch.”⁷

Midwives were not impervious to accusations of witchcraft. There are notable cases, such as Walpurga Haussman of Dillenge, who was tried as a witch and executed.⁶ However, they are mainly notable because they are anomalous cases; some prosecutions were a result of political positioning, whereas others were of previously respectable midwives who slipped into “irregular healing methods.”⁶

Overall, midwives tended to be well respected in their communities; however, their skills and expertise varied tremendously. Because there were neither formal education programs for midwives, nor standards of practice, the quality of care and skill a midwife possessed was

largely individual. Nonetheless, there are impressive, if few, records of women from both the Middle Ages who dedicated themselves to healing and medicine. Empress Eudoxia (420 CE) is attributed with the founding of two medical schools and a hospital in Syria, Jerusalem, and the land that eventually became Mesopotamia. Princess Radegonde of Burgundy studied medicine and opened a hospital for lepers, and Hilda of Whitley was an Anglo-Saxon princess who became a physician and in 657 CE built an abbey where she practiced medicine and taught many classical academic subjects.

Jacoba Felicie is an example of one tried for the practicing medicine without a license. Brought to trial in 1322 by the Faculty of Medicine at the University of Paris, she was a literate woman from an affluent family. Jacoba, with unspecified medical training, had successfully treated numerous patients who testified at her trial. Yet, the testimonies were used against her as proof that she had committed the cardinal crime, not of healing, but of attempting to cure. In fourteenth-century England, educated women practitioners were likewise the target of campaigns by English physicians seeking to rid themselves of “worthless and presumptuous women who usurped the profession” seeking fines and long imprisonment for women who attempted the “practyse of Fisyk.”⁴ Women practitioners who spared their lives had enough fear instilled in them to practice their crafts extremely covertly, if at all.

Although volumes of women’s herbal healing traditions were lost during this time, Europeans still depended on plants for medicine, so common household cures persisted. Numerous lay books on herbal medicinal cures were sold for the “gentlewoman” to use for keeping her family well, and ironically these books offered much of the same materia medica in use by physicians during that time. However, the revered place of women healers in their communities had been dramatically altered. Attitudes about nature, women, and their bodies also changed considerably, with the Baconian belief that all three were conquerable by medicine and technology.⁸

When the Moors conquered Spain, Spanish women trained in the healing arts of midwifery and alchemy alongside men, with an emphasis on the treatment of gynecologic and obstetric conditions. The renowned Arabic physician Rhazes is said to have learned many new remedies from women, and to have admitted jealousy of women healers, whom he said were often able to find cures where he had failed to successfully treat a patient.

Trotula of Salerno is a legendary female healer of the Middle Ages. It is alleged that Trotula was considered the most distinguished teacher at the medical college in Salerno, Italy, a gathering place for men and women of Greek, Arab, Latin, and Jewish backgrounds studying medicine. She is said to have been the first female professional of medicine at Salerno, in the eleventh or twelfth century, and was called to medicine because she saw women suffering from obstetric and gynecologic complaints that they were too embarrassed to discuss with male doctors. Trotula was an early advocate of healthy diet, regular exercise, hygiene, and reduced stress.

Although her history is not known with certainty, one of the most significant historical discourses on obstetrics and gynecology, referred to as *The Trotula*, actually a compendium of three texts, was either written in part by her, named after her, or is based on her teachings.⁹ *The Trotula* remained an authoritative text for several centuries. It is predicated on religious and philosophical notions of the period (i.e., the curse of Eve and women's fall from grace), but the author(s) do not pathologize the normal processes of a woman's body and assert that women have particular needs that should only be evaluated and treated by other women. The clinical portions of the book refer to the menses as "flowers," describing menstruation as a process necessary for fertility, much as trees need flowers to produce fruits. Diagnoses are based on keen observation and include assessment of physical findings from pulse and urine, as well as the patient's features and speech patterns. The text advanced theories and procedures, and was the first to define the diagnosis of syphilis based on its dermatologic manifestations. Trotula appears to have treated all manner of conditions with a variety of practices ranging from medicated oils to cesarean section, if necessary, with awareness of the need for antisepsis in surgery, prescribing topical and internal herbal treatments that may have been efficacious, based on what is known today about their actions. Sensitivity to the intimate needs of women is expressed, for example, by publishing the prescription of a procedure that will allow a woman who has previously lost her virginity to appear a virgin upon first intercourse after marriage, lest she face difficult political, legal, and social consequences. Jeanne Achterberg in *Woman as Healer* describes Trotula of Salerno:

*She personified the balance that is so critical to the advancement of woman as a health care professional; a knowledge of science, attention to the magic that is embedded in the mind, a mission of service, awareness of suffering and the gift of compassion. She also had the courage to speak, write, and teach with conviction.*¹

The place of women healers continued to decline dramatically, but another woman healer of the Middle Ages, Hildegard of Bingen, achieved such significant fame that her story bears telling. Hildegard, like many of the other famed women healers, was born of a noble family. She lived between 1098 and 1179 CE in Germany. At 3 years of age, she began receiving visions* and she began religious education at age 8. Her gift of prophecy gave her the uncanny ability to understand religious scriptures immediately, and from an early age she drew the attention of nobles and religious leaders. She also received visions of how life at her abbey was to be lived, ranging from ornate clothing to the development of a language used in the convent—of which nearly a thousand words

*The description of the physical symptoms by which Hildegard's visions were accompanied is remarkably consistent with the characteristics of migraine headaches, including the prodromal or "aural" phase, through to the blinding lights and pain, and finally with the euphoric postmigraine phase. Thus, she may have been a lifelong sufferer of migraine headaches.

survive today. Hildegard was known as a gifted intellectual, skilled in both academia and the arts—the latter as a musician and composer. One of her many books, *Cause et Curae*, a collection of five tomes, is a comprehensive medical work in which she describes diagnosis based on four humoral types (sanguine, phlegmatic, melancholic, and choleric), reminiscent of ancient Greek medical descriptions; appropriate behaviors for lifestyle, including recommendations for diet, stress reduction, and moral behaviors; and astrological predictions, for example, for conception. She provides an extensive discourse on gynecology, with recipes for external and internal preparations, as well as applications for over 200 medicinal plants. Her recommendations also included the use of gemstones, incantations, as well as hydrotherapy.³

Another of her collections, *Physica*, is comprised of nine books containing treatises on plants and trees, minerals and metals, and animals, including their medicinal and "energetic" qualities, and again drawing upon Greek medical descriptions. As is the case with most healers, Hildegard of Bingen's medical protocol reflected the cultural and religious context in which she lived; thus, Christian mysticism pervades her writing. Yet, her role as a woman healer also ran contrary to the common trends of the society in which she lived. Unlike some of the healers already mentioned who made deliberate political choices to develop their arts contrary to popular opinion on the role of women in medicine, Hildegard's calling came to her unbidden, as did her dedication to monastic life. Nonetheless, she represents a high level of intellectual achievement, forwardness in her discussion of women's gynecologic and sexual concerns, and an exemplary level of dedication to social service.

Women Herbalists in the Eighteenth and Nineteenth Centuries

"In the year 1775 my opinion was asked concerning a family recipe for the cure of dropsy. I was told that it had long been kept a secret by an old woman in Shropshire who had sometimes made cures after the more regular practitioners had failed."¹⁰ This statement was made by the illustrious Dr. William Withering, discussing his discovery of the use of foxglove. He is purported to have paid the woman, a Mrs. Hutton, an undisclosed sum of gold coins for sharing the family "recipe," consisting of 20 herbs for the treatment of what was then considered a virtually incurable condition. Little mention of Mrs. Hutton or her herbal practice, if indeed that is what it was, is otherwise made, but the story of the development of the still-used drug digitalis for the treatment of congestive heart failure is medical legend.

Samuel Thomson, the founder of Thomsonian Herbalism, which for a time was rival to the "regular" doctors, wrote in 1834, "We cannot deny that women possess superior capacities for the science of medicine."⁴ Thomson, like Withering, learned herbal medicine from a countrywoman well versed in the subject, although Thomson studied botanical medicines extensively, whereas Withering learned the secret of only one formula. Yet, in the Victorian era, women interested in the healing arts and plants were relegated to the study of

botany, which was considered to provide good gentle exercise for the mind and body. Women were discouraged and prevented from the practice of medicine, and eventually even midwifery, the latter of which was taken over, initially by an untrained class of physicians referred to as barber surgeons, which was an accurate name as they were literally both barbers and surgeons.

Women, considered the weaker gender, were seen to be in need of protection from the rigors of intellectual exercise, which might “damage their delicate constitutions.” In the Victorian era, a sharp distinction was made between science and superstition. A line was drawn between the intuitive, folkloric, and nonacademic approaches of traditional healers and the linear, academic approaches of medical doctors and scientists. It is ironic, however, that the cures of early doctors were largely unsuccessful, and with the use of heroic treatments such as purges, bleedings, and mercury-based drugs, often led to more harm than good. In direct contrast, although herbal cures were not always successful, they often were, and they rarely caused anything near the magnitude of adverse physical problems caused by the cures of the regular doctors.

By necessity, women resumed their roles as active community healers during the settlement of the United States, delivering babies and tending to the health care needs of families from the east to the west coasts during westward expansion. Some women brought healing remedies with them from Europe, eventually planting gardens with herbs that have now become naturalized throughout much of the United States. Many learned to replace their traditional remedies with indigenous plant species, not infrequently learned about from their native neighbors.

As in Europe, the politics of medicine, which in the United States ultimately gave rise to the American Medical Association, once again eventually usurped the role of the community-wise woman. From witchcraft accusations of seventeenth-century New England to the systematic discrediting of midwives and women doctors through the early 1900s, the history of medicine in the United States tells a story of competing political interests, smear campaigns against “irregular” doctors and women, and the development of a medical monopoly by regular physicians.

Until the early 1900s, medical schools for women, blacks, and Native Americans coexisted with medical schools that allowed only males. In 1912, the Flexner report commissioned by the Carnegie Foundation, effectively led to the closure of the former schools, and only those schools sanctioned by the report remained operational.* Although many of the criticisms made in the Flexner report may have accurately portrayed the dismal state of numerous medical programs, there appears to have been no effort made after the report to ensure access to medical education for those whom these schools served.

*Many of the medical programs, for example, Johns Hopkins University and Harvard Medical College, are among those medical colleges that continue to thrive today.

WOMEN'S HEALTH MOVEMENTS

In spite of numerous imposed limitations—or perhaps because of them—women in the United States have been active in health care reform for the better part of the last two centuries. Waves of activism have tended to occur periodically and coincidentally with other social reform movements, such as abolition, suffrage, and the women's rights movement. Women's involvement in health care has transformed medicine in this country, from changing medical practices to humanizing health care institutions, consequently enhancing the status of women socially, economically, and politically.

The Popular Health Movement

The Popular Health Movement is one of the under-acknowledged examples of a major women's health reform movement in the United States.¹¹ Taking place between the 1830s and 1840s, it was a broad-based social movement focused on educating individuals about their bodies, their health, and disease prevention. It was a strategic reaction against the status of the elitist, formally trained physicians who promoted heroic, dangerous treatments that were frequently as incapacitating or deadly as they might have been life saving.¹¹ Popular health movement educators instead emphasized healthy lifestyles, proper diet, exercise, eliminating corsets, and advocated the use of birth control as well as abstinence in marriage to limit family size.

An emphasis was placed on lay practitioners, including midwives, as it was perceived that gentler treatments were to be found in the hands of women and domestic healers.¹¹ Alternative health establishments, such as water cure centers, were popularly frequented and physiologic societies were founded that provided women opportunities to learn about and discuss their health concerns. Women were strongly encouraged to go to medical school and liberate information for others. It was firmly believed that medical information should be accessible to all and that the specialized language of doctors, medical journals, and textbooks prevented nonmedical practitioners from understanding what should rightfully be common knowledge.¹¹

Although this movement eventually ceded to the times, the post-Civil War period marked the beginning of widening opportunities for women to access greater education. There was a significant increase in the number of women attending medical schools, with women comprising up to 6% of all physicians in the United States. This is a remarkable statistic, since as recently as 1973 in the United States, only 9% of all physicians were female.*

The Women's Medical Movement

Women physicians, continuing the philosophic tradition of the popular health movement, established the

*Currently, the number of female and male medical students is approximately equal, with there often being slightly more women students than male in entering medical school classes; however, specialties such as surgery are more common to men than women.

women's medical movement as a way to publicly challenge the popular medical philosophies regarding women's health championed by conventional physicians. These theories included the belief that women were fragile and that education damaged the female reproductive organs. Limited by constraints that prevented them from working in male-run hospitals, they founded exemplary and successful women's hospitals, employing doctors and nurses of both genders. Boston Women's Medical College became the first contemporary medical school established for the training of female physicians. Eventually merging with Boston University because of financial troubles, the school still exists as the prestigious Boston University College of Medicine.

The Progressive Era

In the early 1900s, referred to as the progressive era, the women's health movement largely wrestled with the issues of legalization of contraception, led by activist Margaret Sanger, which eventually led to the legalization of birth control and the maternal and child health movement, which was trying to increase the safety of motherhood through the establishment of prenatal care and maternal health clinics.¹² New York City was the center of activity for both efforts.

The Women's Health/Self-Help Movement

The 1960s and 1970s saw the rebirth of the women's health movement, once again arising to challenge a male-dominated medical system. The women's self-help movement has continued to tackle such difficult issues as abortion rights, rape, women's cancers, childbirth reform, and the excessive use of surgeries such as hysterectomies, mastectomies, and cesarean sections.

The return to natural medicines and "lay" healers that occurred in the post-Civil War era resurfaced in the mid-1960s along with the women's self-help movement. Herbalists—both women and men—began to reclaim the use of herbal medicines again in response to perceptions of over control by the medical system, as well as overuse of medications and invasive treatments. Back-to-nature philosophies consistent with using gentler and more natural remedies, and the desire to be independent of conventional institutions (i.e., the medical establishment), created the modern-day role of herbalists whom, trained by studying the plants themselves, apprenticing themselves to indigenous healers, and studying old texts such as the eclectic medical books, began to quietly practice their art. Similarly, women found themselves training as midwives to meet the needs of increasing numbers of women seeking home births in order to birth without intervention and outside the confines of medical establishments and protocol. Some women learned the arts of midwifery and herbal medicine simultaneously, serving their communities much as the wise women of more ancient times. Many of the most well-known and respected herbalists and midwives of today's herbal movement are those who began in the 1960s and 1970s.

Rebirth of Alternative and Traditional Healing in the Contemporary United States

In recent decades, increasing numbers of women have become disenchanting with the interventionist and impersonal nature of obstetrics and gynecology, as well as other specialties, such as oncology, and have turned to alternative healers for care. Articles on the large number of iatrogenic diseases caused by mis-medication and unnecessary use of procedures in hospitals and doctors' offices has fueled the desire of many to seek more natural medical approaches. This strong public interest in herbal medicine has fed a large economic boon in the natural products industry. Scientific evaluation of herbal medicines has begun, frequently looking to the traditional use of the herbs to direct researchers toward possible medical applications.

Both midwifery and herbal medicine are experiencing resurgence, largely as a result of demand by women patients. Women are making connections between their health and their environments—whether their personal lives, work lives, or physical, ecologic environment. Stress, past abuses, and environmental health risks are increasingly recognized as important factors influencing health. It is fascinating to appreciate that the transformations currently taking place in health care are not sudden or new, but the result of centuries of effort for health care reform by women healers and those unique men practicing alongside these remarkable women, who together continue to shape the history of health care.

ANCIENT TO MODERN HERBAL PRESCRIBING

Aviva Romm

Detailed records of the herbs used as medicines for women's complaints have survived the centuries primarily through ancient treatises and the works of leading herbalists and physicians of their day, Soranus, Galen, Dioscorides, Rhazes, Avicenna, Trotula, Hildegard, and Gerard, among many others who published on gynecologic and obstetric herbal medicine. By the seventeenth century in England, primary health care was most commonly provided by lay people including family members, "housewys," local wise women, midwives, and clergy. This led to a flood of publication of "self-help" medical books, which included information on diagnosis and treatment, the latter often largely based on herbal prescriptions, and the practice of what has been called "empirical medicine."¹³ The herbal prescriptions in these books drew from the works of earlier authorities, for example, Gerard and Dioscorides, and were consistent with the standard conventional medical practices of the day, in contrast with today's self-help or alternative health movement, whose practices often differ vastly from conventional therapies.¹³

Although Western herbal medicine has not enjoyed the unbroken lineage of other traditional medicine systems, for example, traditional Chinese medicine or Ayurveda, it is remarkable to observe that many of the herbs used today for gynecologic and obstetric complaints are the same as those used hundreds or thousands

BOX 2-1**Topics Commonly Addressed in Ancient Herbals for Women**

Afterbirth retention
 Ano-vaginal fistula
 Coagulation problems, excessive bleeding
 Excessive heat
 Breast lesions
 Breast pain
 Childbirth difficulties
 Conception
 Constipation
 Contraceptives
 Diarrhea
 Depilatories
 Diuresis
 Excessive menstruation
 Fetal death/expulsion
 Hair care
 Heart conditions
 Hemorrhoids
 Infertility
 Lochial flow
 Menopause
 Miscarriage
 Nausea
 Prolapsed uterus
 Pudendal itching
 Tumors
 Uterine problems
 Vaginal hygiene
 Vaginal problems

of years ago. There are also many obscure, even bizarre, treatments that fortunately are no longer implemented. The materia medica of Western herbal medicine has been augmented and improved by the addition of herbs that were used by the indigenous inhabitants of North America, and that have been learned by European immigrants in the 400 years since their arrival in North America.

COMMON WOMEN'S COMPLAINTS DISCUSSED IN ANCIENT TEXTS, TREATISES, AND TABLETS

The problems that have arisen in gynecologic and obstetric care historically are not entirely different from those women face today, and some conditions, such as ano-vaginal fistula, which were devastating for women 5000 years ago, remain so today for women in developing nations who lack access to proper preventative and reparative care. [Box 2-1](#) gives a partial list representative of the types of topics that were discussed in herbals for women, although the names of conditions may have differed (e.g., amenorrhea was typically referred to as retention of menses).

COMMON HERBAL PRESCRIPTIONS FOR SELECTED WOMEN'S COMPLAINTS

This chapter is not meant to be an exhaustive accounting of all of the herbal remedies used for women's health since time immemorial. It is meant to illustrate some of the more important remedies that were used historically, occasionally highlighting the unique or strange, and to provide a demonstration of the long historical use of herbs for women's health. The ways in which these herbs may have been used medicinally is highly variable, and included oral administration, topical applications usually to the affected area, fumigation, douching, or as amulets and charms, or with incantations or prayers, in ancient times to one of the many goddesses or gods who presided over the health of women. Although the information presented in the following is strictly botanical, the materia medica of ancient peoples included a variety of nonherbal medicaments, for example, castoreum (musk from the perianal sacs of beavers), which was used by ancient Egyptian midwives to expedite labor, or stones such as malachite and copper salts. The primary resource for this information is *The History of Medications for Women* by Michael J. O'Dowd, a gem of a book for those interested in the history of medicines for women from ancient to modern times.⁵

The information is presented by highlighting selected common gynecologic or obstetric conditions or herbal actions (e.g., lactation, aphrodisiacs), further subdivided by time or culture, and the medicines used. Botanical names are provided when these were identified in the source materials.

Aphrodisiacs

The use of aphrodisiacs to increase libido is documented in most cultures throughout history, even as far back as ancient Assyria ([Table 2-1](#)).⁵ Herbal sexual stimulants remain popular products and are commonly available over the counter. Women today are most likely to seek aphrodisiac herbs for the treatment of sexual debility, such as in the perimenopausal years, rather than simply to increase an otherwise healthy sex drive.

Breast Abscesses/Breast Disease

Breast disease is commonly mentioned in ancient texts and treatises ([Table 2-2](#)). Although the type of breast disease is often not differentiated, it is believed that breast abscesses and breast cancer are usually the subjects. Many herbs, often in the form of poultices and washes, were used topically to treat breast disease.

Labor

A safe, expedient, and minimally painful labor was no less a goal of women living in ancient times than it is today. Herbs were used for all manner of problems that might have arisen during the childbearing process, from the need for pain relief to the need to augment a delayed or stopped labor. Categorically, herbs for childbearing can neatly be split into analgesics and oxytocics ([Table 2-3](#)).

TABLE 2-1

Herbs Used as Aphrodisiacs

LOCATION	HERBS
Ancient Assyria	Five aphrodisiacs were described in <i>The Assyrian Herbal</i> , a monograph published in 1942 on Assyrian herbal medications based on fragments of cuneiform script on approximately 660 medical tablets: <ul style="list-style-type: none"> • Asafetida (<i>Ferula foetida</i>) • Stinging nettle (<i>Urtica dioica</i>) seed (Fig. 2-1) • Red poppy (<i>Papaver rhoeas</i>)
Arabian	<ul style="list-style-type: none"> • Berberis (unspecified) • Camphor (<i>Cinnamomum camphora</i>) • Cubeb (<i>Piper cubeba</i>) • Galanga

TABLE 2-2

Herbs Used for Breast Disease

LOCATION	HERBS
Ancient Assyria	<ul style="list-style-type: none"> • Chaste berry (<i>Vitex agnus castus</i>) extract was applied, either alone or in rose water, as a poultice for breast disorders. • Fenugreek (<i>Trigonella foenum-graecum</i>) was applied as a paste, mixed with flour. It was still listed in the 1983 <i>British Herbal Pharmacopoeia</i> (BHP) as a treatment for suppurating wounds. • Pine (similar to oil of turpentine)
Ancient Greece and Rome	<ul style="list-style-type: none"> • Cabbage • Celery (<i>Apium graveolens</i>) • Cumin (<i>Cuminum cymium</i>) • Fenugreek • Linseed • Mallow • Olive oil
Europe: Late Middle Ages	<ul style="list-style-type: none"> • Celandine juice (<i>Chelidonium majus</i>) • Linseed

Figure 2-1 Stinging nettle (*Urtica dioica*). (Photo by Martin Wall.)**Lactation**

Concerns about insufficient breast milk have long plagued lactating mothers, and a number of herbs have been described for improving the quantity and quality of milk (Table 2-4). Wild lettuce (*Lactuca virosa*), for example, known to have grown wild in ancient Egypt, was given to women after childbirth to promote the increased flow of breast milk. It was described in 1652 by Culpepper in his herbal and in 1735 by John K'Eogh in *Botanologia Universalis Hibernica* as such.⁵ It is not used today for this purpose; it is used instead mostly as an anodyne and sedative, for which it also has been used traditionally.

Menstruation

Common menstrual problems included failure to menstruate (possibly due to pregnancy, but also primary or secondary amenorrhea), dysmenorrhea, or excessive menstruation. Remedies for these conditions were widely discussed in ancient and historical texts.

Amenorrhea

The treatment for amenorrhea (Box 2-2), for which there were many different attributed causes, was generally in the form of emmenagogues administered orally and

TABLE 2-3

Herbs Used for Childbearing

LOCATION	HERBS
Analgesics	
Ancient Assyria	<p>Many of the ancient Assyrian pain relieving herbs contained hyoscine (scopolamine) and are herbs that are not considered gentle or safe for use today, with gentler choices preferred by midwives, and controlled pharmaceutical drugs being preferred when there is the need for strong action.</p> <ul style="list-style-type: none"> • Fox-grape (<i>Solanum</i> spp.) • Henbane (<i>Hyoscyamus niger</i>) • Mandrake (<i>Mandragora officinalis</i>) (Figure 2-2)
Ancient Greece and Rome	<ul style="list-style-type: none"> • Apples, bread, ground grain, liquid barley, melon, olive oil
Oxytocics	
	<p>Many oxytocic herbs were strong purgatives, and did not exert a direct action on the uterus, whereas others may have had a true oxytocic effect. These are mostly out of use in favor of gentler herbs or controlled pharmaceuticals.</p>
Ancient Assyria	<ul style="list-style-type: none"> • Galbanum (<i>Ferula galbaniflua</i>): used as a fumigant to facilitate childbirth • Castor oil (<i>Ricinus communis</i>) was mixed with beer and applied topically to the abdomen overlying the uterus to stimulate contractions, a practice still used today, though without the beer. • Juniper (<i>Juniperus communis</i>): taken alone or with plantain (<i>Plantago psyllium</i>) to speed delivery (Fig. 2-3)
Ancient Egypt	<ul style="list-style-type: none"> • Birthwort (<i>Aristolochia clematis</i>) to induce labor
Ancient Greece and Rome	<ul style="list-style-type: none"> • Also, basil, fir, frankincense • Anise seed (<i>Pimpinella anisum</i>) • Cedar resin • Dittany • Southernwood (<i>Artemisia abrotanum</i>)
Europe: Late Middle Ages	<ul style="list-style-type: none"> • Sweet bay • Hyssop (<i>Hyssopus officinalis</i>) • Madder roots in honey as a suppository (<i>Rubiatinctoria</i>) • Roses in wine



Figure 2-2 Mandrake (*Mandragora officinalis*). (Photo by Martin Wall.)



Figure 2-3 Juniper (*Juniperus communis*). (Photo by Martin Wall.)

topically (Table 2-5). Many emmenagogues are also abortifacients, and may have been used as such. A number of these herbs may have also been used to induce uterine contractions in order to dispel a dead fetus (i.e., from miscarriage or intrauterine fetal death).

Dysmenorrhea

Painful menstruation commonly mentioned in ancient texts remains a common problem addressed in modern herbals for women today (Table 2-6).

Excessive Menstrual Bleeding

Box 2-3 includes an excerpted, translated section from an extensive protocol on uterine prolapse taken from *The Trotula*. Table 2-7 lists some herbs used for excessive menstrual bleeding.

History of American Botanical Medicine: From Thomson to the Eclectics
*David Winston**

In the early part of the nineteenth century, medical practice in the United States was in a dismal state. General lack of medical knowledge, poor hygiene, and allopathic medicine’s adherence to dangerous treatments made going to a physician both a frightening and hazardous experience. The overuse of bleeding, mercury, arsenic, opium, emetics, and purgatives weakened patients almost as much as did the diseases.¹⁶ In response to the common practice of excessive bleeding and purging, physician William Cobbet said, “It was one of those great discoveries which are made from time to time for the depopulation of the earth.”¹⁷

*For historical purposes only.

TABLE 2-4

Herbs Used for Lactation

LOCATION	HERBS
Europe: Late Middle Ages	• Vervain (<i>Verbera</i> spp.) in lukewarm white wine
Ancient Egypt	• Wild lettuce (<i>Lactuca virosa</i>)

BOX 2-2

On Paucity of the Menses

From *The Trotula*⁹
 If women have scant menses and emit them with pain, take some betony or some of its powder. Some pennyroyal, sea wormwood, mugwort, of each one handful. Let them be cooked in water or wine until two parts have been consumed. Then strain through a cloth and let her drink it with the juice of fumitory.

Due to the “regular” doctors’ grim results with his own family and their costly fees, Samuel Thomson (1769–1843), a poorly educated New Hampshire farmer, was driven to create an herbal alternative—Thomsonian Medicine. This system borrowed heavily from Native-American herbal traditions, native sweat baths, and New England folk remedies. It was quite heroic, but substantially less toxic than the orthodox medicines commonly used.¹⁸ Thomson was a product of his times; he was strongly influenced by the individualism associated with Jacksonian Democracy.¹⁹ Upon purchasing a patent, any man or woman could become a botanic physician and practice his simple system. No further training or knowledge was needed. This simplicity is evidenced by Thomson’s primary theory “heat is life, cold is death.” Anything that increased vital heat was beneficial and anything that impeded circulation and vital force was dangerous (e.g., opium, arsenic, mercury, bleeding). The

TABLE 2-5

Herbs Used for Amenorrhea

LOCATION	HERBS
Ancient Assyria	<ul style="list-style-type: none"> • Leaves of the bay tree (<i>Laurus nobilis</i>) • Caper (<i>Capparis spinosa</i>) • Cypress (<i>Cupressus</i> spp.) • Calendula (<i>Calendula officinalis</i>) (Fig. 2-4) • Papyrus (<i>Cyperus papyrus</i>) • Saffron (<i>Crocus sativus</i>)
Ancient Egypt	<ul style="list-style-type: none"> • Caper Capparis Spinosa • Cumin • Dates • Juniper • Pine oil • Rue • Sesame
Ancient Greece and Rome	<ul style="list-style-type: none"> • Cucumber (<i>Cucumis sativus</i>) • Hellebore
Europe: Late Middle Ages	<ul style="list-style-type: none"> • Anise seed • Clove (<i>Syzygium aromaticum</i>) • Fennel (<i>Foeniculum vulgare</i>) • Fern roots • Feverfew (<i>Tanacetum parthenium</i>) • Horehound (<i>Marrubium vulgare</i>) • Hyssop • Lilies • Mugwort (<i>Artemisia vulgaris</i>) • Rue (<i>Ruta graveolens</i>) • Shepherd’s purse (<i>Capsella bursa-pastoris</i>) • Southernwood • White pepper • Wormwood (<i>Artemisia absinthium</i>) (Fig. 2-5) • Yarrow (<i>Achillea millefolium</i>)



Figure 2-4 Calendula (*Calendula officinalis*). (Photo by Martin Wall.)

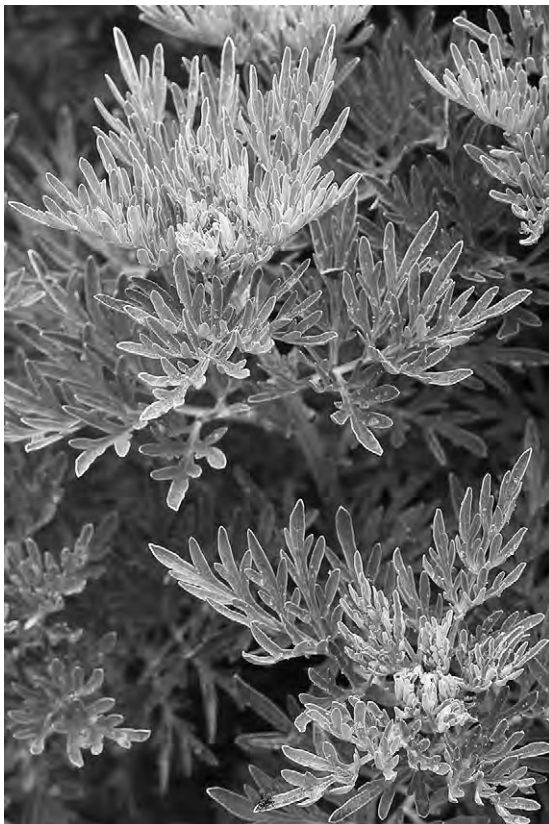


Figure 2-5 Wormwood (*Artemisia absinthium*). (Photo by Martin Wall.)

TABLE 2-6

Herbs Used for Dysmenorrhea

LOCATION	HERBS
Ancient Assyria	<ul style="list-style-type: none"> • Asafetida • Calendula (<i>Calendula officinalis</i>) • Hemp seeds (<i>Cannabis sativa</i>): taken in beer as an analgesic and for heavy menstruation • Dried rose (<i>Rosa</i> spp.) cooked in wine • Poppy (<i>Papaver somniferum</i>) • Mandrake (<i>Mandragora officinarum</i>)
Ancient Egypt	<ul style="list-style-type: none"> • Frankincense • Marijuana
Ancient Greece and Rome	<ul style="list-style-type: none"> • Absinthium • Bayberry • Cumin • Dill • Linseed

BOX 2-3

On Descent of the Womb

From *The Trotula*⁹

If it happens that after birth the womb descends to far down from its places, let oats, have first been moistened and put into a sack, be heating and applied. Sometimes the womb is moved from its place, and sometimes it descends, and sometimes it goes all the way out through the vagina. And this happens on account of a weakening of the ligaments and an abundance of cold humors inside.

Treatment

If it descends and does not come all the way out, aromatic substances ought to be applied to the nose, such as balsam, musk, ambergris, spikenard, storax, and similar things. Let her be fumigated from below. . . But if the woman has come out, let aromatic substances be mixed with juice of wormwood, and from these things let the belly be anointed with a feather. Then take rue, castoreum, and mugwort, and let them be cooked in wine until two parts have been consumed, then give it in a potion.

TABLE 2-7

Herbs Used for Excessive Menstrual Bleeding

LOCATION	HERBS
Ancient Assyria	<ul style="list-style-type: none"> • Cassia (a form of cinnamon); cinnamon is still used by herbalists and midwives for heavy uterine bleeding • Calendula (<i>Calendula officinalis</i>) • Stinging nettles leaf • Windflower (<i>Anemone pulsatilla</i>); pulsatilla is still used by herbalists and midwives today, mostly as an analgesic and antispasmodic for the treatment of dysmenorrhea
Ancient Egypt	<ul style="list-style-type: none"> • Ale • Date juice • Flax tampons
Ancient Greece and Rome	<ul style="list-style-type: none"> • Grape seed • Lotus • Myrtle • Pine • Pomegranate peel • Quinces • Tart wine
Arabian	<ul style="list-style-type: none"> • Raspberry (<i>Rubus</i> spp.)
Europe: Late Middle Ages	<ul style="list-style-type: none"> • Betony (<i>Pedicularis bracteosa</i>)

materia medica of these botanic practitioners utilized a limited number of medicines, including stimulant diaphoretics (*Capsicum*, *Achillea millefolium*, *Hedeoma*, *Zanthoxylum americana*, *Zingiber officinalis*), astringents (*Myrica cerifera*, *Quercus* spp., *Commiphora molmol*), emetics (*Lobelia inflata*, *Eupatorium perfoliatum*), sedatives (*Scutellaria lateriflora*, *Cypripedium pubescens*, *Symplocarpus*), and bitters (*Chelone glabra*, *Populus tremuloides*, *Berberis vulgaris*). Thomson's system usually included several "courses" of steaming, purging, and sweating followed by tonification of the stomach, lungs, and bowels. Although unpleasant in its pronounced activity, this protocol was actually very successful in treating many common scourges of that time.

One of the many failings in this system was Thomson's total aversion to further medical education; he had a profound anti-intellectual bias against a "professional class" of medical physicians. In response to Thomson's rigidity and dictatorial nature, one of his agents and the editor of his journal, Alva Curtis (1797–1881), created his own botanic sect, which became known as the Physio-Medicalists. They founded their own sectarian medical schools and focused on the use of a large materia medica of nontoxic herbs. In addition, they developed a very complex (some would say obtuse) theoretic basis for their practice.²⁰ Part of the Physio-Medicalist theory included an energetic diagnostic system somewhat similar to the Chinese concept of yin and yang. Patients' constitutions and organ systems were seen as either Asthenic (hypoactive, deficient) or Sthenic (hyperactive, excess). Herbs were prescribed according to information ascertained by pulse, tongue, and other physical diagnostic procedures.

This system never developed strong support in the United States; at their height of popularity in the 1880s,

they only numbered 1000 practitioners.²¹ Interestingly enough, this system was transplanted to England, where it flourished and was taught at the British School of Phytotherapy until the 1980s.²²

The most successful sect of botanic physicians—the Eclectic physicians—was founded in the 1820s by Wooster Beach, MD (1794–1868). Eventually, Beach's presence faded and the movement chose a new name, Eclectic Medicine. The Eclectic movement was responsible for popularizing many now well-known herbs. Among these are echinacea (*E. angustifolia*), goldenseal (*Hydrastis canadensis*), black cohosh root/macrotyis (*Actaea racemosa* syn. *Actaea racemosa*), cactus (*Selenicereus grandiflorus*), wild indigo (*Baptisia*), blue cohosh root (*Caulophyllum thalictroides*), cascara sagrada (*Rhamnus purshiana*), and kava (*Piper methysticum*). The Eclectic philosophy allowed physicians to select therapies from other medical sects such as allopathy, homeopathy, and hydrotherapy that would benefit individual patients.

By the late 1850s, the Eclectics were flourishing; Eclecticism and Homeopathy were the two primary alternatives to medical orthodoxy. This initial success of Eclectic practice was marred by constant internecine fighting, "the Eclectic resinoid craze," and declining enrollment in the Eclectic Medical schools during the Civil War. These problems left the Eclectic Movement in serious decline by 1865.²³ Resinoids—which consisted of the use of constituent resins discovered by John King, MD (1813–1893), and which included Podophyllin, Irisin, Macrotyin, and Leptandrin—were stable and active resins precipitated out of liquid extracts. Unfortunately, the drug companies at that time used the same idea to produce "resinoids" from the entire materia medica only to belatedly discover these products were mostly inert. The podophyllin

discovered by King is the same resin still used today in dermatology practice for the treatment of human papillomavirus (HPV).

From the depths of economic and organizational collapse, John Milton Scudder, MD (1829–1894) almost single-handedly resurrected Eclectic Medicine. In his books, *Specific Medication & Specific Medicines* and *Specific Diagnosis*, Scudder proposed a new model for practice. In this system, small doses of high-quality medicines (mostly herbal) replaced large quantities of often nauseating polyherbal or chemical preparations. Each medicine was carefully studied to find its “specific indications” in clinical practice.²⁴ No longer were practitioners treating a disease; they now treated individual people. Each remedy was specific to the unique symptom picture the patient displayed. To further clarify the appropriate treatment, a system of differential diagnosis was developed to give the practitioner clear insights to effective prescribing. Pulse, tongue, urine, and other forms of physical diagnosis became essential tools for selecting the appropriate medicines. The major tenets of Specific Medication are:²⁵

1. Disease is to be regarded as an impairment of the life of the creature. It may be of the structure in and by which he or she lives or of the forces that give life; but it is the life that is to be regarded in medicine.
2. Disease has distinct expressions, as has health; and they may be recognized by those who train themselves to undertake accurate observation. The expression “language of disease” is not a poetic allusion but a statement of fact.
3. There are certain forces in nature, locked up in substances called medicines, that act directly upon the living body, enabling it to resist disease and aiding in a restoration of normal functions and structures.
4. The action of such substances has been determined by observation in the past and is being further known by experiments and observations of the present. Even now our knowledge of the power of drugs is sufficient to enable us to apply them with certainty in a very large number of diseased conditions.
5. We have proved that special drugs meet special conditions of disease. As these conditions of disease have distinct expressions and may be recognized by the physician, we say that these disease expressions become drug indications.
6. Lastly, if these drug indications are followed, the action of remedies will be certain and curative, and the practice of medicine will have a scientific basis, which will ensure continued improvement year by year.

Scudder took the best of Eclectic Medicine, Homeopathy, Rademacher’s Organ Remedies, and years of clinical experience to create a unique system of medicine that was based on the use of herbal as well as mineral remedies. Initially, many Eclectics balked at the new system (called Scudderism or Neo-Homeopathy by critics), but experience proved its value and effectiveness. The Golden Era of Eclectic Medical Practice 1875–1895 found over 8000 Eclectic physicians practicing throughout the United States. There were eight legitimate Eclectic

Medical Schools, and this “American System of Herbal Medicine” seemed secure in its place.

Several prominent Eclectic physicians worked along with Scudder to help spread the word of his new system. John King, MD (1813–1893), whose texts were considered the most authoritative in their day and continued to be studied until the last decade of the nineteenth century was among the most prominent. King, along with J.M. Scudder and J.U. Lloyd, worked to create the medicines and the milieu that allowed Eclectic specific medication to become accepted and then flourish.

The change in centuries brought new ideas that the Eclectics were reluctant to embrace, such as bacteriology, vaccination, and pharmacology. The onslaught of the American Medical Association and the Carnegie Foundation monies, which fueled the AMA’s growth and increasing dominance, changes in medical education, and the Flexner report, which damned most sectarian medical schools, all led to a steady decline in status of and enrollment Eclectic schools.

The deaths of the Eclectic leaders left a hole that was difficult to fill. The Eclectics, who were always most popular in rural America, were increasingly seen as a relic of older days. They were considered unscientific, clinging to plant medicines rather than the new miracle drugs created in laboratories (aspirin, sulfa drugs). No longer was orthodox medicine bleeding or poisoning patients and improved hygiene had reduced the dangers of many terrible diseases that were once common. In this changing social, political, and cultural climate, the Eclectics could only be seen to belong to the past, not the bright industrial future of the twentieth century. The Eclectic Medical College, the last school of Eclectic Medicine, closed its doors in 1939. Although few herbalists, MDs, and NDs are fluent in this system of practice, today the rich Eclectic literature with their authors’ accumulated knowledge remains available as a valuable resource of accumulated botanical medicine experience.

Specific Indications for Botanicals for Women: Eclectic Medical Tradition

David Winston*

Tables 2-8 and 2-9 contain a summary and comparison of remedies acting on the reproductive organs of women that were popular among the selected medical physicians.

A note concerning eclectic medicines and doses
Although many Eclectic physicians made their own tinctures, the most popular medicines were Specific Medicines made by Lloyd Brothers of Cincinnati and “normals” made by W.S. Merrill, also of Cincinnati. These products were highly concentrated extracts, thus the dosage levels were quite low, especially compared with tinctures. Most dosage levels have been adjusted to reflect currently available preparations.

*For historical purposes only.

TABLE 2-8

Eclectic Remedies Acting on the Reproductive Organs of Women

Botanical	Black haw (<i>Viburnum prunifolium</i>)	Pulsatilla (<i>Anemone</i> spp.)	Blue cohosh (<i>Caulophyllum thalictroides</i>)	Black cohosh (<i>Macrotys; Actaea racemosa</i>)	Chaste tree (<i>Vitex agnus-castus</i>)
Action	Acts mildly as a nervine and antispasmodic. Produces muscular relaxation and reduction of reflex irritation during pregnancy. Has a tonic and soothing influence on the entire uterine structures.	Strong-acting nervine, anxiolytic, especially for menstrual, premenstrual, or menopausal problems with intense emotional symptomology.	Has a wide influence on the reproductive organs increasing activity and reducing pain; widely used for uterine and ovarian pain with fullness, ovarian neuralgia, endometritis, endometriosis pain, and mittelschmerz.	Exercises a wide influence on the nerve centers, and their blood supply. Is a mild motor depressant and nerve sedative. Positively relieves muscular soreness or aching, induced or idiopathic, from whatever cause. Relieves erratic nervous conditions; acts directly upon the reproductive functions.	Corpus luteum insufficiency with elevated estrogen and/or deficient progesterone. Highly effective remedy for premenstrual and menopausal anxiety, hot flashes, and uterine fibroids.
General influence on the Menstrual Function	Indicated in dysmenorrhea, with cramp-like or spasmodic pains. Corrects nervous irritation and sympathetic disturbances.	Usually for delayed or scanty menses caused by anxiety, fear, shock, or in weak, depleted anemic girls.	A direct emmenagogue and antispasmodic, it is indicated in amenorrhea, dysmenorrhea, irregular menstruation, and premenstrual syndrome (PMS) anxiety.	In menstrual disorders, accompanied with aching or muscular soreness, and cool skin. Relieves amenorrhea with these symptoms; will control congestive dysmenorrhea. Its influence here is enhanced by aconite or belladonna. Is beneficial in menorrhagia and metrorrhagia; is given in menstrual irregularities of young girls.	Hyper or polymenorrhea, amenorrhea due to hormonal imbalance. Helps to re-establish normal cycle <i>after</i> use of birth control pills. Useful for treating a wide range of PMS symptoms.
Prevent miscarriage or abortion	The best of remedies for this purpose, reliable in emergencies if given in full doses, frequently repeated. Reliable in habitual abortion; will prevent induced abortion if membranes are not ruptured. Should be given in advance in habitual cases, and continued past the time.	In atonic conditions during pregnancy, it will restore tonus to the uterus and promote a normal labor.	In small quantities mixed with viburnum it has a reputation for preventing premature labor. NOT RECOMMENDED FOR SELF-MEDICATION DURING PREGNANCY. PROFESSIONAL USE ONLY.	Can not be depended upon. Acts more like ergot; is given only in small doses, for its specific indications.	May be used up to third month of pregnancy to prevent miscarriage and to remedy morning sickness.

(Continued)

TABLE 2-8

Eclectic Remedies Acting on the Reproductive Organs of Women—cont'd

As a partus-preparator	Abates nerve irritation, restlessness, and hysterical symptoms and erratic pains, contributes to a normal condition; prevents morning sickness, premature contractions; induces cheerfulness and hopefulness and prevents accidents.	In atonic conditions during pregnancy, it will restore tonus to the uterus and promote a normal labor.	Frequently used in combination (mother's cordial), it prevents false labor pains, anxiety and promotes a healthy, easy labor. May cause fetal congestive heart failure. Best to avoid during pregnancy.	The most frequently used remedy for this purpose, less reliable than mitchella; removes erratic pains, and irregular conditions; overcomes hysteria, soothes general muscular irritation; and conduces to a normal, easy, short labor.	Has no direct influence
In labor	Promotes normal conditions, with regular normal contractions, soothes undue muscular irritation. Prevents hemorrhage.	It is beneficial in labors with sluggish, ineffectual, and weak contractions.	Stimulates strong, productive contractions. Useful in pokey labor (rigid os 4–5 cm)	A most reliable oxytocic; produces normal regular intermittent pain; does away with erratic and irregular pains, especially if of rheumatic or neuralgic origin. Prevents postpartum hemorrhage; relieves nervous irritation.	Has no direct influence
After labor	Restores normal tone, and normal capillary circulation, prevents subinvolution, prolapse, and malposition	Can be of benefit with Cimicifuga for postpartum depression.	Helps to expel placenta; reduces postpartum pain; prevents uterine subinvolution	Relieves severe aching and muscular soreness, controls postpartum hemorrhage, promotes normal involution; prevents the recurrence of uterine misplacement; cures persistent leukorrhea, especially if accompanied with relaxation and hypertrophy.	As a galactagogue to stimulate and maintain milk production (most effective first 10 days after birth).
For other conditions including menopause	Valuable during protracted or eruptive fevers, where there is irregular menstruation, with impending uterine inflammation and sepsis. May reduce cyclical outbreaks of herpes.	Excellent remedy for PMS and menopausal anxiety or depression and nervous headaches. Avoid use in acute inflammatory conditions	Effective for menopausal pain; low back pain with pain radiating down the legs; arthritic pain in small joints; spasmodic coughing.	It is of value in fevers with its specific symptomology and in inflammation of the kidneys and bladder. Aching and muscular soreness are its specific indications; menopausal symptoms including depression and hot flashes.	Teenage acne—boys and girls; premenstrual oral and genital herpes; carminative. Hormonally related constipation. Menopausal symptoms including hot flashes, excessive sweating, formication, and anxiety.

Adapted from Ellingwood F: *New American Materia Medica*.

TABLE 2-9

Additional Female Reproductive Remedies Used by the Eclectics

American mistletoe herb (<i>Phoradendron serotinum</i>)	Uterine hemorrhage, including postpartum bleeding. Used as an oxytocic to stimulate labor; considered more effective than ergot.
Canada fleabane herb (<i>Conyza canadiense</i>)	Profuse vaginal discharge or menorrhagia.
Cottonroot bark (<i>Gossypium herbacium</i>)	Clotty, scanty menses with lower backache, a feeling of fullness and weight in the pelvis and bladder.
Cramp bark (<i>Viburnum opulus</i>)	Spasmodic uterine pain—dysmenorrhea, perineal pain.
Helonias (<i>Chamaelirium luteum</i>)	Female reproductive system amphoteric, increases fertility, regulates hormonal levels. Useful for pelvic congestion.
Licorice (<i>Glycyrrhiza glabra</i>)	Contains isoflavones (phytoestrogens)—use with white peony and saw palmetto for PCOS.
Motherwort (<i>Leonurus cardiaca</i>)	Anxiolytic, antispasmodic, PMS, and menopausal anxiety.
Partridge berry (<i>Mitchella repens</i>)	Uterine astringent, menorrhagia, uterine prolapse, feeling of heaviness in abdomen, tender with pressure.
Peach tree bark (<i>Prunus persica</i>)	Irritation of the stomach and upper gastrointestinal tract—severe morning sickness.
Raspberry leaf (<i>Rubus spp.</i>)	Uterine tonic—useful throughout pregnancy and postpartum, uterine prolapse, menorrhagia.
Saw palmetto (<i>Serenoa repens</i>)	Uterine tonic—useful for PCOS, infertility, and pelvic fullness syndrome.
Shepherd's purse—herb (<i>Capsella bursa-pastoris</i>)	Heavy bleeding caused by fibroids.
Thuja (<i>Thuja occidentalis</i>)	Used topically and orally for venereal warts resulting from human papillomavirus. Also indicated for leukorrhea and urinary dribbling.
Tiger lily (<i>Lilium lancifolium</i>)	Used for pelvic congestion and stagnation, ovarian neuralgia.
True unicorn rt. (<i>Aletris farinosa</i>)	Polymenorrhagia with labor-like pain and a sense of debility in the pelvis.
Water eryngo (<i>Eryngium aquafolium</i>)	Urinary irritation experienced as a constant sexual urge.
White ash bark (<i>Fraxinus americana</i>)	Fibroids, especially with heavy bleeding. Uterine hypertrophy with profuse leukorrhea and menstrual bleeding.
White baneberry root (<i>Actea alba</i>)	Ovarian cysts with pronounced tenderness upon palpation.
Yarrow herb and flower (<i>Achillea millefolium</i>)	Atonic menorrhagia, vaginal leukorrhea, postpartum bleeding, and heavy bleeding from fibroids.

Fundamental Principles of Herbal Medicine

*Aviva Romm, Lisa Ganora, David Hoffmann, Eric Yarnell,
Kathy Abascal and Mitch Coven*



CHAPTER

Not everything that can be counted counts, and not everything that counts can be counted.
—Albert Einstein

THE EVIDENCE BASE FOR BOTANICAL MEDICINE

Aviva Romm

Herbal medicine is undergoing rapid evolution as divergent streams of thought meet to redefine it in a modern clinical context. Many Western herbalists and naturopathic physicians share the concern that the mainstreaming of herbal medicine threatens to uproot it from its classical foundation; yet, practitioners are also concerned with having solid scientific validation that the products they recommend, or which their patients might already be using, meet basic standards of safety and efficacy.¹⁻⁴ Interestingly, patients are often more interested in anecdotal evidence of safety and risk in contrast to practitioners who are more likely to want detailed and objective evidence of benefit, safety, and risk.⁵ There is a tremendous need for a comprehensive way to evaluate herbal medicine efficacy and safety while integrating the concerns and experiences of all of the partners in health care: medical doctors and scientists, traditional practitioners, and those taking herbal medicines both for self-care and as patients.

This chapter proposes an integrative model of evidence-based herbal medicine that allows an intelligent synthesis of the various possible forms of data in the evaluation of botanical medicines, in order to include traditional evidence, scientific findings, and expert consensus based on clinical observation. This chapter also discusses the evidence upon which this text is based. In its broadest and most liberal interpretation, evidence-based medicine (EBM) can embody an ideal fusion of “clinical and laboratory research data with human experience,” as suggested by herbalist Simon Mills, rather than the reductionist, prepackaged mind-set that it has been accused of engendering.⁶ An integrative model of presenting evidence can be seen in the monograph collections of the European Scientific Cooperative on Phytotherapy (ESCOP), the World Health Organization (WHO), and

the *American Herbal Pharmacopoeia* (AHP), all of which acknowledge multiple levels of evidence including traditional use, clinical applications, and relevant science.

WHAT IS EVIDENCE-BASED MEDICINE?

The concept of EBM was first articulated in mid-nineteenth century Paris, and perhaps earlier.⁷ Described more recently as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients,”⁷ EBM has been widely adopted in conventional medical circles as a hierarchic methodologic model of evaluating and ranking evidence for the determination of what is considered the best and most objective clinical practice. EBM as a packagable product-concept has become big business in medicine—a profitable host of commodities that include national conferences, hand-held computers that can be taken into patient consultations and programmed to generate EBM protocol for patients on the spot, books and journals, undergraduate and postgraduate training programs, and Web-based courses.⁷ Centers for the study of EBM have been established, as have extensive databases.⁷

Yet, responses to EBM as a medical paradigm based solely on external, objective evidence to the exclusion of the practitioner’s clinical judgment and experience have been highly equivocal, with widely varying criticisms ranging from “evidence-based medicine being old hat” to it being a “dangerous innovation, perpetrated by the arrogant to serve cost-cutters and suppress clinical freedom.” EBM has been “criticized for the inappropriateness of much evidence and its application to clinical practice, for logical inconsistencies, for potentially reducing the role of clinical judgment, for difficulties integrating into everyday professional practice, and for cultural bias.”⁸ EBM has been critically called “cookie-cutter” medicine, systematizing patient treatments according to specified protocol.⁹ Ironically, this appears to be a backward step in light of patients’ increasing demands for

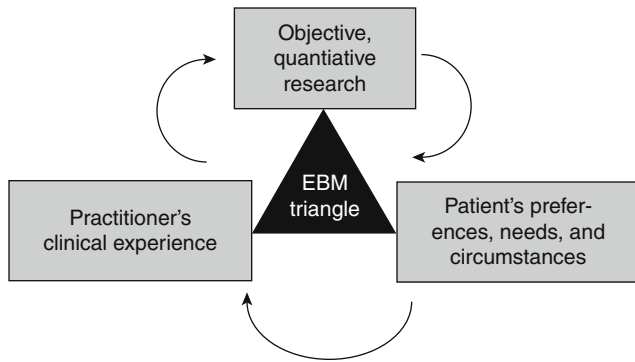


Figure 3-1 The evidence-based medicine triangle.

greater individual attention in medical care. Accusations of EBM being a cost-cutting measure are based upon the belief that streamlining diagnoses and treatments will represent cost savings to managed care organizations.⁷⁻⁹

Practitioners naturally want to provide their patients with the best options. Many believe that relying solely on external, quantified evidence will relieve them of the burden of responsibility (or culpability) inherent in exercising individual clinical judgment. However, removing subjective observation and judgment entirely from clinical decision making requires objectifying and homogenizing patients. John Astin, PhD, writing in *Academic Medicine*, states

Decisions in medicine, irrespective of how much objective evidence we gather, always involves the weighing of probabilities... To suggest that randomized controlled trials, meta-analyses and clinical practice guidelines will eliminate the need for clinical judgment is to misrepresent the realities of clinical medicine (both CAM and conventional). If medicine could be purely evidence-based (which is highly debatable both practically and financially), then in theory medical care... could essentially be administered by computers and computer algorithms.²

EBM proponents such as David Sackett suggest that the concept of EBM has been misinterpreted to be a one-dimensional orthodoxy based solely on objective, quantitative research methodologies, and that it is actually a much broader model than has been typically conveyed, with external evidence being only one of three important aspects of EBM.⁷ The other arms of EBM are the patient's preferences, needs, and circumstances, and the practitioner's clinical experience (Fig. 3-1).

Sackett's description of EBM demonstrates its potential to serve as an integrative model:

The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. By individual clinical expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice. Increased expertise is reflected in many ways, but especially in more effective and efficient diagnosis and in the more thoughtful identification and compassionate use of individual patients' predicaments, rights, and preferences in making clinical decisions about their care. By best available clinical evidence

we mean clinically relevant research, often from the basic sciences of medicine, but especially from patient centered clinical research... Without clinical expertise, practice risks becoming tyrannized by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient. Without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients... External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision.⁷

According to this, evidence-based medicine need not be restricted to reductionist forms such as RCTs and meta-analyses as some suggest (Box 3-1, Fig. 3-1). At its best, it is a "triangulation of knowledge from education, clinical practice, and the best research available for a given condition or therapy."⁹

SUPPORTING EVIDENCE FOR BOTANICALS DISCUSSED IN THIS TEXT

The World Health Organization (WHO), and numerous individual nations, in recognition of the widespread use and significance value of traditional medicines and the value of varying levels of evidence, have adopted standards for evaluating and approving the efficacy and safety of traditional herbal medicines. Acceptable forms of evidence include the following:

- Scientific evidence
- Expert opinion; contemporary clinical use by practitioners
- Historical and traditional data
- Ethnobotanical information

It is upon these forms of evidence that this book relies for its supporting data. Readers can determine for themselves whether the supporting evidence accompanying each herb, along with the safety data, adequately substantiates the use of that herb in the context of the practitioner's own practice and expectations of evidence.

Scientific Evidence

Scientific data included in this book may fall into any of the following categories:

- Meta-analyses of randomized controlled trials (RCT)
- Systematic reviews
- Individual RCTs
- At least one well-designed controlled study with expert recommendations
- Other types of well-designed experimental studies
- Other studies: open studies, comparative, correlation, case control, etc.; expert opinion of a committee
- Toxicology studies, in vivo and in vitro studies
- Animal studies*

*The author recognizes that many herbalists are philosophically opposed to the mistreatment of animals for the benefit of science, strongly favoring instead the development of harmless animal studies and ethical human study models. However, given the value of certain information derived from animal studies, for example, teratogenicity and mutagenicity studies, animal studies are regrettably included.

BOX 3-1

Research Methods for Beginners

For those unfamiliar with research jargon, here is a brief overview of research methodologies and terminology. Research methods are categorized hierarchically in order of highest to lowest value of objectivity and reliability of the varying levels of evidence. The “evidence pyramid” is one such scheme for classifying research methods (Fig. 3-2).

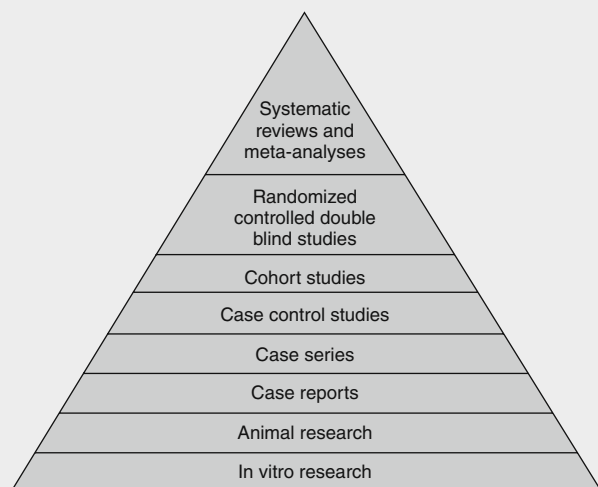


Figure 3-2 The evidence pyramid. (Courtesy of SUNY Downstate Medical Center.)

Definitions

A *systematic review* is a method of reviewing multiple clinical trials using a system that minimizes study biases. It consists of a comprehensive survey of all of the primary studies of the highest level of evidence on a topic that have been systematically identified, ranked, and summarized according to explicit methodologies.

A *meta-analysis* is a survey in which the results of the studies included in the review are statistically similar and are combined and analyzed as if they were one study. Meta-analyses have several limitations: Studies rarely agree precisely and often sample sizes of single studies

limit the conclusions that can be drawn; biases may be built in if authors selectively include studies that support their own conclusion; studies that demonstrate positive outcomes tend to be selectively published over those that do not; if several weak studies are combined, they may cumulatively give the impression of a strong study.

A *randomized controlled trial* (RCT) is comprised of two groups, a treatment group and a control group. The former receives the treatment being evaluated; the latter receives either no treatment or a default treatment. Participants are then randomly assigned to all groups.

A *double-blind study*, is one in which neither participant nor practitioner knows whether the participant is receiving the treatment being studied or the control treatment. This type of study is thought to be the most effective at eliminating confounding variables such as a placebo effect and bias.

In a *cohort study* participants with a specific condition or those receiving a particular treatment are followed over time and are compared with another group not affected by the condition or following the treatment. Cohort studies have a number of limitations, including possible variability between the two groups, and length of time for the studies, the latter that could lead to changes in participant condition as well as participants dropping out of the study.

Case control studies are those in which patients with a certain condition are compared with those who do not have the condition. Advantages are that they can be done quickly and do not require researchers to have special methods; rather, they depend more upon questionnaires. Case control studies are considered less reliable than RCTs and cohort studies.

Case series and *case reports* are either collections of reports on a series of patients, or a report on the treatment of a single patient. Case reports are considered to lack statistical validity because there are no control groups with which to compare study outcomes.

Problems with Conventional Research Methodologies for Botanical Therapies

Not all CAM therapies (i.e., prayer, homeopathy) are expected to stand up to classic methods of safety and efficacy testing. However, because herbs contain pharmacologically active substances, there is an implicit expectation that if herbs “really work” they should be able to measure up to the standards set for conventional drugs. Although this is theoretically sound, it is not reasonable in practice: Whole herbs are not the same as isolated drugs, nor are they applied as such by botanical medicine practitioners. A distinction can be made for single isolated active ingredients derived from botanicals, which

are much more like pharmaceutical drugs than they are herbal products. RCTs for herbal products, in which all study group participants receive the same treatment are by definition given in a model antithetical to the way herbs are actually applied clinically by herbalists, wherein choice of herbs, formulation, and dosage are tailored specifically to the patient’s unique needs.^{6,9} There is also frequently a difference in the form of products used in clinical trials compared with those used by professional botanical medicine practitioners. Typically, botanical medicines are prescribed as multi-ingredient formulas, or as single herbs, in whole plant or whole plant extract forms that are most appropriate to the individual herb

and specific patient. For most herbs, the biological activities of the constituents have not yet even been well characterized.¹⁰

According to the WHO:

*Experience has shown that there are real benefits in the long-term use of whole medicinal plants and their extracts, since the constituents in them work in conjunction with each other. However, there is very little research on whole plants because the drug approval process does not accommodate undifferentiated mixtures of natural chemicals, the collective function of which is uncertain. To isolate each active ingredient from each herb would be immensely time-consuming at unportable cost, and is almost impossible in the case of preparations.*¹¹

Although RCTs may show positive effect, lack of positive RCTs does not mean inefficacy; it may simply indicate a lack of studies, or an inappropriately or ineffectively applied protocol. RCTs can only answer specific questions about general populations: Does this herb given in this group, at this time, in this form, and at this dose treat this condition? They do not answer specific questions about individual patients, and individual patient care is the crux of botanical medicine practice.

Limits of Research and Research Biases

Implicit in relying upon the results of RCTs and other classic trials is the belief that they represent unbiased analyses. This may be a mistaken assumption. Even the RCT, the gold standard of research methodologies and one of the most reliable methodologies for limiting study biases, is not impervious to bias and is not without limitations.¹² Methodologic features of RCTs, including trial quality, have been shown to influence effect sizes; and some researchers believe that eliminating the psychological component of clinical care from trials and minimizing placebo effect may cause studies to bear little resemblance to clinical practice.^{13,14}

Politics also influences the choice of which studies get funded; what questions are asked; and whether, where, and how outcomes are published.¹⁵ Limited financial incentive on the part of pharmaceutical companies and researchers to investigate herbal products, particularly whole herbs, is due in part to the limited patentability of botanicals, and leads to fewer funding opportunities.^{16,17} Publication bias on the part of medical journals also has recently been raised as a significant concern. Additionally, there may be negative biases in the publication of case reports, with emphasis placed on the negative side effects of botanicals.³ John Astin, MD writing on CAM, states that the “approach of selectively citing one negative article while failing to cite any of the positive systematic reviews or meta-analyses is the antithesis of evidence-based medicine. It is, in short, opinion based medicine.”² He states further that “The failure to cite such evidence contributes to a very misleading picture of the state of the scientific evidence base underlying CAM.”²

Frequently, herbal medicine as a whole is indicted on the basis of a small number of published negative case reports that are typically followed by a cascade of negative popular media. Although adverse effects and potential harm are rightfully brought to the attention of

professionals and the public, there appear to be double standards in the reporting of the potential harmfulness of herbs compared with the volume and severity of reports on the risks of pharmaceutical medications.

Nonetheless, in spite of the billions of dollars of herbal products sold in the United States alone, there are negligible reports of adverse herbal events compared with the volume of reported adverse drug events. In Europe, where millions of units of herbal products are sold and market surveillance and adverse events reporting systems are well established, there too are an amazingly small number of adverse reports.⁸ A major concern expressed about herbal medicine is the questionable safety of botanical medicines in pregnancy. Although indeed many are not to be used in pregnancy because of uncertainty about their safety, more than 90% of medications approved since 1980 have not been properly tested for mutagenicity or teratogenicity.¹⁸ Further, a growing body of evidence suggests that only 20% to 37% of conventional medical practices that are commonly accepted and used across a broad range of medical specialties are predicated on evidence from RCTs. Coronary bypass surgery was used for over 20 years before it was subjected to clinical trials.^{16,19,20} Although these statistics do not justify lack of evidence for nonconventional therapies, and do not negate the necessity for reliable clinical evidence, it does illustrate that there are sometimes double standards influencing attitudes about nonconventional therapies, and that there may at times be a suspension of common sense in pursuit of the holy grail of evidence (Box 3-2).

Expert Consensus

Well into the early twentieth century, observational studies were considered an important source of medical evidence, declining in perceived value only over the past 20 years.¹² Clinical decision making in medicine was based on observation, personal experience, and intuition.¹² Even the randomized controlled clinical trial (RCT) is only 50 years old and has been established as the definitive method of testing new drugs only since the 1980s.²¹

Although herbal medicine is frequently “dismissed by the orthodoxy as a fringe activity,”⁶ there are actually thousands of well-trained, highly knowledgeable and experienced clinical Western herbalists in numerous countries—England, Scotland, Germany, Australia, New Zealand, Canada, and the United States, to name a few. In Europe, particularly in Germany, phytotherapy is an accepted part of medical practice. Botanical experts are trained as either part of medical education if they are physicians, or in recognized botanical medicine educational programs with consistent curricula. In the United States, 13 states currently recognize naturopathic physicians who have graduated from accredited 4-year naturopathic colleges and passed their medical boards as legitimate physicians whose scope of practice includes botanical medicine. Over the past decade, a number of physicians have also gained significant experience in the clinical use of herbs. Although anecdotal evidence has largely been dismissed as invalid, the consensus of a large body of experts is entirely valid.

BOX 3-2

A Satirical View of EBM

Parachute Use to Prevent Death and Major Trauma Related to Gravitational Challenge: Systematic Review of Randomized Controlled Trials

Gordon CS Smith, Jill P Pell

Abstract objectives: To determine whether parachutes are effective in preventing major trauma related to gravitational challenge.

Design: Systematic review of randomized controlled trials.

Data sources: Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate internet sites and citation lists.

Study selection: Studies showing the effects of using a parachute during free fall.

Main outcome measure: Death or major trauma, defined as an injury severity score >15.

Results: We were unable to identify any randomized controlled trials of parachute intervention.

Conclusions: As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomized controlled trials. Advocates of evidence-based medicine have criticized the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence-based medicine organized and participated in a double-blind, randomized, placebo-controlled, crossover trial of the parachute.

BMJ 327: 1459-1461, 2003, <http://www.bmj.com>.

A large collective body of knowledge from contemporary clinical practitioners provides compelling evidence for the use of herbal medicines. Case studies ($n = 1$ studies), case series, uncontrolled trials, observational reports, and outcome-based studies all contribute important information to the dialogue on botanicals, ranging from establishing clinical effects that merit further study to providing clinical insights that corroborate traditional uses with modern pharmacologic effects.^{22,23} "Case study research provides a useful tool for investigation of unusual cases or therapies for which effectiveness data are lacking and for preliminary investigation of any factor that may influence patient outcome." Qualitative research methods need to be developed further to fully evaluate the efficacy and safety of nonconventional therapies.²¹ Collaboration between conventionally trained researchers and traditional and medical herbalists to systematically document herbalists' clinical use of botanical medicines is a rich and yet untapped area for botanical medicine research.

This textbook draws extensively upon the valuable resource of "contemporary clinical consensus" (expert opinion), derived from communication with

practitioners, surveys, published and unpublished reports, texts, training materials, and symposia.

Traditional Evidence

Historical information referred to in this text is largely derived from classical botanical medicine texts, treatises and herbals, pharmacopoeias, monographs, and academic books on the history of botanical medicines. These appear in the references corresponding to individual chapters. Herbalist Kerry Bone best explains traditional use:

Traditional use occurs in the context of a traditional medicine system. This healing system may have evolved over thousands of years and be part of a great culture, or it may be part of a smaller or more primitive system. The important point is that traditional use is the refined knowledge of many generations, carefully evaluated and re-evaluated by many practitioners of the craft. It is not just the anecdotal accounts of a few practitioners.²⁴

Bone defines folk use "as small-scale use; often in an isolated context... Folk use should therefore not be confused with traditional use. That is not to say that folk use is without value. More that it should be placed in the context of the hypothetical rather than the definite."²⁴

Traditional sources for this text include pharmacopoeias, classic texts on traditional Western herbal practices, and classic texts and materia medica from recognized traditional systems, for example Traditional Chinese medicine (TCM) and Ayurveda. Additionally, herbs that are regulated as traditional medicines in nations with established traditional medicines categories are included as traditional medicines.

Ethnobotanical Evidence

Ethnobotanical evidence can be a useful source of information on the historic and cultural uses herbs—especially when illustrating the length of time for which an herb has been used or the diversity of cultures in disparate locations that have independently arrived at a similar use for a specific plant. However, unless how the herb was prepared for use is stated in the ethnobotanical reference, it is often difficult to extrapolate a practical, clinical application. Indigenous peoples commonly use plant medicines externally, ceremonially, and symbolically without the patient ingesting or medicinally applying the herb. Blowing the smoke of an herb over a patient or having the patient wear a piece of a root in a pouch as an amulet is drastically different than having the patient take a concentrated decoction of many grams of the roots. Ethnobotanical uses cited in this book imply ingestion or topical medicinal application of the herb unless otherwise specified.

REFERENCES USED IN THE DEVELOPMENT OF THIS TEXT

The following were considered acceptable forms of references for inclusion in this text:

- Academic articles from peer-reviewed medical and CAM journals
- Classic botanical medicine texts and recognized pharmacopoeia

BOX 3-3**Integrative Medicine Texts, Herbal Texts, and Herbal Monographs Referenced in the Book**

- Barrett M: Handbook of Clinically Tested Remedies, vols 1 and 2, New York, 2004, Haworth Press.
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- Rotblatt M, Ziment I: Evidence-Based Herbal Medicine, Philadelphia, 2002, Hanley & Belfus.
- Upton R: American Herbal Pharmacopoeis and Therapeutic Compendium Series, Santa Cruz, CA, 2004, American Herbal Pharmacopoeia.
- Weiss R, Fintelmann V: Herbal Medicine, ed 2, New York, 2000, Thieme.
- Wichtl M: Herbal Drugs and Phytopharmaceuticals: A Handbook for Practice on a Scientific Basis, Stuttgart, 2004, Medpharm.
- WHO: The World Health Organization Monographs, Geneva, WHO.

- Definitive evidence-based botanical medicine texts and reference books
- Recognized monographs (e.g., those published by AHP, ESCOP, and WHO)
- Ethnobotanical and historic references

Boxes 3-3 and 3-4 give a complete list of botanical medicine texts, monographs, and databases consulted for this book.

IS THERE ADEQUATE EVIDENCE FOR BOTANICAL MEDICINES?

Although it is frequently stated that botanical medicines are poorly studied, a quick examination of a comprehensive database (e.g. Ovid) should dispel that myth. In addition to clinical studies, there are numerous *in vitro* and *in vivo* human tissue, cell, and animal studies on herbal products and isolated constituents.⁸ In Europe, clinical research into herbal medicine has been established

for decades.¹⁷ With the establishment of NCCAM, the priority for herbal research has continued to grow in the United States. Although there are a limited number of RCTs for most herbs, those that have been conducted should establish a compelling argument for the efficacy of herbal medicines. Efficacy studies and meta-analyses are growing in number and include positive reports in the Cochrane Collaboration on ginkgo for cognitive impairment and dementia, echinacea for cold treatment, St. John's wort for treatment of mild to moderate depression, and feverfew for the treatment of migraines, and RCTs for St. John's wort for treatment of mild to moderate depression, kava for anxiety, chaste tree berry for PMS, and horse chestnut for venous insufficiency, among others.^{8,24}

It is also important to remember that few botanical approaches have been disproved or proved dangerous.² As conventional medicine moves toward a more

BOX 3-4

Internet Databases Consulted in This Text

CAB Abstracts<http://www.cabi.org/>**CINAHL**<http://www.cinahl.com/>**HerbMed**<http://www.herbmed.org>
Longwood Herbal Taskforce
<http://www.mcphs.edu/>**MD Consult**<http://www.mdconsult.com/>**Medline**<http://www.ncbi.nlm.nih.gov/>**Natural Standard**<http://www.naturalstandard.com/>**Ovid**<http://www.ovid.com/>**STATRef**<http://www.statref.com/>

integrated model of health care that incorporates herbal medicines, and as botanical medicine practitioners increasingly work with medical professionals, there will be an inherent need to blend languages and approaches to create a useful and mutually respectful paradigm. Change will have to be reflected not only in clinical and educational settings but also in research models. An inclusive, holistic interpretation of EBM allows the possibility of it being used as an ideal model incorporating the best available objective evidence (scientific, traditional, ethnobotanical, etc.) with practitioner experience and patient preferences and circumstances.

CONSTITUENTS OF MEDICINAL PLANTS

Lisa Ganora

An understanding of herbal constituents can help practitioners develop greater discernment in preparing and using botanical medicines. Phytochemistry focuses on the physical aspect of a plant's healing powers—the molecules and compounds behind observable qualities, actions, and clinical effects. These structures are readily identifiable on a sensory level, permitting organoleptic analysis of many herbs, imparting, for example, scent resulting from the small, volatile compounds in essential oils; bitter taste from certain lactones or alkaloids; colorful hues of light reflected by the antioxidant flavonoid pigments; and the slippery texture of the heteropolysaccharides known as mucilages. When approaching the study of phytochemistry in a holistic way, we transcend the world of dry abstraction and experience the tangible realm of what plants really do: We integrate sensory

experience, beauty, and practical application with knowledge of the unseen architecture of life.

Naming an herbal constituent gives only a bare hint of its character, classification, relationships, and properties. No molecule exists naturally in isolation, and so must always be considered within the broader context of its biosynthetic origin, its companion molecules, and the plant matrix from which it arises. At the same time, the science of chemistry enables us to make fine distinctions on a very small scale. A sense of balance between details and context is important for incorporating phytochemical information into our knowledge base as practitioners. We must consider not only the structure of an individual compound, but also how this compound behaves in relationship to other molecules in the plant, the extract, the herbal formula, and the individual consuming the product.

Molecules are, profoundly and literally, patterns of energy in relationship. These patterns of energy interact with other patterns of energy—biological molecules—in the human body to effect changes in health. When reading the following material, try to keep this in mind. The molecular world is far more mystical, fluid, and dynamic than college chemistry classes might have suggested.

SYNERGY AND VARIABILITY

A living plant contains myriad compounds that work synergistically to protect the plant from harm and carry out all the processes of its metabolism. Interestingly, many of these molecules have similar functions in plants and humans. For instance, the berberine in *Mahonia aquifolium* (Oregon grape; Fig. 3-3) is an example of an antimicrobial compound that protects against fungal and bacterial infection in both plants and humans. Another example is the class of molecules known as flavonoids, which occur in all green plants. In the chloroplasts, flavonoids act as primary antioxidants to protect the delicate light-harvesting compounds from ultraviolet and free radical damage. In the human body, these same compounds act as antioxidants, anticarcinogens, and anti-inflammatories by virtue of their radical quenching activities.

From a practitioner's perspective, an herb is chosen for therapeutic effects based on its particular "personality." Physically, this characteristic is encoded within the unique blend of constituents inside the plant. Rather than investing in the concept of active ingredients, we can more usefully entertain the idea of synergistic activity complexes: sets of constituents that may potentiate, stabilize, or attenuate each other to produce a characteristic set of herbal actions. As we discuss phytochemicals on an individual basis, we must always remember that the reductionist perspective provides only a small and relatively static snapshot of a dynamic and complex process. The scientific information concerning the properties of isolated phytochemicals must always be interpreted within a larger context.

Phytochemical variability is an important concern for the herbal practitioner. We must keep in mind that the chemical profile of a living plant is a system that constantly adapts to conditions in the environment. For example, seasonal variability is demonstrated in