The efficacy of 'distant healing': a systematic review of randomized trials  
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Authors' objectives
To assess the efficacy of any form of "distant healing" (prayer, mental healing, Therapeutic Touch or spiritual healing) as treatment for any medical condition.

Searching
Reports published in peer-reviewed journals were sought from the following databases: MEDLINE; PsycLIT; EMBASE; CISCOM; and the Cochrane Library. Search terms were: 'spiritual healing', 'mental healing', 'faith healing', 'prayer', 'Therapeutic Touch', 'Reiki healing', 'distant healing', 'psychic healing', and 'external qigong', plus 'clinical trials', 'controlled clinical trials' and 'randomized controlled trials'. Leading researchers in the field were contacted to identify further studies and the authors searched their own files, reviews and the reference section of identified articles. No language restrictions were applied. Published abstracts, theses and unpublished articles were excluded.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were included.

Specific interventions included in the review
Distant healing defined as a conscious, dedicated act of mentation attempting to benefit another person's physical or emotional well-being at a distant, was compared with a placebo, sham or otherwise "patient-blindable" or adequate control intervention. The following forms of distant healing were eligible: spiritual healing; mental healing; faith healing; Therapeutic Touch in which patients could not physically observe whether the practitioner was working on them; Reiki healing; distant healing; psychic healing; and external qigong. Prayer included intercessory, supplication and nondirective forms.

Participants included in the review
Patients with any medical condition were eligible. Participants included: patients with psychological or rheumatic disease, tension headaches, osteoarthritis of the knees, burns, hypertension, asymptomatic third molar undergoing surgery, depression, AIDS and warts; children with leukaemia; patients in coronary care or cardiovascular units; patients awaiting open heart surgery; institutionalised elderly patients; post-operative patients; participants with experimentally induced puncture wounds; those receiving alcohol abuse treatment; and those with high levels of autonomic arousal.

Outcomes assessed in the review
No a priori criteria were defined. The efficacy of the intervention was assessed using the following outcome measures: clinical or attitude state; death rate; rates of ventilatory support and treatment with antibiotics or diuretics; alcohol consumption; summed and weighted coronary care unit score; length of hospital stay; anxiety score; pain; analgesic need; wound healing; health status and function; CD8+ counts; galvanic skin response; rates of new AIDS-deficiency illness; illness severity; physician visits; improved mood; systolic blood pressure; size and number of warts.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
Validity was assessed using the following criteria: criteria defined by Jadad et al (see Other Publications of Related Interest no.1); adequacy of power; success of randomisation; control for baseline differences between study groups; and patients lost to follow-up. Differences between two independent assessors were resolved by consensus.
Data extraction
Two reviewers independently extracted the following data onto a custom-made spreadsheet: study design; sample size; type of intervention; type of control; direction of effect; and type of result. Differences were resolved by consensus.

Methods of synthesis
How were the studies combined?
The studies were categorised according to intervention type as prayer, Therapeutic Touch, and other distant healing (including distance or distant healing, paranormal healing, psychokinetic influence, and remote mental healing) and combined in a narrative review with effect sizes averaged across each category using the Cohen's d statistic (weighted by sample size) with the application of Hedges correction (see Other Publications of Related Interest no.2) in studies reporting sufficient data. In studies reporting multiple outcomes a single outcome was chosen to calculate effect size if:

1. A significant change after treatment was shown for that outcome.
2. Outcome was the primary outcome in studies that found several or no significant treatment effects.

An overall effect size was calculated for all trials in which both patient and evaluator were blinded. Fail safe N was calculated for trials of Therapeutic Touch.

How were differences between studies investigated?
Differences between the studies were discussed. Statistical heterogeneity was assessed using a chi-squared test.

Results of the review
Twenty-three RCTs were included (2774 patients including 1295 intervention and 1479 controls).

Overall effect size:

Overall average effect size (16 RCTs): 0.40 (P < 0.001). Heterogeneity was significant (chi-squared P = 0.001).

Prayer (5 double blind RCTs, 1489 patients): Jadad scores were 4 or 5. Qualifications for being an intercessor varied and instructions on how intercessors should pray tended to be fairly open-ended. Results were inconsistent with two trials showing a significant effect of prayer on at least one outcome and three trials showing no effect. Average effect size (4 RCTs) = 0.25 (P = 0.009). No evidence of statistical heterogeneity was found.

Therapeutic Touch (11 RCTs with 747 patients, including 6 double blind studies):
Jadad scores ranged from 2 to 4. Results were inconsistent with seven trials showing a positive treatment effect on at least one outcome, three showed no effect and one trial showed a negative effect. Average effect size (10 RCTs) = 0.63 (P = 0.003). Effect sizes were heterogeneous for studies. Fail safe N = 63.

Other methods of distant healing (7 RCTs with 433 patients, including 6 double blind trials): Jadad scores ranged from 1 to 5. Results were inconsistent with four trials showing a significant effect of the intervention and three showing no significant effect. Average effect size (5 RCTs) = 0.38 (P = 0.073). No evidence of statistical heterogeneity was found.

Methodological issues: mean overall Jadad score was 3.6 (maximum 5). Methodological limitations included: inadequate power; failure to control for baseline differences; and heterogeneity of patients.

There was a non statistically significant trend for studies with higher quality scores being less likely to show a treatment effect = -0.15; P > 0.2).

Authors' conclusions
The methodological limitations of several studies make it difficult to draw definitive conclusions about the efficacy of distant healing. However, given that approximately 57% of trials showed a positive treatment effect, the evidence thus
far merits further study.

**CRD commentary**
The aims were stated and the inclusion criteria were defined in terms of study design, participants and intervention, but the outcomes used to assess treatment efficacy were not defined in advance. Articles were sought from several sources and no language restrictions were applied though methods used to select primary studies were not described and the exclusion of unpublished studies raises the possibility of publication bias.

Methods used to select primary studies were not described.

Validity criteria were specified and validity scores and methodological flaws reported. Methods used to assess validity and extract data were described. Some relevant details of the primary studies were presented in tabular format. It was not stated whether data were extracted on an intention to treat basis. Statistical heterogeneity was assessed and comment made on clinical heterogeneity. However, although the clinical heterogeneity of trials was acknowledged, data from trials were pooled. It would have been helpful to list the number of outcomes assessed per trial and to comment on the validity of methods used to assess outcome measures, drop-outs and adverse reactions. Where multiple outcomes were reported, criteria used to select the outcome to include in estimation of pooled effect size, though stated, were not clear.

As the author rightly advises, caution must be applied when interpreting the results of this review.

**Implications of the review for practice and research**
**Practice:** The authors did not report any implications for practice.

**Research:** The authors report that future research should address distant healing studies in nonhuman populations to allow comparison with 'pure' control groups; careful measurement of psychological factors (such as depression, anxiety, sense of control and self-efficacy); adequately powered randomised controlled trials; and studies designed to directly examine the extent to which patients' or investigators' beliefs influence study outcomes.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.