Healing the Heart: Integrating Complementary Therapies and Healing Practices Into the Care of Cardiovascular Patients

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Complementary therapies and healing practices have been found to reduce stress, anxiety, and lifestyle patterns known to contribute to cardiovascular disease. Promising therapies include imagery and hypnosis, meditation, yoga, tai chi, prayer, music, exercise, diet, and use of dietary supplements. Many of these complementary approaches to healing have been within the domain of nursing for centuries and can readily be integrated into the care of patients with cardiovascular disease. While individual complementary modalities hold considerable merit, it is critical that the philosophy underlying these therapies—caring, holism, and harmony—also be understood and honored. (Prog Cardiovasc Nurs. 2002; 17:73–80) ©2002 CHF, Inc

For many cardiovascular patients, stress and underlying lifestyle patterns are among the well documented risk factors known to contribute to both the development of cardiovascular disease and to recovery. These risk factors include anger,¹ hostility,² social isolation,³ stress,⁴ anxiety,⁵,⁶ and depression.⁷ In a review article on the influence of anxiety and depression on outcomes of patients with coronary artery disease, Januzzi et al.⁷ conclude that anxiety is prevalent in patients with acute cardiac illness and triples the risk for mortality following a myocardial infarction, doubles the risk for reinfarction over 5 years, and increases the risk for sudden cardiac death by a factor of six. They further conclude that the incidence of major depression in patients with acute cardiac illness is approximately 25% and that major depression following a myocardial infarction has a devastating effect on both the quality of life and adherence to therapies, and quadruples the risk for mortality.

Dean Ornish, MD, published numerous papers throughout the 1980s and 1990s, demonstrating that lifestyle changes, including low-fat diet, exercise, yoga, and group support, can impact the course of, and in many cases even reverse, severe coronary artery disease.⁸-¹⁰ In his recent book Love and Survival: The Scientific Basis for the Healing Power of Intimacy,¹¹ Ornish notes that scientists and practitioners have long believed that the benefits of his program are due to diet and exercise changes. They have often overlooked the evidence that stress management techniques are as strongly correlated with changes in coronary artery disease as is adherence to diet. He goes on to note that as important as changes are in cardiac positron emission tomographic scans and arteriograms, there are even more important outcomes that patients and their families experience that are more difficult to quantify. These include: rediscovering inner sources of peace, joy, and well-being; learning how to communicate in ways that enhance intimacy with loved ones; creating a healthy community of friends and family; developing more compassion and empathy for themselves and others; and directly experiencing the transcendent interconnectedness of life.

There is a growing body of empiric evidence that "healing the heart" requires care of the whole person—the body, mind, and spirit. To effectively achieve this requires tapping into a broad array of healing options, including the best of high-technology biomedical care as well as complementary and alternative care options.

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Manuscript received April 4, 2001; accepted May 22, 2001
THE GROWTH OF COMPLEMENTARY AND ALTERNATIVE MEDICINE

Over the past 10 years, there has been tremendous growth in the field of complementary and alternative medicine (CAM). It is estimated that more than 40% of Americans use complementary therapies. This is thought to be a conservative estimate, as the survey conducted by Eisenberg et al.\textsuperscript{12} inquired about the use of a limited number of therapies and obtained information only from English-speaking persons with a telephone. This has prompted some to refer to the field of CAM as "the invisible mainstream." The high use of complementary therapies has occurred despite the fact that the majority of costs have been paid out-of-pocket. Eisenberg et al. estimate that annual expenditures for CAM services exceed $27 billion.

The growing interest in CAM prompted the National Institutes of Health to establish a center dedicated to CAM research. The National Center for Complementary and Alternative Medicine (NCCAM) is responsible for exploring complementary and alternative healing practices in the context of rigorous research, training CAM researchers, and disseminating authoritative information. Information on NCCAM can be obtained from the National Institutes of Health web site: http://www.nccam.nih.gov.

OVERVIEW OF CAM

The field of CAM is large, complex, and diverse. It is estimated that there are over 1800 complementary therapies. Some of these therapies fall within an organized alternative system of care, such as traditional Chinese medicine or Ayurvedic medicine. Others, such as clinical hypnosis, meditation, and massage, are not unique to any one alternative system of care. The list of healing practices encompassed within CAM changes continuously. As research evidence accumulates supporting a particular CAM practice or therapy, it becomes more accepted as a "mainstream" health care practice.

NCCAM has identified five major domains of CAM: alternative medical systems, mind-body interventions, biologically based treatments, manipulative and body-based methods, and energy therapies.

Alternative Medical Systems

Alternative medical systems are complete systems of care that have often evolved independently of and parallel to conventional biomedicine. While each of these systems is unique and distinct, there are commonalities in philosophies of health and illness, relationship to nature, and the role of the community. Examples of alternative medical systems include traditional Oriental medicine, Ayurvedic medicine, naturopathy, homeopathy, and other culturally based or indigenous systems of healing developed by Native American, Tibetan, Hispanic, African, and Aboriginal cultures.

Alternative medical systems have their own theories about the causation of disease and ways to promote health and wellness.

- Traditional Oriental medicine is based on a belief that disease is caused by blockages or imbalances in qi (pronounced chi), or vital energy. Therapeutics such as acupuncture, acupressure, herbal therapies, and qi gong (described below) are believed to improve the flow or balance of qi.
- Ayurvedic medicine, India's traditional system of medicine, is more than 5000 years old. Ayurveda means the "science of life." Therapies are designed to restore the inner harmony of the individual and emphasize care of the mind, body, and spirit. Ayurvedic treatments include diet, exercise, meditation, herbs, massage, and controlled breathing.
- Homeopathy is a western system of care that is based on the belief that very dilute substances or remedies are able to stimulate a healing response. The system is based on the theory that "like cures like." The same substance that in large doses produces the symptoms of an illness, in very dilute doses is believed to cure it. Homeopathic preparations are derived from plants and minerals.
- Naturopathy emerged in the late 19th century in America. The underlying belief is that the body naturally heals itself. Naturopathic practitioners use a wide array of healing practices, including diet and clinical nutrition, homeopathy, acupuncture, herbal medicine, hydrotherapy, spinal and soft-tissue manipulation, and physical therapies, as well as modern conventional practices, such as surgery and drugs.
- Culturally based or indigenous healing practices vary considerably, although many hold in common the use of herbs, healing rituals and ceremonies, and other spiritual practices.

Mind-Body Interventions

Mind-body interventions include clinical hypnosis, guided imagery, biofeedback, meditation, dance, music and art therapies, prayer, and spiritual healing. They are based on an understanding that there is a strong mind-body connection and that our thoughts, feelings, and emotions impact our neurologic and immune systems. Psychoneuroimmunology, the study of the interconnectedness of the mind, nervous system, and immune system, provides a framework for understanding why and how mind-body interventions work.

Biology-Based Therapies

Biologically based therapies include herbal medicine, the use of essential oils (clinical aromatherapy), spe-
cial diets, orthomolecular therapies (high-dose vitamins and use of minerals, such as magnesium), and use of biologic substances, such as shark cartilage and bee pollen.

Herbs are the fastest-growing segment of the pharmaceutical industry. Sold as "dietary supplements," they may be purchased over the counter in health food stores, drugstores, supermarkets, and convenience stores. Although the research evidence is accumulating that demonstrates the therapeutic benefit of some herbs, there continues to be concerns about the lack of standardization of products and product purity.

Manipulative and Body-Based Methods
This domain includes chiropractic medicine, osteopathy, massage, rolfing (structural integration), and cranial-sacral therapy. Each of these approaches is based on manipulation and/or movement of the body.

Energy Therapies
The energy therapy domain includes both biofield therapy and electromagnetic therapy. Biofield therapies, such as therapeutic touch, healing touch, reiki, and qi gong, are intended to affect the energy fields that are believed to surround and penetrate the body. Bioelectromagnetic therapies include the use of magnets and pulsed fields.

Use of CAM Therapies Within Nursing
Use of complementary therapies in nursing extends back to the origins of modern nursing. Florence Nightingale described how the use of various therapies would improve the well-being of patients. For example, she suggested that music could be used to aid the recovery of the sick. Back rubs, a form of massage, were an integral part of all nursing care until recent years. Other therapies that have had wide use in nursing include imagery, prayer, reminiscence, active listening, presence, humor, and biofeedback. More recently, nurses have been leaders in the use of energy therapies, such as therapeutic and healing touch.

A review of nursing journals, particularly clinically focused journals, reveals that nurses have conducted a considerable number of research studies to determine the efficacy of various complementary therapies. Although many of these studies have used small samples and may have other methodologic weaknesses, they provide direction for developing practice guidelines and for conducting future research. Nursing has documented that a number of complementary therapies are an integral part of nursing’s body of knowledge.

Considerable attention has been given to the multitude of complementary therapies that exist. Health professionals sometimes become overwhelmed with the variety and diversity of these therapies. What is critical is attention to the philosophy that underlies the majority of these therapies: holism and harmony. If a nurse approaches the use of complementary therapies as just adding another modality to one’s armamentarium, the true value of complementary therapies is lost. What is needed is for practitioners to become immersed in the holistic, caring philosophy and administer complementary therapies from this perspective. Two therapies that have been used extensively in nursing and that characterize the holistic/caring philosophy are presence (being there for the person) and active listening.

No clear directives are available that prescribe which of the complementary therapies should be taught in schools of nursing or continuing education programs. No health profession or discipline owns specific complementary therapies. An overarching guideline may be that if a therapy that falls within the scope of nursing assists a nurse to accomplish a patient outcome, then the therapy can be used.¹³

The American Holistic Nurses’ Association (AHNA) has developed a position paper on the role of nurses in the practice of complementary and alternative therapies. An excerpt of the position statement succinctly describes nurses’ potential roles and responsibilities:

The AHNA believes that although selected CAM therapies are appropriate interventions for use by nurses, the use of these interventions must be integrated into a comprehensive holistic nursing practice. Practicing within a holistic nursing framework does not imply competency in effectively and safely utilizing CAM therapies and practices. Nurses must be responsible for seeking, when necessary, additional education and experience and demonstrating clinical competency in all interventions used in their nursing practice. A nurse practicing as a therapist of a specific conventional or CAM therapy must have the education, skills and credentials ascribed for that therapy. The nurse also must operate within the legal scope of practice of the nurse’s licensure and jurisdiction.¹⁴

USE OF CAM THERAPIES WITH CARDIOVASCULAR PATIENTS
Patterns of Utilization of CAM Therapies by Patients
Two studies have focused specifically on use of CAM therapies by patients with cardiovascular disease. Whitworth et al.¹⁵ reported that 83% of the patients admitted to the cardiac surgery service at Columbia Presbyterian Medical Center had used at
least one complementary therapy before or after their hospitalization. The most commonly reported therapy was prayer (51%), followed by vitamin supplementation (37%), chiropractic (26%), and massage (20%). Only 14% of patients surveyed indicated that they did not feel that complementary approaches to healing were beneficial (i.e., help fight illness). Ai et al. completed a survey of 151 patients 1 year following coronary artery bypass graft (CABG) surgery. The survey examined both the use of complementary therapies post-CABG surgery and the relationship of use to psychological recovery, as measured by patient report. Eighty-five percent of patients used complementary therapies. Prayer was the most frequently reported therapy used (67.5%), followed by exercise (45.7%) and lifestyle modification (9.9%). Fewer than 5% of patients reported using chiropractic, self-help groups, megavitamin therapy, massage, weight loss programs, clergy visits, imagery, relaxation techniques, energy healing, biofeedback, homeopathy, acupuncture, or folk remedies. Of significance was the finding that patients who used complementary therapies, particularly prayer and exercise, had better psychological recovery (less depression or general distress).

**Imagery and Hypnosis**

Imagery is the use of the imagination to stimulate one or all of the senses. It is incorporated within many relaxation techniques, including hypnosis, biofeedback, autogenic training, and progressive muscle relaxation. Imagery is used extensively within the shamanic healing rituals that are part of many culturally based healing traditions. As summarized in a review article on use of mind-body therapies in the treatment of cardiovascular disease, both laboratory studies and clinical trials have demonstrated that these techniques are effective in reducing stress, restructuring behaviors, and reducing heart rate reactivity, blood pressure, and resting heart rate. Two studies will be highlighted that focus on practical applications of imagery/hypnosis in the care of cardiovascular patients.

Lang et al. examined the use of a self-hypnotic relaxation technique during interventional radiologic procedures. Compared to a control group, patients who were trained in using a self-hypnotic relaxation technique used fewer drugs, reported less pain, and had fewer episodes of oxygen desaturation and hemodynamic instability requiring interventions of their procedures. Self-hypnosis was also the intervention used in a prospective, randomized trial of patients undergoing CABG surgery. Patients who were taught self-hypnosis prior to surgery experienced less pain, required fewer pain medications, and were significantly more relaxed.

**Meditation**

In the late 1960s, Harvard cardiologist Herbert Benson studied practitioners of transcendental meditation. He found that meditation evokes a state of the autonomic nervous system that is correlated with a reduction in stress reactivity, as measured by lowering of the heart rate, blood pressure, pulse rate, respiration rate, and levels of the stress hormone plasma cortisol. Over time, Benson described this state as the "relaxation response"—a state that evokes a bodily calm, as opposed to the fight or flight response. Leserman et al. found that in patients undergoing cardiac surgery, the relaxation response resulted in a lower incidence of postoperative supraventricular tachycardia and a patient-reported decrease in tension and anger. Meditation has also been reported to be useful in patients exhibiting signs and symptoms of cardiovascular disease. Zamarra et al. found a reduction in ischemia and improved exercise tolerance in patients who had meditated for 8 months, compared to a control group. In a randomized, controlled clinical trial evaluating the effects of transcendental meditation on hypertensive African Americans, Castilla-Richmond et al. found that transcendental meditation was associated with reduced carotid atherosclerosis.

**Yoga**

Yoga is an East Indian practice that includes gentle stretching exercises, breath control, and meditation. The word yoga comes from the Sanskrit word *yuj*, which means to unite. The practice of yoga has been documented to have numerous beneficial cardiovascular effects. Pandya and Vyas have summarized physiologic changes associated with yoga training. These changes include decreased sympathetic tone, improved control of sympathetic function, decreased peripheral vascular resistance, improved cardiac stroke output, reduction in blood pressure, reduced heart rate, and improved cardiovascular endurance. In a feasibility study in patients undergoing interventional cardiology procedures, Appels et al. found that breathing exercise therapy after percutaneous transluminal angioplasty reduced exhaustion, hostility, and apprehension. Following yoga training, improvements in cardiovascular function (increased endurance and aerobic power) have been documented.

**Tai Chi**

Tai chi chaun (TCC), or tai chi, is a centuries-old Chinese practice that has evolved from a martial arts
form. Hong et al.\(^{27}\) describe TCC as a series of individual movements, linked together in a continuous manner, that flow smoothly from one movement to another. Deep breathing and mental concentration are also incorporated into TCC. There are numerous forms of TCC involving distinctive postures and movement sequences, although they all follow the same basic principles. TCC is especially appropriate for older adults, as the movements are slow and controlled and do not involve impact. A study by Hong et al.\(^{27}\) evaluated the impact of long-term TCC practice on cardiovascular fitness of adults over the age of 65. Compared to a control group, adults who practiced TCC for over 10 years had improved balance, flexibility, and cardiovascular fitness.

**Faith and Prayer**

Oxman et al.\(^{28}\) conducted a study to evaluate the impact of religion and religious beliefs on patient outcomes following cardiac surgery. They found that lack of participation in groups and absence of strength and comfort in religion were independently related to risk of death during the 6-month period following cardiac surgery in 232 patients aged 55 and older. Patients who received no comfort from religion were over three times more likely to die after heart surgery.

Research has also been conducted on the impact of intercessory prayer on patient outcomes. Byrd\(^{29}\) investigated the effects of intercessory prayer for 383 patients admitted to the coronary care unit (CCU) of San Francisco General Hospital in a randomized, controlled clinical trial. Patients who were prayed for were compared with a control group. Patients in the treatment group were less likely to require antibiotics and less likely to develop pulmonary edema, and fewer patients in the prayed-for group died (although this difference was not statistically significant). When the study was published in 1988, it was quite controversial. Questions were raised about the rigor of the methodology as well as the feasibility and plausibility of prayer research.

Harris et al.\(^{30}\) conducted a follow-up trial in 990 patients admitted to a CCU in an attempt to determine whether remote intercessory prayer would impact hospitalized cardiac patients. The outcome measure was a CCU score based on the patient's medical course from admission to hospital discharge. While lengths of CCU and hospital stays were not different, intercessory prayer was associated with lower (better) CCU course scores. The investigators concluded that prayer may be an effective adjunct to standard medical care.

**Music**

Several studies have focused on the use of music to reduce stress in cardiovascular or critically ill patients. Guzzetta,\(^{31}\) in a randomized, controlled trial of patients in a CCU, found that patients assigned to music therapy or a relaxation intervention exhibited fewer physiologic indicators of stress and had a lower incidence of cardiac complications than patients in a control group. Bolwerk\(^{32}\) also found that music may reduce anxiety in CCU patients.

**Exercise**

Exercise has long been understood to be the core of any cardiac rehabilitation program. A recent Cochrane systematic review\(^{33}\) examined the effect on patient outcomes of exercise alone or exercise within a comprehensive cardiac rehabilitation program. Meta-analysis of studies involving over 8000 patients confirmed that exercise-based cardiac rehabilitation is effective in reducing cardiac deaths. It was not clear from this review whether exercise alone or a comprehensive intervention is more beneficial.

**Diet and Use of Dietary Supplements**

The importance of reducing dietary fat was also affirmed in a Cochrane systematic review conducted by Hooper et al.\(^{34}\) Twenty-seven studies involving 30,901 person-years were used to assess the effect of reduction or modification of dietary fats on total and cardiovascular morbidity. There was no significant effect from the dietary changes on total mortality, but there was a significant effect on the rate of cardiovascular events. The investigators concluded that patients with any risk of cardiovascular disease should continue to include permanent reduction of dietary saturated fat and partial replacement of unsaturated fat into their lifestyle regimen.

Data are less clear on the role of natural therapies in reducing cholesterol levels and subsequent heart disease. Heber\(^{35}\) notes that antioxidants, phytosterols, garlic, niacin, and Cholestin-3 are all examples of therapies currently being investigated that work best in conjunction with a lifestyle that includes a healthy diet, stress reduction, and exercise. While natural alternatives may be found to be safe and less expensive than prescription cholesterol-lowering drugs for the majority of healthy and at-risk individuals, Heber acknowledges that more research is needed and that potent prescription drugs may well be indicated for patients with advanced heart disease.

One recent study\(^{36}\) on garlic demonstrated promising results. A 4-year clinical trial in 152 patients with advanced atherosclerotic plaque showed that garlic supplementation reduced the increase in atherosclerotic plaque by 6%–18% and in some patients caused a slight reduction in plaque volume. This study
and others suggest that nutritional supplements may have an important role in both preventing and treating heart disease.

DEVELOPING A CARDIOVASCULAR PROGRAM THAT INTEGRATES BIOMEDICAL AND COMPLEMENTARY APPROACHES

Health systems, patient care units, and care providers committed to integrating complementary therapies into the care of cardiovascular patients face several decisions:

- What therapies or modalities should be offered?
- At what point or points in the care continuum should the services be offered?
- Who will provide these services?
- How will issues of access, financing, and reimbursement be addressed?
- What will an integrated system look like? Can Western providers shift to being able to understand/incorporate a different paradigm and collaboratively approach patients and other providers?

Given the strong consumer demand for complementary therapies and the growing body of research demonstrating both safety and efficacy, many nurses and health systems want to respond to both care and market pressures by offering services. There are two principles that should guide any planning or decision making:

- Patients want care that is attentive to the whole person—the body, mind, and spirit. More important than offering a particular complementary modality is a focus on addressing spiritual, emotional, and psychological needs as well as physical needs. If complementary therapies are offered outside of a context of caring for the whole person, it is less clear what value they will hold for patients, families, and care providers.
- Patients want to assume more personal responsibility for their health and wellness. A major emphasis of any effort should be on helping patients make informed choices and acquire the information and skills they need to assume more personal responsibility for their care.

What Therapies and When?

Information gleaned from research will help guide decision-making in this area. There are some modalities that are most appropriate for overall prevention and treatment of cardiovascular disease. Programs that address lifestyle interventions (diet, exercise, group support, and stress management) in combination or individually are ideally offered in non-acute care settings, such as clinics, schools, churches, or community centers. Nurses practicing in these settings may be teaching yoga, mindfulness-based stress reduction, or TCC.

Pre- and postsurgery or procedure, there is strong evidence that both the quality of the experience and physiological outcomes may be enhanced if patients learn to use skills of imagery, hypnosis, or relaxation techniques. Programs to teach these skills may be offered to patients in either an ambulatory or acute care setting. Regardless of where or how they are taught, nurses practicing in acute care settings need to be aware of how to support and reinforce patients’ use of these stress management techniques.

In the acute care setting, there are many complementary therapies that may be offered to promote patient comfort and well-being, including therapeutic or healing touch, massage, music, and aromatherapy. Increasingly, acute care settings are focusing on how to create healing environments. This requires attention to the care that is provided as well as the physical environment.

Who Will Provide Complementary Therapies?

Many health care providers find providing complementary therapies both renewing and fulfilling. Nurses are just as frustrated and disenfranchised as patients when resources are not available to provide care or when care is provided in a reductionistic manner. Careful consideration needs to be paid to who will provide complementary therapies. Will they be provided by staff already caring for patients and integrated into the overall plan of care, or will new or additional staff be hired? There are many issues that need to be considered, including the scope of nursing practice and the skills of nurses currently on the staff, as well as their interest in and readiness for learning. States vary in their licensure laws, and institutions have mechanisms for credentialing staff. Some therapies, such as therapeutic and healing touch, are taught in schools of nursing and are widely understood to be within the domain of nursing practice. Advanced training or certification may be required to practice other complementary therapies, such as clinical hypnosis or biofeedback. The AHNA endorses certificate programs in several areas including healing touch and imagery.

Access, Financing, and Reimbursement

When complementary therapies are offered within acute care settings, there is minimal opportunity to secure reimbursement for services, given the present reimbursement structure. It is thus critically important that we begin to document how the use of complementary therapies may impact the course of a patients’ hospitalization. For example, if patients
are less agitated, will that affect medications required, the length of time that patients need to be in intensive care units, and the overall length of stay? If the cost of offering complementary therapies needs to be absorbed into the overall cost of care per unit of hospitalization or service, the "value added" needs to be documented and understood.

On an outpatient basis, most complementary therapies are paid for out of pocket. Reimbursement varies considerably, depending on the health plan and the type of complementary therapy. Third-party payers reimburse only about 20% of complementary therapies at this time. Reimbursement is directly related to research evidence. As evidence accumulates that a therapy is safe and efficacious, it is more likely to be reimbursed. Acupuncture, for example, is now often reimbursed for patients with chronic pain.

The overall lack of reimbursement for complementary therapies significantly influences who can access these services. Access is largely limited to people who can afford to pay for these services out of pocket.

SUMMARY

It is critical that nurses be knowledgeable about complementary therapies. Knowledge is needed so that nurses can assess patients' use of complementary therapies, answer patients' questions about therapies, guide them in seeking additional information or a referral for a particular therapy, and personally administer one or more therapies. Concern exists that many patients are using complementary therapies and not sharing this information with their health care providers; many patients are reluctant to share this information. Thus, it is very important that health care providers create an environment in which patients feel comfortable being open and honest.

The field of complementary and alternative medicine is complex, diverse, and growing. It is impossible for any one person to be the repository of information about all of the therapies. Information about good resource sites, such as NCCAM and the AHNA, will assist nurses in keeping abreast of new research findings that can guide their care of patients.

Complementary therapies have been a key component of nursing practice—both the administration of specific therapies and the underlying holistic philosophy. With the growing interest in and acceptance of complementary therapies in the provision of integrated health care, nurses are in a prime position to be leaders in the incorporation of these therapies in specific patient populations, such as cardiovascular patients.

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