

BIOFIELD-BASED THERAPIES: A SYSTEMATIC REVIEW OF PHYSIOLOGICAL EFFECTS ON PRACTITIONERS DURING HEALING

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Background: Several recent reviews have reached guardedly positive conclusions about the effectiveness of biofield therapies in healthcare.^{1,2} These studies mainly involved randomized controlled trials to determine changes in condition-related outcome measures, but few addressed the biological basis of these effects.

Study Objective and Rationale: We performed a systematic review of studies designed to examine whether biofield therapists undergo physiological changes as they enter the healing state. If reproducible changes can be identified, they may serve as markers to reveal events that correlate with the healing process.

Methods: Databases were searched for controlled or non-controlled studies of biofield therapies in which physiological measurements were made on practitioners in a healing state, with or without a healee present. Design and reporting criteria, developed in part to reflect the pilot nature of the included studies, were applied using a yes (1.0), partial (0.5), or no (0) scoring system.

Results: Of 67 identified studies, the inclusion criteria were met by 22, 10 of which involved human healees. Overall, the studies were of moderate to poor quality and many omitted information about the training and experience of the healer. The most frequently measured biomarkers were electroencephalography (EEG) and heart rate variability (HRV). EEG changes were inconsistent and not specific to biofield therapies. HRV results suggest an aroused physiology for Reconnective Healing, Bruyere healing, and Hawaiian healing but no changes were detected for Reiki or Therapeutic Touch.

Conclusions: Despite a decades-long research interest in identifying healing-related biomarkers in biofield healers, little robust evidence of unique physiological changes has emerged to define the healers' state.

Key words: Reiki, therapeutic touch, healing touch, qigong, heart biofield, brain biofield

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INTRODUCTION

Physiological self-regulation is conventionally described as an array of inter-related biochemical and neural network feedback systems. This view complements and coexists with a biophysical view of self-regulation based on interacting electromagnetic and other fields generated by the dynamic flux of charged biological components. Measurements of extracellular ion fluxes and voltage potential differences in living organisms led to the hypothesis that an electrostatic field, generated by a whole-body electric dipole, surrounds and penetrates the human body.³⁻⁵ Endogenous "biofields," as detected from heart [electrocardiography (ECG)], brain [electroencephalography (EEG)], and muscle [electromyography (EMG)], are

recognized clinically as indices of health and disease.⁶ Biofields have also been shown to be important regulators of tissue development and regeneration,^{7,8} while devices that apply exogenous pulsed electromagnetic fields to stimulate bone healing have been well-tested and Food and Drug Administration (FDA)-approved.^{9,10}

Several therapeutic procedures, based on explanatory models that describe use of the hands to sense and alter biofields, have been developed for improving physical and psychological health. Among the most commonly practiced of these biofield therapies are Reiki, Therapeutic Touch (TT), Healing Touch (HT), and external Qigong (EQG),¹¹ each of which may involve manual contact between the healer and healee but can also be transmitted without direct physical contact.

While known physiological mechanisms appear to contribute to the beneficial effects of physical touch,¹²⁻¹⁴ a barrier to the acceptance of biofield therapies is the lack of a proven biological mechanism to explain non-contact healing. As Hufford¹⁵ has argued, most scientists and clinicians are not willing to accept therapies whose benefits cannot be explained by current scientific knowledge as viable. This stance underscores the need to explore connections between theories underlying energy healing practices and data emerging from the conventional sciences.¹⁶

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In order to facilitate acceptance of biofield therapies, it is necessary first to demonstrate that they have consistent effects on clinical and physiological outcomes. To this end, research on biofield therapies has mainly comprised randomized controlled trials that utilize condition-related outcome measures.^{1,2,17-19} Such trials are important for building an evidence base for biofield therapies, but they offer few insights into how modulation of biofields promotes therapeutic effects.

A parallel line of research has been to examine physiological changes detected in biofield healers during healing states. Such changes may arise in healing sessions (with humans, animals, plants, or cell cultures) as well as in sessions often called “running energy” that do not involve a healee.²⁰ If reproducible physiological changes in biofield healers can be identified, they may serve as markers to reveal events that correlate with the healer’s transition to a healing state.

The initial aim of the present systematic review was to identify and evaluate studies that assessed validated physiological biomarkers in biofield healers during a healing state. We included studies of healers “running energy” or cultivating inner energy, such as in the practice of internal Qigong (IQG), to compare with studies in which practitioners directed healing energy to an external subject. In this manner, we hoped to identify physiological changes that may be unique to the presence of a healee. Findings from the review may help to guide future studies in the emerging domain of biofield physiology.

METHODS

Data Sources

The following databases were searched through February 2012 for potentially relevant articles on physiological changes in biofield healers: PubMed, CINAHL, PsychINFO, AMED, and Alt HealthWatch. The search string employed was (“Reiki” OR “Therapeutic Touch” OR “Healing Touch” OR “Qigong” OR “external Qigong” OR “Qi therapy” OR “Energy Healing” OR “Biofield Therapy” OR “Distance healing” OR “remote healing”) AND (“EEG” OR “Heart Rate Variability”). Internal Qigong (IQG) studies were also included for comparison to external Qigong (EQG) studies with the expectation that they might help to identify healer-related changes in physiology related to outer-directed EQG biofield healing. Supplemental searches were conducted on reference lists from identified articles and from research bibliographies posted on websites of the Center for Reiki Research (www.centerforreikiresearch.org), Healing Touch International (www.healingtouchinternational.org), Qigong Institute (www.qigonginstitute.org/html/database.php), and Therapeutic Touch International Association (therapeutic-touch.org/int-contacts/tt-research).

Selection Criteria

Studies included in this review were (1) English-language, full articles published in peer-reviewed journals; (2) designed to investigate the physiological effects of Reiki, Therapeutic Touch, Healing Touch (HT), Qigong, or other biofield therapies on the practitioner; (3) either controlled or non-controlled trials; (4) trials on humans, animals, plants, or cell cultures in which physiological measurements were also made

on the practitioners; (5) trials in which biofield practitioners were “running energy” i.e., in a healing state, with no healee present; and (6) trials performed with physical touch and/or non-physical contact. Studies were excluded that (1) lacked a clear statement of the type of biofield therapy being assessed; (2) tested only distant or remote healing, i.e., healers not in proximity of healees; (3) examined only stimulus-evoked changes; and (4) used experimentally non-validated outcome measures.

Data Extraction

Information was extracted from each article that met selection criteria for evaluation of quality of reporting and design and to facilitate demographic categorization. Data extracted included author(s) and year, country, biofield therapy, whether the therapy was performed hands on and/or hands off, whether there was a control group, whether a healee was present and if “yes,” type of healee (human/animal/plant/cell), numbers of practitioners and healees, duration of therapy, biomarker(s), and results.

Quality Assessment

Criteria applied to evaluate articles (Table 1) were based in part on assessment items developed for Consolidated Standards of Reporting Trials (CONSORT),²¹ for the CONSORT extension for non-pharmacological trials²² and for studies assessing electrodermal properties of acupuncture points.²³ In developing our criteria, we were also mindful that most of the trials we would be evaluating were pilot studies, also called “early phase research.”²⁴ As such, criteria were worded appropriately, e.g., rather than requiring a sample size calculation, we asked only that a statement be included as to how the sample size was decided (item 6). As another example, since early phase research usually aims to *generate* rather than *test* a hypothesis, we asked for a statement of either objectives or hypotheses (item 2). The 20 criteria were scored independently by both authors for each of the studies. A yes (1.0)/partial (0.5)/no (0)/not applicable (NA) scoring system for each item was used to minimize subjectivity. Differences in scores were discussed and resolved by consensus. The two authors showed close agreement in their scores for each paper. On average, there was an initial full disagreement (one scoring “0” and the other “1”) on 6% (range: 0–11%) of the evaluation questions for a given paper.

RESULTS

Characteristics of Excluded and Included Studies

The search strategy described above yielded 67 citations of potential relevance to physiological changes in biofield healers. After reading the full articles, 45 studies were excluded, the largest categories being “changes measured only in healees”¹² and studies focused on meditation or other activity not characterized as biofield-based healing.¹¹ All categories are listed in the flow diagram (Figure 1).

Of the 22 included studies (Table 2), seven involved external Qigong (EQG), eight internal Qigong (IQG), four Therapeutic Touch (TT), two Reiki, and one each addressed Johrei, Hawaiian healing, Bruyere, Wirkus Bioenergy, and

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