

Studying the efficacy of prayer

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Although prayer is widely used for promoting good health and alleviating illness, its efficacy has not been established. But is it possible to subject prayer to scientific scrutiny?

One Sunday, Ms Marian Eure, RN, was part of a congregation that was praying for one of its members, Betty, a 60-year-old woman who was scheduled to have a lumpectomy for breast cancer. The next week Betty attended the hospital, 'but when a scan was performed to localize the tumor, it was gone!' recalls Ms Eure, a nurse case manager from Texas, USA.¹

It is not easy to establish the facts in anecdotal tales like this, but such stories are not uncommon. Many, if not most, doctors have been witness to cases of spontaneous remission or regression, and often the patients involved have their own belief about how they were cured. Studies are being performed to investigate whether prayer may play a part in healing. Are scientific studies able to confirm these anecdotal tales?

Is there any scientific evidence?

In 2000, an analysis was published of 23 randomised trials of distant healing. Five of these trials examined intercessory prayer (whereby a group prays on behalf of patients);² in two of these, the patients who were prayed for showed a significant benefit in at least one measured outcome. Meanwhile, Cochrane reviewers found data on intercessory prayer to be inconclusive, but noted that 'the evidence presented so far is interesting enough to justify further study'.³

Can it be shown that praying can heal?

Today when we want to know if a drug works we compare it with placebo. When studying patients who are praying or have a certain faith, however, adjusting for a placebo effect is difficult. Moreover, the action of praying may have physiological effects.

According to a group of Italian researchers, 'the rosary might be viewed as a health practice as well as a religious practice'.⁴ They found that the timing of praying or reciting a yoga mantra coincided with an underlying 10-second cycle in arterial pressure known as a Mayer oscillation wave. This is one of several physiological rhythms in cardiovascular variability and is believed to be related to parasympathetic and sympathetic



influences. In their study, 23 adults were monitored while breathing spontaneously, talking freely, and reciting the Ave Maria in Latin or a yoga mantra. During recital of either the Ave Maria or the mantra, respiration slowed to about six breaths per minute with a regularity similar to that observed when the subjects later breathed to a metronome at six beats per minute. Monitoring showed a subsequent effect on cardiovascular rhythms and baroreflex sensitivity.

Perhaps external factors associated with prayer positively influence health. In India, the temple of Muthusamy is deemed to be a place of healing, especially of psychiatric conditions. In a formal study, psychiatrists evaluated 31 people with a psychiatric disorder (schizophrenia or delusional or bipolar disorder) before and after staying at the temple for about six weeks and reported significant improvements in the patients' conditions (supported by most patients' and carers' reports).⁵ People residing at the temple are encouraged to participate in daily routines, which include cleaning the compound after attending 15 minutes of simple morning prayers (puja). Factors other than prayer (such as socialisation or distraction from internal pondering) may have had positive effects. The study authors added that, along with the cultural power of being in the temple, the nonthreatening supportive environment may have promoted recovery from psychotic symptoms.

After seven years of clinical practice, Dr Barclay now writes for *Medicine Today*.

Can intercessory prayer promote cure?

If we remove the act of praying from the patient to an offsite group, then are the effects of prayer itself more assessable? It would seem so, as true blinding to intervention can occur. However, since family and friends may be praying for a patient, the effects of additional prayer (rather than prayer itself) are being assessed.

Randomised trials of intercessory prayer generally allocate patients to standard therapy (controls) or to standard therapy with additional prayer by a remote prayer group that receives a list of names. One of the first such double-blind studies involved 393 patients in a coronary care unit.⁶ A significantly lower severity score, based on clinical course of the admission, was found in the intervention group compared with the control group. In addition, controls were more often ventilated, given diuretics or given antibiotics.

Complementing these findings are other results. A US study of 990 coronary care unit patients along a similar vein found a positive effect on outcomes associated with being prayed for, but no effect on duration of stay in the hospital or unit.⁷ Meanwhile, suggestive but not statistically significant results came from the MANTRA pilot study of 150 patients with acute coronary syndromes undergoing cardiac catheterisation.⁸ Patients were assigned to standard treatment plus one of four noetic therapies or to standard treatment alone. The 30 patients who were the subjects of offsite prayer had 50% fewer in-hospital complications than the 30 controls.

Other patient populations have been studied. The success of *in vitro* fertilisation was positively and significantly associated with intercessory prayer in a randomised trial of 219 women who were prayed for by groups in the USA, Canada and Australia.⁹ Both pregnancy and implantation rates were doubled in the group allocated to distant prayer.

Yet not all evidence has suggested that prayer is efficacious. Some randomised intercessory prayer studies have shown no effect. Examples include a randomised study of 799 Mayo clinic patients in a coronary care unit, about half of whom were prayed for on hospital discharge (with follow up at 26 weeks),¹⁰ and a study of 40 alcoholic patients randomised to prayer.¹¹

Defying time

Adding another dimension, prayer was applied backward in time to 3393 septicaemic patients who had previously been in a university hospital in Israel and had positive blood culture results. The patients had been hospitalised at some time between 1990 and 1996; in July 2000, they were randomised to a prayer or control group.¹² The patients' past clinical courses were then reviewed. Those who had their wellbeing and recovery later prayed for (about 1690 people) had significantly shorter hospital admissions than others. Mortality was also lower in

the group assigned to prayer, although the difference was not statistically significant (28.1% v. 30.2%).

In response to readers' letters, study author Professor Leonard Leibovici wrote that although the details reported were correct, his purpose had been to ask: would you believe in a study that looks methodologically correct but tests something that is completely out of people's form (or model) of the physical world? 'I believe that prayer is a real comfort and help to a believer. I do not believe it should be tested in trials', he said.¹²

Disagreeing on the validity of studies

Professor Leibovici is not alone. Some physicians believe that it is scientifically or theologically unsound to study prayer.

Unlike testing effects of a drug or therapy, which inevitably includes qualitative and quantitative assessment about the treatment, prayer may not be well enough understood or defined to permit scientific evaluation. Some of those who oppose studying prayer argue that questions regarding dosage and the most effective type of prayer cannot be answered. (How many people must pray, for how long and in what manner? Are different types of prayer of different efficacy, and is the effectiveness of prayer dependent on variables such as the prayer-giver's beliefs?)

Others find studying prayer unacceptable because of the absence of an accepted theory to explain it. In response to these critics, Dr Larry Dossey, MD, said 'today we are as baffled by the remote effects of prayer as Newton's critics were by the distant effects of gravity'.¹³

If prayer does heal, what does that mean?

Some trials have supported the hypothesis that praying for another person may aid in his or her recovery; other trials have shown that health benefits relate to the act of praying. But the evidence to date is not strong enough to draw any conclusions or to suggest prescribing prayer as adjuvant therapy. So we await results from further (especially larger) trials with interest.

If prayer is established to positively affect healing, this finding will not necessarily mean that prayer is answered by an outside power or being, only that the act of praying or being prayed for, via an undefined mechanism, results in improvement in health. Moreover, success of intercessory prayer would suggest that the more people that pray the more likely a patient is to be healed (because of unaccounted-for baseline prayer).

Whatever the mechanism, if prayer is established as an efficacious adjuvant to healing then it may no longer be seen as a last resort. After trying all of the conventional therapies, instead of saying 'all we can do now is pray', one day we may be able to say 'luckily, we can still pray'. MT

A list of references is available on request to the editorial office.

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