

"Major Implications for Future Research"1

Editorial Staff

The practice of homeopathy is worldwide, but the medical and scientific communities are reluctant to give much credence to its two theoretical tenets: similars and dilutions.

Yet a systematic review in 1991 of 107 controlled, clinical trials of homeopathy by Kleijnen et al. showed a surprising number of positive results.²

Because many scientists view the principles of homeopathy as implausible, they have hypothesized that the positive results found in homeopathic trials are the result of the placebo effect. Now a recent paper published in *The Lancet* by Klaus et al.¹ has conducted a meta-analysis of 89 trials to test that hypothesis.

The data collection for this effort was quite extensive:

Selection data	Number
Controlled trials	186
Clinical trials	171
Placebo trials	133
Randomised and/or double-blind	119

Descriptive data	Number
Countries	13
Languages	4
Years	1943-95
Number of remedies	50

Patients	
Total number	10523
Mean	118
Range	5-1306

Klaus et al. sought studies in any language from "computerised bibliographies and contacts with researchers, institutions, manufacturers, individual collectors, homeopathic conference proceedings, and books." Of the 186 trials, 119 met the inclusion criteria, and 89 had sufficient data for meta-analysis. This paper includes 145 references. Of the studies considered:

- 33 (37%) used "low" dilutions, 20 (22%) "medium" dilutions, and 31 (37%) "high" dilutions.
- 13 (15%) trials used the "classical" model of homeopathy, 49 (55%) the "clinical" model, 20,

(22%) the "complex" model, and seven (8%) used "isopathy."

The findings of the meta-analysis were that the positive results of homeopathic remedies were not just the result of a placebo effect:

"The combined odds ratio for the 89 studies entered into the main meta-analysis was 2.45 (95% CI 2.05, 2.93) in favour of homeopathy. The odds ratio for the 26 good-quality studies was 1.66 (1.33, 2.08), and that corrected for publication bias was 1.78 (1.03, 3.10). Four studies on the effects of a single remedy on seasonal allergies had a pooled odds ratio for ocular symptoms at 4 weeks of 2.03 (1.51, 2.74). Five studies on postoperative ileus had a pooled mean effect-size-difference of -0.22 standard deviations (95% CI -0.36, -0.09) for flatus, and -0.18 SDs (-0.33, -0.03) for stool (both $p < 0.05$).

"The results of our meta-analysis are not compatible with the hypothesis that the clinical effects of homeopathy are completely due to placebo. However, we found insufficient evidence from these studies that homeopathy is clearly efficacious for any single clinical condition. Further research on homeopathy is warranted provided it is rigorous and systematic."

As is the case with many forms of care, the lack of a significant number of high-quality studies prevented the investigators from concluding the effectiveness of homeopathy that many users would have liked. The researchers noted this problem and made particular efforts to provide suggestions for future research:

"Our impression from detailed examination of these trials, however, is that about two-thirds were methodologically poor, a third reasonable, and a tenth very good. Much of this research reflects the lack of infrastructure needed to conduct good studies and develop appropriate research strategies in this area.

"Our study does, however, have major implications for future research on homeopathy. We believe that a serious effort to research homeopathy is clearly warranted despite its implausibility. Deciding to conduct research on homeopathy recognises that this approach is a relevant social and medical phenomenon.

"What then is a reasonable strategy for approaching this area? "One approach is to develop laboratory models that explore possible mechanisms^{3,4} or attempt independent replication of the simpler clinical models that already exist, such as the studies by Reilly et al.⁵ or Wiesenauer et al.^{6,7,8,9} on seasonal allergies.

"Another approach would be to separate research addressing whether homeopathy is placebo (the academic question currently dominating the debate) more clearly from research exploring whether or not it provides a useful tool in health care (the question of more relevance to patients and health-care providers). To do this, much more detailed information is needed on who is treated with homeopathy (population characteristics), the reliability of homeopathic classifications (clinical accuracy), how homeopathy is applied (standards and decision models and practice), and response rates (effect sizes) of these approaches on specific conditions. This type of detailed clinical information is obtainable from prospective observational studies and would allow for rational planning of randomised trials that truly reflect homeopathic practice and have clinical and scientific implications."

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