When Less Is Better: A Comparison of Bach® Flower Remedies and Homeopathy

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INTRODUCTION

The safety and effectiveness of ingestible medicinal substances for healing and health maintenance are being researched on several fronts (1, 2). Special attention is being focused on potential hazards in the use of unregulated complementary and alternative medicine (CAM) treatments, because as Bayles (3) points out: “Complementary and Alternative Medicine now constitutes the fastest growing sector of the American health care system.” As a result of this trend, many CAM methods are now being rigorously tested in carefully controlled clinical trials.

Many of the medications applied in CAM modalities are labeled “natural” (derived from sources in nature and minimally processed without artificial additives such as colorings or chemical preservatives) and/or “organic” (produced without fertilizers or pesticides and free of toxins or residues), rather than synthetic or technologically modified. Medicinal plants, therapeutic animal products, vitamins and minerals, and various health foods have all been successfully used in the treatment of diseases, injuries, and other adverse conditions (4–7).

In contrast to the typically strict prescription regimens assigned to conventional allopathic medications, natural medicines are sometimes prescribed in variable dosage quantities and schedules. For example, the amount of raw material used in medicinal plant preparations differs considerably across cultures and individual healers, even in the treatment of the same condition such as dental pain or high blood pressure (8, 9). The minimum daily requirement and recommended daily allowance of essential nutrients are likewise characterized by variability across published sources. For example, recommendations for the optimal intake of vitamin C range from 30 mg to 10,000 mg per day (10). “Megadoses” of various natural medications and nutrients have been tested as well, sometimes leading to harmful outcomes including poisonings and deaths, such as those associated with Ephedra species products and coca plant (Erythroxylon coca) extracts. Another distinguishing factor between natural and allopathic medicines is that the latter are often highly concentrated preparations of one or two active ingredients (which also contributes to their greater propensity for toxicity), whereas natural medicines contain any number of ingredients in less concentrated forms that generally produce milder and more subtle therapeutic effects (4).
Although the majority of medications, whether natural or synthetic, are often prescribed in sizeable and/or repeated doses to quickly achieve and sustain their desired therapeutic effects, a few are recommended in highly diluted or infinitely small doses for maximum results. Homeopathy and Bach Flower Remedies (BFRs) are two such healing systems that embody the “smaller-is-better” dosage principle. Like many other natural/alternative treatments, BFRs are sold without prescriptions in health food stores, pharmacies, and supermarkets. Some homeopathic medicines require prescriptions, while others are sold over-the-counter. By using original data and previously published findings, in the present article we compare these two modalities with regard to indications, dosage philosophies, associated procedures, reported outcomes, safety profiles, and the possible operation of the placebo effect.

**BACH® FLOWER REMEDIES**

The BFR—also known as Bach Flower Essence—healing system was originally developed by British homeopath and physician Edward Bach, and his work is currently carried out by the Dr. Edward Bach Centre in England (www.BachCentre.com). Pioneering books he authored in 1925 and 1931 (11, 12) provided a ground-breaking framework for the analysis of psychological and emotional correlates of physical diseases. Bach experimented with the highly diluted derivatives of 37 species of wildflowers obtained by boiling the flowering sprays, leaves, and twigs in natural spring water (the “boiling method”) or placing flower heads and spring water in direct sunlight (the “sun method”). The boiling method involves filtering the remaining liquid. Bach practitioners believe that in both procedures the water captures the “essence” (also referred to as “vibratory imprint” or “energetic signature/blueprint”) of the flower and “potentizes” its innate healing power. In a 1940 book Bach’s assistant describes the spring water as becoming “magnetized with power” (13). The resulting plant-water mixture, combined with an alcohol-based preservative, is called the “mother tincture.” The final diluted over-the-counter products—labeled “flower essences” and “flower remedies”—are administered with specific dosage schedules orally in drop form or topically in liquid or cream form for applications to pulse points, as skin compresses, and as whole-body baths. The over-the-counter drops can be placed directly onto the tongue, put in a glass of water and sipped frequently, diluted in a mixing bottle, or sprayed over the head and body with an atomizer. Dosage amounts and schedules do not vary according to the age, gender, or weight of the recipients.

Bach practitioners believe that BFRs exert a positive effect on the human energy field, thereby correcting emotional imbalances. BFRs are taken for specific short-term emotional stresses (e.g., essence of mustard plant flowers for sudden unexplained bouts of depression or melancholia and essence of pine tree flowers for guilt), as well as for managing or controlling long-term emotional discomforts or personality imbalances (e.g., essence of walnut tree flowers for protection from ongoing negative influences and essence of white chestnut tree flowers to help eliminate persistent worrying or repetitive unwanted thoughts). BFRs are also used by consumers as a prophylaxis for anxiety and stress. BFRs are described as nontoxic, and Bach specialists note they produce no side-effects. The remedies have been safely and successfully used with children, plants, and pets (including dogs, cats, fish, reptiles, birds, rabbits, and horses), and practitioners indicate that they do not interact with any collateral medications (14–19). Although there have not been any extensive clinical trials demonstrating their safety, an official representative of the BFR bottling and distribution company has stated that records dating back to 1970 indicate “…there have been no reports of serious adverse effects directly related to Bach® Flower Essences or negative interactions with other medicinal products” (20).

The quality control of official BFR products is regulated in the United Kingdom by the Medicines Control Agency, and they are accepted for sale in the United States by the U.S. Food and Drug Administration. A number of other competing companies offer flower essence products that are not endorsed by the Bach Centre (21). One such company is based in Hereford, England, which produces “Five Flower Remedy” (Healing Herbs Ltd.: www.healingherbs.co.uk), and another is located in Nevada City, California (Flower Essence Service: www.fesflowers.com). A manufacturer of flower essences in Winona Lake, Indiana, called Traditional Flower Remedies Inc. carries a variety of products, including “Calming Essence™,” available at www.traditionalflowers.com. Bailey Essences (www.baileyesences.com) are a set of 45 flower essences developed by a company in Yorkshire, England. The New Millennium company in New Zealand (www.nmessences.com) offers a range of flower essence and essential oil products.

In the BFR system a plant’s unlocked energy is considered as therapeutically important as its biodynamic chemical components. BFRs are typically indicated for stress-related emotional disorders ranging from chronic depression and personality imbalances to extreme panic. The essences of particular flowers are prescribed for such conditions as fear
of the unknown (aspen), uncontrollable emotional outbursts (cherry plum), absent-mindedness (clematis), irritability (impatiens), nervousness (mimulus), physical and mental fatigue or exhaustion (olive), nightmares (rock rose), debilitating bereavement or emotional shock and trauma (Star of Bethlehem), indecisiveness and mood swings (scleranthus), excessive worrying about loved ones (red chestnut), unbearable anguish and despair (sweet chestnut), and lack of self-confidence (larch)(19, 22, 23).

BFRs have also been administered for emotionally based and stress-related physical disorders. On the basis of case study reports, anecdotal information, and a handful of scientific clinical trials, several authors have suggested that the following physical conditions can be successfully managed with flower essence formulas: back pain, hypertension, attention-deficit hyperactivity disorder, migraines, drug and alcohol addictions, eczema, temporal-mandibular joint dysfunction, motion sickness, allergies, insomnia, asthma, bed-wetting, difficult teething, and stuttering(17, 18, 22, 24–27). In a recent review of 384 case studies, investigators found that BFRs were effective for pain management in 88% of all subjects tested(28). According to Sirkin(19), “By offering relief from the burden of negativity, the essences in effect can work to prevent stress-induced physiological breakdown.”

Rescue® Remedy is a BFR combination liquid formula consisting of five flower essences—cherry plum (Prunus cerasifera), clematis (Clematis vitalba), impatiens (Impatiens glandulifera), Star of Bethlehem (Ornithogalum umbellatum), and rock rose (Helianthemum nummularium)—which together are believed to act synergistically to reduce or eliminate severe stress. In the years since its creation in the 1930s, Rescue® Remedy has been reported to help users manage emergencies and control acute distress resulting from fear, panic, and emotional trauma and shock (29–31). It has been recommended for such situations as air travel, school examinations, job interviews, auto accidents, public speaking, and doctor/dental appointments.

Rescue® Remedy Cream is applied to pulse points for stress relief or elsewhere on the skin to aid the healing of burns, insect bites, sprains and minor lacerations. Rescue® Remedy liquid has also been successfully used with pets to help control fear of loud noises, separation anxiety, and trauma caused by mistreatment or loss of a companion (17, 18, 22, 23). Figures 1 to 5 illustrate the five flowers used in the preparation of Rescue® Remedy.

A number of investigations have been conducted on the potential effectiveness of Rescue® Remedy and other Bach products. The present authors carried out a double-blind clinical trial in which 53 individuals who ingested several measured standard doses of Rescue® Remedy were compared with 58 control subjects who received placebo preparations with respect to responses on a standardized questionnaire eliciting indicators of stress levels. Although the placebo effect appeared to operate in both groups, Rescue® Remedy significantly outperformed the placebo in reducing stress in the subsample characterized from test scores as experiencing a “high” level of anxiety (20). The results of this and similar studies are summarized in Table 1 (16, 19, 26–28, 32–34).

**HOMEOPATHY**

The term “homeopathy” is a combination of two Greek words: homoios (meaning “similar”) and pathos (“suffering”). Homeopathy is a holistic medical system designed to stimulate the human body’s own internal healing mechanisms through the administration of naturally occurring remedies. Homeopathy was first established by German physician
Samuel Hahnemann in 1790. Hahnemann’s major documentary work *The Organon of the Healing Art* was published in 1810, and between 1811 and 1821 his 6-volume set *Materia Medica Pura* appeared.

Homeopathy is a healing method that uses highly diluted but therapeutically active “micro-doses” of biochemically neutral, toxic, or even poisonous substances derived from plants, animals, and minerals to activate the natural defense mechanisms of the body. Homeopathic remedies are based on the principle of the “Law of Similars” (*similia similibus curantur*, or “like treats like”), which postulates that substances that produce negative disease symptoms in a healthy person can be applied therapeutically in minute dosages to stimulate (“aggravate”) a sick person’s own internal curing mechanisms. A similar theory was proposed by the Greek physician Hippocrates in the fourth century B.C. (35). A classic example is the use of the quinine-containing bark of the cinchona tree (*Cinchona officinalis*) to treat a fever. Quinine causes fever and chills in a healthy person, but in highly diluted form it cures these symptoms in a malaria patient. In a similar scenario, digitalis can cause arrhythmia in large doses or cure it in homeopathic doses (36).

The multi-volume *Homeopathic Pharmacopoeia Repertory*, an index of disease symptoms and their suggested remedies, was originally developed in the early 1800s by Hahnemann and continues to be augmented and revised by homeopathic specialists. The 1989 edition of *The Homeopathic Pharmacopoeia of the United States* lists more than 2000 remedies and is the official standard reference for preparations and prescriptions. The various substances that comprise homeopathic medicines have been determined by the “Law of Provings,”
TABLE 1. Clinical results of Bach® Flower Remedy (BFR) research

<table>
<thead>
<tr>
<th>Reference</th>
<th>Study design</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Sirkin25 (2001)</td>
<td>Treatment of fibromyalgia patient with six individual Bach remedies plus Rescue® Remedy in a clinical case study trial</td>
<td>Elimination of headaches and neck pain, improved sleep, increased energy, discontinued use of analgesics, anti-depressants, and tranquilizers</td>
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<tr>
<td>Walach et al.13 (2001)</td>
<td>BFRs were compared with placebos in 61 subjects with respect to scores on the Test Anxiety Inventory (TAI)</td>
<td>No significant differences found between treatment and placebo groups on test scores</td>
</tr>
<tr>
<td>Mehta26 (2002)</td>
<td>BFRs and placebos were randomly assigned to 10 ADHD patients ages 5–12 in a clinical case study trial</td>
<td>BFRs were more efficacious than placebos in reducing inattention and hyperactivity as measured by the Childhood Attention Profile (CAP) and Columbia Impairment Scale</td>
</tr>
<tr>
<td>Armstrong and Ernst14 (2002)</td>
<td>Double-blind study of “Five Flower” Remedy compared with placebos in 45 subjects experiencing anxiety as measured by the Spielberger Anxiety Inventory</td>
<td>No significant differences found between or within groups with respect to post-test stress levels</td>
</tr>
<tr>
<td>Mali16 (2003)</td>
<td>Administration of combination BFR remedy formulas to two subjects experiencing chronic major depression and undergoing psychotherapy</td>
<td>Significant decrease in frequency and duration of symptoms, as well as renewed social interest and increased pleasurable feelings</td>
</tr>
<tr>
<td>Pintov et al.27 (2005)</td>
<td>Prospective double-blind study of BFRs versus placebo administration to 20 children ages 7–11 diagnosed with attention deficit-hyperactivity disorder</td>
<td>BFRs and placebos showed no significant differences with respect to test performance after 3 months</td>
</tr>
<tr>
<td>Howard28 (2007)</td>
<td>Retrospective meta-analysis of case studies of 384 subjects ages 7–72 provided BFRs or placebos for pain relief</td>
<td>Pain relief and reduction of negative emotions reported by BFR sub-sample at a greater frequency than placebo group</td>
</tr>
<tr>
<td>Halberstein et al.20 (2007)</td>
<td>Double-blind clinical trial of BFR Rescue® Remedy in 111 subjects ages 18–49 experiencing anxiety as measured by the Spielberger Anxiety Inventory</td>
<td>Significant reduction of acute anxiety in sub-sample receiving Rescue® Remedy compared with placebo</td>
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which involves the painstaking testing of individual materials for their potential healing effects (37).

Some of the plant materials used to produce homeopathic medicines include herbs (e.g., comfrey), spices (e.g., cayenne pepper), resins (e.g., amber), and various poisonous mushrooms. Mineral sources include metals (e.g., lead), salts (e.g., calcium sulfate), acids (e.g., hydrochloric), and elemental substances (e.g., sulfur, iron and mercury). Animal-based homeopathic medicines are derived from venoms (e.g., snake poisons), secretions (e.g., squid and cuttlefish inks), various glandular and tissue extracts (e.g., hormones), and disease by-products (e.g., pus obtained from an abscess) (38).

One of the most frequently used sources of homeopathic medicines is the “European arnica” plant (Arnica montana), also known as “leopard’s bane” and “mountain tobacco.” Native to 18 European countries, it has been applied homeopathically in the management of the symptoms of a wide range of conditions including cancer, heart disease, urinary disorders, fevers, influenza, and gastrointestinal problems. It has also been used to minimize pain, bleeding, and swelling after surgery (39). Among the 10 most prescribed diluted derivatives of plant species in the homeopathic repertory are arsenic (Arsenic album) for insomnia and nervous disorders, strychnine (Strychnos nux vomica) for indigestion and headaches, poison ivy (Rhus toxicodendron) for skin irritations, and deadly nightshade (Atropa belladonna) for fevers and inflammations. “Curare” (Chondrodendron tomentosum), historically used as a poison applied to spear points and arrowheads, has been employed homeopathically as a diuretic, febrifuge, and anesthetic.

Homeopathic remedies have also been derived from other natural sources. “Apis,” a honeybee derivative, is prescribed to reduce swelling, pain, and allergic reactions to stings by bees, wasps, hornets or scorpions. “Ferrum phos- phoricum,” made from iron phosphate, is recommended by homeopathic physicians for fever, sore throat, and other cold symptoms (38, 40).

Homeopathic remedies are produced by repeated, cumulative serial dilutions of the aforementioned and other toxic and nontoxic substances mixed with pure water and shaken vigorously after each dilution — a process termed “succussion.” The homeopathic “law of minimum dose” (also known as the “law of infinitesimals”) states that the greater the dilution of a homeopathic medicine, the more potent is the resulting mixture in its healing effects on the body. According to homeopathic principles, only the “memory” or “vibration” of the original substances remains in the water in the form of electromagnetic frequencies after numerous cumulative dilutions. The resulting solution is considered to be capable of enhancing the body’s own defense mechanisms and self-healing capacity against a disease or physiological imbalance in a similar fashion as a vaccination or allergy immunization (41–43).

Traditional Homeopathy’s “law of single remedy” stipulates that the practitioner must choose the one single medication that most appropriately “fits” the patient’s symptom
profile and healing plan (36, 38, 44). If the selected remedy proves to be ineffective, alternative preparations are generally tested or administered individually, although in recent years some practitioners have experimented with combining multiple remedies (45). The homeopathic pain-reliever called “Traumeel,” for example, contains blended ingredients derived from five different plants (46).

Homeopathic treatments have been credited with benefitting patients with the following conditions: allergies, arthritis, asthma, constipation, respiratory and ear infections, dysmenorrhea, digestive disorders including food poisoning, insomnia, sinusitis, urinary tract infections, motion sickness, insect stings/bites, incontinence, headaches, eczema, influenza, drug and alcohol overdose, minor physical injuries such as sprains, hypertension, psychological disorders, and a variety of other acute and chronic health conditions (35, 40, 46).

The effectiveness of homeopathic treatments has been extensively investigated for many years through individual case studies, clinical trials, and double-blind experiments. The results of this research have been mixed. A 1991 review of 105 controlled trials of homeopathy protocols “of variable quality” conducted world-wide discovered that 81 (77%) produced positive results, whereas 24 (23%) yielded no statistically significant positive outcomes. The authors note that 26 of
the trials involved the testing of combinations of homeopathic substances rather than single medications (45). A later meta-analysis evaluated the results of 19 review articles covering a total of 509 randomized and nonrandomized trials of homeopathic treatments. Less than one half of the examined studies produced statistically significant results in favor of homeopathy (47). After reviewing a large number of well-controlled scientific investigations, Freeman (48) concluded that homeopathic treatments show promise for the following conditions: migraines and other chronic pain syndromes, pollen-induced allergies, asthma, chronic otitis media, fibromyalgia, influenza, chronic fatigue, rheumatoid arthritis, and childhood diarrhea. The latter author also noted positive results in homeopathic treatments for hepatitis B and traumatic brain injury.

The present writers surveyed the literature for more recent double-blind, placebo-controlled scientific studies of homeopathic treatments. The results of 17 such investigations with substantial sample sizes are compared in Table 2 (49–65). The publications exhibit a nearly even split between statistically significant (47%) and nonsignificant (53%) differences in the outcomes of homeopathic therapies versus placebos.

Some adverse side-effects have been reported with homeopathic medications. In reporting on the outcomes of 335 consecutive treatments at a homeopathic clinic in Italy, Endrizzii et al. (66) point out that 2.7% of the patients suffered unfavorable negative reactions. The authors concluded that “Adverse events to homeopathic drugs exist and are distinguishable from homeopathic aggravation.” In a recent internet article Baum and Ernst (67) go further and criticize “…the overtly false and regressive concepts of homeopathy” and conclude that “The totality of the evidence from 200 years of inquiry remain unconvincing as to homeopathy’s efficacy.” The latter authors believe that any successful outcomes of homeopathy are actually the result of the placebo effect or the action of concurrently administered medications.

### Comparing the Modalities

A comparison of traditional homeopathy and the homeopathic-like BFRs provides an instructive example of the evolutionary diversification of historically related complementary health care modalities. The founder of the Bach remedies was a practicing conventional homeopathic physician who integrated basic and modified homeopathic principles into a newer method that features a much smaller set of 38 preparations that focus upon mental imbalances. Today the labels on the BFR containers in the United States still say “a homeopathic remedy” because of the inclusion of the flower species in the Homeopathic Pharmacopoeia of the United States. Formerly listed by the Food and Drug Administration (FDA) as nutritional supplements, BFRs are now FDA approved as homeopathic medicines, and they continue to be sold without a prescription or governmental pharmaceutical regulation in health food stores and supermarkets. This is a significant revision in BFR status because, as Oelles (68) points out, “Unlike pharmaceutical drugs, nutritional supplements do not have to be approved by the FDA. Instead,
supplement makers agree to only use ingredients already being used in other dietary supplements.” In contrast to the prescription homeopathic medicines, the BFRs and nonprescription homeopathic medications are not required to meet any specific pharmaceutical standard, and the FDA accepts the over-the-counter sale of both in the United States. By the same token, the use of vitamins, minerals, animal parts and other nutritional elements as medicines is an ancient, and generally unregulated, cross-cultural practice that is increasing in popularity today (5, 69–72).

Basic characteristics of homeopathy and BFR therapy are compared in Table 3. Both methods use diluted preparations derived from a concentrated mixture of natural materials called the “mother tincture.” The healing power of both systems is considered to be primarily energetic, and each features medications which may produce favorable biochemical and/or psychological changes.

Although the majority of modern biomedicines exhibit increased effects with higher dosages or concentrations, minute amounts of various bioactive substances can produce substantial bodily changes. For example, severe and even fatal allergic reactions have been recorded in susceptible subjects consuming very small quantities of peanut protein products, sometimes requiring emergency treatment and management with epinephrine injections and oral antihistamines (73). A number of hypertension medications produce substantial physiological effects in low dosage for some patients, whereas other individuals may require four to five times as much to experience the same results. Furthermore, like other medications, a blood pressure drug’s potency is influenced by how quickly it reaches the target organ and its rate of metabolism by the liver and kidneys (74). Another study (75) has also shown that miniscule amounts of synthetic medications can lead to major benefits, or conversely to serious side-effects, in young pediatric patients. In addition, medicinal plant extracts are typically diluted and boiled to release and enhance their bioactive phytochemicals while simultaneously reducing their toxicity (4, 8, 9).

In addition, positive healing reactions from extremely small amounts of “active” energetic ingredients in homeopathic and BFR preparations may result in the direct or secondary activation of the immune system by these substances. According to the National Center For Homeopathy in Alexandria, Virginia (76), “Homeopathy is recommended as an important way of bolstering one’s immune system.” A similar principle also applies to one of the historically successful approaches to allergy desensitization. By exposing patients to small doses of allergens, it is possible to gradually reduce the severity of their future allergic reactions to the same materials (36).

The concept of flexible dosages tailored to individual patients, found in both homeopathy and BFR therapy, is similar to the conventional allopathic practice of assigning unique titrated dosages of medicines in accordance with the recipient’s age or body weight. The variable outcomes of controlled clinical investigations of both modalities point to the necessity of further research on the extent of their actual and potential degrees of potency.

The majority of the controlled trials of BFR therapy and Homeopathy suggest that the placebo effect operates to a significant degree in both modalities. This finding is not surprising, considering the substantial rates of successful healing that have been attributed to placebos in both conventional biomedical and alternative/complementary health care treatments (77–85). As early as 1953 an investigation revealed that 32% to 40% of sampled postoperative surgical patients reported significant pain relief with placebos alone (86).

BFR therapy and homeopathy modalities differ in professional training programs and credentials. Qualified BFR practitioners are placed on an international register maintained by The Dr. Edward Bach Foundation in England after the completion of a set number of hours of standardized education. Registered practitioners with additional advanced training are authorized to conduct instructional seminars for consumers and to educate health product retailers. Homeopathic colleges, on the other hand, vary in educational programs and degrees offered. Hahmemann College, originally founded in 1835 in Allentown, Pennsylvania, and currently headquartered in Ottawa, Canada, offers a DPh (Dynamic Philosophy) degree in a 3-year program and an honors degree (DHPH) requiring an extra year of training (87). However, American University of Complementary Medicine (88) in Beverly Hills, California, offers a PhD in Homeopathic Medicine in addition to its basic Diploma in Homeopathic Medicine (DHM). Bailey-Lloyd (89) describes the Doctor of Homeopathy degree program (DHom) available at a number of natural health-oriented colleges in the United States and Canada.

As seen in Table 3, and as noted in the recent comparative study by van Haselen (44), homeopathy and BFR therapy vary with respect to remedy preparation methods and dilution formulas, remedy combinations, modes of application and administration, number and types of medicinal source materials, dosage schedules and limitations, potential toxicity, and the possibility of overdosing or side effects. Usage with animals and plants is more restricted in homeopathy. The latter author points out that the use of conventional drugs, coffee, certain foods, and various other ingestible materials may neutralize homeopathic remedies, but this is not the case with BFRs (44).

Further research on both homeopathy and BFR therapy is warranted to further clarify the mechanisms of action, potential health benefits, and possible limitations of both modalities. Additional double-blind trials would be especially recommended to narrow down the list of health
problems that are significantly benefited by these and other energy-based healing systems.

It is well known that stress and anxiety often produce or exacerbate physical symptoms (90). Because it has recently been estimated that stress-related disorders account for 70% to 90% of all patient visits to primary health-care providers (91), the continued testing and validation of safe and effective complementary interventions will be even more important in the future.

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