

A historical perspective on placebo

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Throughout medical history placebos have played an important, albeit neglected, part in contributing to a therapeutic response. An analysis of its changing role facilitates our understanding of current debates regarding the value of non-specific effects of medical interventions. Even though we now condemn the use of placebo outside clinical trials, most clinicians employ the placebo effect in ways which are not always apparent. If placebos generate clinical benefit, it is imperative that patients profit from the non-specific and specific effects of treatments.

Most believe that giving placebos to patients in clinical practice amounts to unethical deceit. Placebo therapy outside clinical trials is therefore generally condemned. Yet survey data suggest that many clinicians continue to use placebos in everyday practice.^{1,2} Are they behaving unethically? A historical perspective might help us understand.

For thousands of years, medicine relied on little else than the placebo effect. Effective treatments were few and far between. Many of the most popular therapies were not just ineffective but outright harmful.³ Bloodletting, for example, agreed perfectly with the aetiological concepts of the day (eg theory of four humours) and was therefore considered a plausible intervention. For millennia it was therefore used as a panacea. Today we know that, for many patients, its specific effects (eg hypovolaemia, anaemia) are not beneficial and for gravely ill people they can be seriously harmful. The obvious question is, why did clinicians use bloodletting so persistently? Surely they only wanted to help their patients? Part of the answer has already been given as bloodletting seemed biologically plausible and effective alternatives were rare. The other part is more complex and relates to placebo.

Like all medical interventions, bloodletting generates a sizeable placebo response, particularly if clinicians and patients are convinced of its benefits. Many patients suffering from minor, self-limiting conditions would therefore have experienced symptomatic improvements after bloodletting (Fig 1). Throughout history, clinicians have misinterpreted such observations. If a patient recovers after therapy, it is thought to be as a result of the treatment. Placebo and other non-specific effects importantly contribute to the total therapeutic response. This error is all too human – we need to believe in our treatments – but it perpetuates old myths, often to the detriment

of the patient. In the case of bloodletting, it has undoubtedly contributed to its longevity and is therefore responsible for the premature death of many patients.

Fortunately medicine progressed. Relatively harmless treatments became popular in the form of homeopathy, water cures, electrotherapy etc. The suspicion grew that many of the old treatments, such as bloodletting, were doing more harm than good. Homeopathy, by contrast caused no direct adverse effects. Its initial success was therefore astounding.⁴ Today, most believe that homeopathy is devoid of specific therapeutic effects.^{5,6} But as it is associated with powerful placebo and other context effects, patients will experience (and clinicians may observe) benefit (Fig 1). Of course, therapists continue to believe that such improvements are the result of their prescriptions, and this self-delusion explains homeopathy's survival to the present day. Observational studies of homeopathy invariably suggest considerable benefit,^{7,8} while rigorously controlled trials fail to do so.^{5,6} The apparent discrepancy disappears if the role of non-specific effects is considered (Fig 1).

As medicine advanced further, it was apparent that many of the heroic treatments of the past caused unacceptable harm. Crucially, science also began to be applied to medicine. This approach introduced treatments (eg aspirin or penicillin) which demonstrated specific effects for specific conditions. It is now known that the specific effects also caused adverse effects. But, in the right circumstances, the benefits outweighed the risks (Fig 1). For the first time in medical history, specific and non-specific effects could be employed to the benefit of many patients.

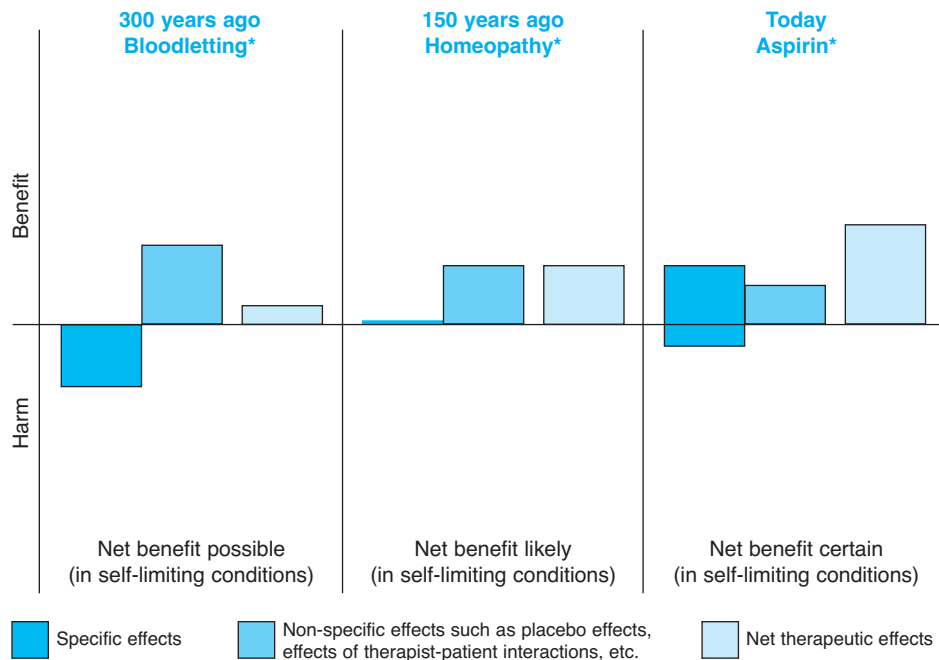
The implications of this simplified historical perspective may be far reaching.

- Non-specific effects are important contributors to the total therapeutic response.
- Even harmful treatments can appear to be beneficial on the basis of experience and observation alone.
- Medical progress is made through rigorous science while experience can be seriously misleading.
- Placebos are not needed to generate placebo effects – all treatments come with the added bonus of non-specific effects.

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Fig 1. Schematic view of placebo in three different historical settings. Nocebo effects are omitted from this model for reasons of simplicity.
*Examples of treatments popular at the time.



The current debate as to whether homeopathy or similar therapeutic approaches should be available on the NHS relies on the notion that patients benefit from such treatments,⁹ as suggested by observational studies.^{7,8} It hardly matters whether this benefit is due to placebo or other effects; the main objective is to help patients. But this argument seems to ignore that even specific treatments generate powerful non-specific effects. Surely it is preferable to combine both the specific and non-specific factors whenever possible? The use of homeopathy or similar treatments is thus depriving patients of the full range of therapeutic benefits.

Placebos are not just sugared pills, they come in many guises. Treatments which are currently deemed to be effective may be abandoned tomorrow, if new data demonstrate their ineffectiveness. Prescribing such a therapy today could therefore be seen as administering a placebo. Moreover, even effective treatments can be placebos in at least two different situations. When used appropriately, they also generate a placebo response. When used inappropriately, for example vitamin C for conditions other than vitamin C hypovitaminosis, they can act as placebos. Arguably therefore most clinicians use placebo regularly.

But is it ethical to prescribe a treatment knowing that it has no specific effects? This difficult question will continue to be debated controversially. Patients are obviously best served if we make sure they benefit from both specific and non-specific effects by prescribing evidence-based treatments and administering them with kindness, understanding and empathy. But what if no specific treatment exists? Patients may suffer from untreatable or indefinable conditions. In such cases, prescribing

a placebo could, after all, be a kind and helpful act for generating a positive therapeutic response.

References

- Ernst E, Abbot NC. Placebos in clinical practice: results of a survey of nurses. *Perfusion* 1997;10:128–30.
- Nitzan U, Lichtenberg P. Questionnaire survey on use of placebo. *BMJ* 2004;329:944–6.
- Wootton D. *Bad medicine*. Oxford: Oxford University Press, 2006.
- Ernst E, Kaptchuk TJ. Homeopathy revisited. *Arch Intern Med* 1996; 156:2162–4.
- Ernst E. A systematic review of systematic reviews of homeopathy. *Br J Clin Pharmacol* 2002;54:577–82.
- Shang A, Huwiler-Muntener K, Nartey L *et al*. Are the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy. *Lancet* 2005;366:726–32.
- Witt CM, Lüdtke R, Willich SN. Effect sizes in patients treated by homeopathy differ according to diagnoses – result of an observational study. *Perfusion* 2005;18:356–60.
- Spence DS, Thompson EA, Barron SJ. Homeopathic treatment for chronic disease: a 6-year, university-hospital outpatient observational study. *J Altern Complement Med* 2005;11:793–8.
- Smallwood C. *The role of complementary and alternative medicine in the NHS. An investigation into the potential contribution of mainstream complementary therapies to healthcare in the UK*. London: FreshMinds, 2005