

Are prayer experiments legitimate?

Twenty criticisms

Author links open overlay panel Larry Dossey MD ¹, David J. Hufford PhD ²

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Introduction

The idea that conscious intentions, in the form of prayer, can affect living organisms is an ancient and universal belief spanning ideology, religion, culture, and race. Anthropologist Stephan A. Schwartz states, “The shamanic cave art of Altamira, Tres Freres, and Lascaux presents compelling testimony that our genetic forebears had a complex view of spiritual and physical renewal, one that has survived to the present unchanged in at least one fundamental respect. The intent to heal, either oneself or another, whether expressed as God, a force, an energy, or one of many gods, has consistently been *believed* to be capable of producing a therapeutic result.”¹

In the past 2 decades, this ubiquitous belief has been increasingly subjected to scientific scrutiny. In 1988, cardiologist Randolph C. Byrd, of UC-San Francisco School of Medicine, published the first randomized controlled trial (RCT) involving distant intercessory prayer.² Since then, investigators have continued to explore in controlled trials the possible effects of remote prayer and healing intentions in coronary heart disease,^{3, 4, 5} AIDS,⁶ infertility,⁷ and other clinical conditions.^{8, 9}

Prayer research did not originate with Byrd’s provocative study, however. Numerous controlled experiments exploring prayer and distant healing have been done in nonhuman subjects since the 1960s. Significant among them is a series of experiments by psychologist Bernard R. Grad, of McGill University. Grad explored the influence of healing intentions on the rate of healing of surgical wounds in animals, the growth rate of animal tumors, and the rate of growth of plants and microbes.^{10, 11, 12, 13, 14, 15, 16} Similar results were obtained by successive investigators building on his

methods.^{17, 18, 19, 20} Succeeding studies involved increasingly objectifiable end points, such as the rate of hemolysis of red blood cells²¹ and the kinetics of specific biochemical reactions.^{22, 23} Experiments in nonhuman subjects are important because they eliminate the placebo effect, one of the most common objections lodged against human studies.

Of the eight major controlled clinical trials of prayer and distant healing in humans that have been published to date, four have yielded statistically significant results. Both the human and nonhuman studies in distant healing have been the subjects of recent reviews and systematic and metaanalyses.^{24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35} All but one³¹ of the systematic and metaanalyses of the human experiments in prayer and distant healing that have been published to date have been generally positive, and even this review concluded that the evidence, although inconclusive, was interesting enough to justify further study. A variety of objections to prayer experiments have understandably been raised. We will comment on the most common of them.

Section snippets

Intercessory prayer is not amenable to scientific study in principle. Key variables in prayer, such as its intensity, quantity, quality, and form, cannot be defined, measured, or controlled. This problem undermines the construct validity of all experiments in intercessory prayer

The belief in prayer involves the empirical assertion that it causes changes in the physical world. Where there is an empirical claim, scientific investigation cannot be ruled out.³⁶

Quantitative and qualitative variables in prayer, such as duration, intensity, and content, are elemental and obvious, and anyone who has ever contemplated an experiment in prayer has probably considered them. These issues have been discussed in depth for over a decade by researchers and are an active part of the

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ARE PRAYER EXPERIMENTS LEGITIMATE? TWENTY CRITICISMS

Larry Dossey, MD,^{1*} and David J. Hufford, PhD²

INTRODUCTION

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TWENTY CRITICISMS OF PRAYER EXPERIMENTS

1. Intercessory prayer is not amenable to scientific study in principle. Key variables in prayer, such as its intensity, quantity, quality, and form, cannot be defined, measured, or controlled. This problem undermines the construct validity of all experiments in intercessory prayer

The belief in prayer involves the empirical assertion that it causes changes in the physical world. Where there is an empirical claim, scientific investigation cannot be ruled out.¹⁶

Quantitative and qualitative variables in prayer, such as duration, intensity, and content, are elemental and obvious, and anyone who has ever contemplated an experiment in prayer has probably considered them. These issues have been discussed in depth for over a decade by researchers and are an active part of the research agenda in this field.^{32, 33} For example, researchers in one prominent prayer study⁶ set an allotted "time dose" for the distant healing efforts and required healers to keep a daily written record of the exact duration and cognitive method for their prayer or distant healing work.

Although challenging, these issues are not fatal to prayer research. By way of analogy, research of the efficacy of pharmaceuticals was an immature discipline not so long ago; it did not spring fully formed from the bosom of science. Idiosyncratic factors such as differences in absorption, metabolism, and quality of the ingested medication were areas of concern and remain so. Factors related to the vagaries of consciousness, such as suggestion and expectation—placebo effects—played havoc with the outcome of pharmaceutical drug studies and still do. Profound questions concerning the nature and even the existence of the placebo response have recently been raised, igniting a controversy regarding the interpretation of placebo-controlled trials.³⁷ The RCT is clearly an unfinished product and is still evolving. The methodology of controlled human experiments in prayer is also evolving and has improved since these studies were initiated. They can be expected to continue to improve in the future, just as the quality of RCT's has improved with the passage of time.

Some areas of medicine have gained acceptance in spite of considerable ambiguity, so, too, might the study of prayer. Consider psychotherapy. Who can measure the quality and quantity of therapeutic intent or of a therapist's caring and compassion? What is the proper "dose" of psychotherapy? Which "brand" is best? Can causal chains in psychotherapy be identified? When patients get better in psychotherapy, is it necessary always to ask why? These questions resemble many of the problems with

1 Santa Fe, NM, and

2 The Doctors Kienle Center for Humanistic Medicine, Penn State College of Medicine, Hershey, PA

This paper is dedicated to the memory of Elisabeth Targ, MD (1961-2002), who contributed to its contents prior to her untimely death.

* Corresponding author. Address:

878 Paseo del Sur, Santa Fe, NM 87501
e-mail larry@dosseydossey.com

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