

# Clinical Trials on the Efficacy of Prayer: A Scientific and Theological Critique

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*In recent decades researchers have investigated the effectiveness of prayer by designing clinical trials using distant intercessory prayer as a treatment method for a variety of health conditions. Some studies claim to demonstrate a statistically significant result while others show no effect. This article surveys the most significant of these studies to determine if they demonstrate what their authors claim. The paper argues that clinical trials using prayer as a treatment option are not an appropriate subject for scientific investigation. In addition, it raises several theological objections to the assumptions underlying these studies.*

Prayer has been a fundamental part of Christian experience and practice since the inception of the movement. Down through the centuries both pious and not so pious Christians have called upon God asking for divine assistance especially in moments of distress. Although the number of people affiliated with religion today is on the decline, prayer is still a regular practice for the majority of Americans.<sup>1</sup> Even those who would not consider themselves religious will occasionally turn to God for help seeking rescue from danger, relief from suffering, and healing from sickness. Underlying this practice is not only the belief that God hears their appeals but also responds. Many Christians, especially those from conservative religious movements, believe that prayer can influence God to bring about specific outcomes. But is such a belief testable by modern scientific methods?

In recent decades researchers have turned their attention to the potential benefits of a variety of religious practices.<sup>2</sup> As a part of this trend, prayer has become an

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<sup>1</sup> According to a 2014 Pew Research poll 55% of Americans say they pray at least once a day, but those who say they seldom or never pray increased from 18% to 23% since 2007. "Chapter 2: Religious Practices and Experiences," Pew Research Center: Religion & Public Life, 3 November 2015, <http://www.pewforum.org/2015/11/03/chapter-2-religious-practices-and-experiences/#private-devotions>.

<sup>2</sup> For example, numerous studies have shown a correlation between church attendance and reduced mortality. Bruce Y. Lee and Andrew B. Newberg, "Religion and Health: A Review and Critical Analysis," *Zygon* 40 (2005) 449.

object of scientific investigation. One approach has been to explore both the physical and psychological benefits this practice might have for those who pray.<sup>3</sup> A second line of inquiry, however, examines the effect of intercessory prayer on the health of those suffering from illness. Several investigators have focused on prayer performed in the presence of the patient.<sup>4</sup> However, these studies are by their very nature unblinded, and any results found in the treatment group might be attributed to a variety of factors including both the placebo effect and the Hawthorne effect.<sup>5</sup> Consequently, other researchers have chosen to examine distant intercessory prayer where, in most cases, the patient does not even know that prayers are being offered on their behalf. Numerous clinical trials have been designed to test the efficacy of prayer in the same manner one might test a new drug or treatment protocol.<sup>6</sup> Several of these studies have been widely publicized and are frequently cited in discussions regarding the efficacy of prayer.

Reports in the popular media often include eye-catching headlines touting either the effectiveness of prayer or its failure depending on the most recent results. Consider the following headlines: “Long-Awaited Medical Study Questions the Power of Prayer,” “Science Proves the Healing Power of Prayer,” and “Power of Prayer Flunks an Unusual Test.”<sup>7</sup> Yet just what exactly do these prayer studies demonstrate? Can science verify the activity of God in answering prayer or, on the other hand, prove that prayer accomplishes nothing? Should one’s view concerning the efficacy of prayer be dependent on the latest scientific findings? To answer such questions this analysis will first survey the most frequently cited and most important studies on distant intercessory prayer.

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<sup>3</sup> Ibid., 456.

<sup>4</sup> The most prominent of these studies is Candy Gunther Brown et al., “Study of the Therapeutic Effects of Proximal Intercessory Prayer (STEPP) on Auditory and Visual Impairments in Rural Mozambique,” *Southern Medical Journal* 103.9 (2010) 864-869.

<sup>5</sup> The Hawthorne Effect refers to the changes in behavior that occur in study participants because they know that they are being observed.

<sup>6</sup> Jeffrey Kluger, “The Biology of Belief,” *Time*, 12 February 2009. Kluger claims that more than 6000 studies have been published since the year 2000 but cites no reference for this figure.

<sup>7</sup> Benedict Carey, “Long-Awaited Medical Study Questions the Power of Prayer,” *The New York Times*, 31 March 2006, [www.nytimes.com/2006/03/31/health/31pray.html](http://www.nytimes.com/2006/03/31/health/31pray.html); “Science Proves the Healing Power of Prayer,” *NewsMax Health*, 31 March 2015, [www.newsmax.com/Health/Headline/prayer-health-faith-medicine/2015/03/31/?id/635623/](http://www.newsmax.com/Health/Headline/prayer-health-faith-medicine/2015/03/31/?id/635623/); Associated Press, “Power of Prayer Flunks an Unusual Test,” 30 March 2006, [www.nbcnews.com/id/?12082681/ns/health-heart\\_health/t/power-prayer-flunks-unusual-test/#.WS8Uxfnyu70](http://www.nbcnews.com/id/?12082681/ns/health-heart_health/t/power-prayer-flunks-unusual-test/#.WS8Uxfnyu70).

## SURVEY OF STUDIES ON DISTANT INTERCESSORY PRAYER

### *Joyce and Welldon (1965)*

One of the early studies on this topic was designed by Joyce and Welldon in 1965.<sup>8</sup> The authors work under the assumption that “if physical and mental effects do indeed occur as a result of intercessory prayer, it should be possible to assess these and to establish their clinical and statistical significance in a similar way to that for any medical form of treatment.”<sup>9</sup> They recruited four physicians who then examined 38 patients at two London clinics who were suffering from either “chronic stationary or progressively deteriorating psychological or rheumatic disease.”<sup>10</sup> Patients were paired according to sex, age, and clinical diagnosis, and were entered into the trial without their knowledge. All patients received the normal medical treatment, but one in each pair was assigned to a prayer group from the Christian tradition.

Patients were prayed for each day by intercessors for an estimated total of 15 hours of prayer over a 6-month period. Prayers took the form of silent meditation in which, after opening their mind up to God, the healer concentrated on a mental image of the patient and repeated their name but with no specific verbal petition. Patients were then reevaluated 8-18 months after they had been enrolled and the results were compiled chronologically. The first 6 pairs that completed the trial showed an advantage to the prayer treatment group, but 5 of the next 6 pointed in favor of the control group. The authors conclude that no statistical advantage could be demonstrated for either group. They suggest several potentially complicating factors including a small sample size, the sequential design of the study, and two different forms of illness (one psychological and the other a joint disease).

### *Collipp (1969)*

The study by Joyce and Welldon prompted a similar investigation by Platon Collipp.<sup>11</sup> His research focused on 18 leukemic children, 10 of whom were randomly assigned to a prayer group without their knowledge. The intercessors consisted of 10 families from a Protestant church who were asked to pray daily for these

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<sup>8</sup> The earliest study of intercessory prayer is usually attributed to Sir Francis Galton in the late 1800s, but it was not a clinical trial. Galton compared the lifespans of various classes of people assuming that royalty and clergy would be prayed for more often than others and thus should live longer. Edward C. Halperin, “Should Academic Medical Centers Conduct Clinical Trials of the Efficacy of Intercessory Prayer?” *Academic Medicine* 76 (2001) 791.

<sup>9</sup> C. R. B. Joyce and R. M. C. Welldon, “The Objective Efficacy of Prayer: A Double-Blind Clinical Trial,” *Journal of Chronic Diseases* 18 (1965) 368.

<sup>10</sup> The use of two different types of illness in the same study is unusual, especially since one is physical and the other psychological.

<sup>11</sup> Platon J. Collipp, “The Efficacy of Prayer: A Triple Blind Study,” *Medical Times* 97.5 (1969) 201-204.

children. The study lasted 15 months at which time 7 of the 10 children in the prayer group were still alive but only 2 out of 8 in the control group survived. The author admits, “The small number of patients in this study precludes definite conclusions about the efficacy of prayer.”<sup>12</sup> Yet, he goes on to claim, “Our data does support the concept, however, that prayers for the sick are efficacious.”<sup>13</sup> This conclusion seems vastly overstated, not only in light of the small sample size, but also because no factors that might have affected survival rate were taken into account when the children were divided into groups.

### *Byrd (1988)*

One of the most frequently referenced clinical trials was conducted in a San Francisco coronary care unit by Randolph Byrd.<sup>14</sup> The study examined 393 patients over a 10-month period. All patients were fully informed of the research and were randomly assigned to either receive distant intercessory prayer or to a control group. The intercessors are described as “born again” Christians who were actively involved in a church. Prayer for each patient in the treatment group was done remotely on a daily basis by 3-7 intercessors. They were instructed “to pray daily for a rapid recovery and for prevention of complications and death.”<sup>15</sup> At the end of the study, Byrd concludes that there was a significant difference between the two groups. He states, “Fewer patients in the prayer group required ventilatory support, antibiotics, or diuretics.”<sup>16</sup> Byrd admits, however, that one complicating element is that prayer by patients in the control group or by their friends and relatives could not be controlled.

Yet Byrd’s claim that prayer was shown to be beneficial represents a selective reading of the data. First, intercessors prayed for a “rapid recovery” as well as prevention of complications and death. However, Byrd found no statistical difference in the length of the hospital stay between the two groups nor in the prevention of death. In addition, out of the 26 variables used to measure “complications,” a statistical significance was found in only 6. In addition, Byrd’s primary claim that the patients receiving prayer fared better is based on an analysis of patient outcomes. Several criteria were used to group patients into one of three categories of outcomes: good, intermediate, or bad. Yet the criteria for evaluating these outcomes were chosen by Byrd after seeing the data, that is, while unblinded.<sup>17</sup>

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<sup>12</sup> *Ibid.*, 202.

<sup>13</sup> *Ibid.*

<sup>14</sup> Randolph C. Byrd, “Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population,” *Southern Medical Journal* 81.7 (1988) 826-829.

<sup>15</sup> *Ibid.*, 827.

<sup>16</sup> *Ibid.*, 828.

<sup>17</sup> Irwin Tessman and Jack Tessman, “Efficacy of Prayer: A Critical Examination of Claims,” *Skeptical Inquirer* (March/April 2000) 32. See also the comments by Lynda H. Powell, Leila Shahabi, and Carl

*Harris (1999)*

Another highly influential study on distant intercessory prayer was carried out by Harris and his colleagues at a Kansas City coronary care unit in an attempt to verify the findings of Byrd. In contrast to Byrd's methodology, patients were unaware that a study was taking place. A total of 1,013 patients were randomly assigned to either the prayer or control group upon admission to the unit. The names of patients targeted for prayer were divided between various teams consisting of 5 intercessors. Prayer teams were instructed to pray daily for 28 days for "a speedy recovery with no complications" as well as anything else that seemed appropriate.<sup>18</sup> The intercessors were all from the Christian tradition, though not all from the same denomination. The expectation of the study designers was that the effectiveness of this general prayer would not reveal itself in a particular clinical outcome but only in some kind of broader effect. Consequently, they developed a new weighted scoring system to measure global outcomes which they named the MAHI-CCU score.<sup>19</sup> Harris summarizes the results as follows, "Using a severity-adjusted outcomes score, we found lower overall adverse outcomes for CCU patients randomized to the prayer group compared with those randomized to the usual care group. Lengths of CCU stay and hospital stay after initiation of prayer were not affected."<sup>20</sup> Yet when the researchers applied the same assessment instrument used by Byrd, they found no statistical significance between the two groups. In addition, the investigators admit that they were most likely studying "supplementary prayer" since most patients were probably already receiving prayer from family, friends, and clergy.

*Matthews (2000)*

A year after the Harris study, Matthews, Marlowe, and MacNutt examined the effect of prayer on patients with rheumatoid arthritis.<sup>21</sup> In contrast to earlier investigations, this study included in-person laying on of hands as well as distant inter-

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E. Thoresen, "Religion and Spirituality: Linkages to Physical Health," *American Psychologist* 58 (2003) 47-48. However, some simply take the results at face value, for instance, Mark Townsend et al., "Systematic Review of Clinical Trials Examining the Effects of Religion on Health," *Southern Medical Journal* 95 (2002) 1431.

<sup>18</sup> William S. Harris et al., "A Randomized, Controlled Trial of the Effects of Remote, Intercessory Prayer on Outcomes in Patients Admitted to the Coronary Care Unit," *Archives of Internal Medicine* 159.19 (1999) 2274.

<sup>19</sup> MAHI-CCU is shorthand for Mid America Institute—Cardiac Care Unit scoring system. It was developed by three cardiologists and one internist.

<sup>20</sup> *Ibid.*, 2275.

<sup>21</sup> Dale A. Matthews, Sally M. Marlowe, and Francis S. MacNutt, "Effects of Intercessory Prayer on Patients with Rheumatoid Arthritis," *Southern Medical Journal* 93.12 (2000) 1177-1186.

cessory prayer. Consequently, all patients were fully aware of the nature of the study and agreed to participate. Intercessors were all recruited from the same organization, Christian Healing Ministries. The direct contact prayer occurred over a 3-day period which also included 6 hours of education on the subject of God and healing. In addition, “a total of 6 hours of personalized, hands-on ‘soaking prayer’ was offered, in which several prayer ministers prayed aloud and laid their hands for prolonged periods over the affected joint(s) or other affected body parts of each individual.”<sup>22</sup> The study was divided into two groups. The first group (29 participants) received the direct prayer treatment immediately upon enrollment, while a second group (15 participants) served as a control for 6 months at which time they also received direct prayer treatment.<sup>23</sup>

Remote intercessory prayer was provided for 23 of these 44 patients for 6 months following their 3-day treatment session.<sup>24</sup> Intercession was performed for at least 10 minutes each day by two prayer ministers. Patients were assigned for distant prayer through random selection, and patients did not know their status in this part of the trial. Patients in group 1 (direct prayer) showed a significant improvement at the 6-month follow-up visit compared to group 2 (waiting list). However, at the 12-month follow-up after having received direct prayer treatment, group 2 also showed significant improvement. In contrast, no statistically significant improvement was seen in those who received the supplemental distant intercessory prayer.<sup>25</sup>

The authors contend that the significant short-term and long-term improvement of patients who received direct prayer was “not characteristic of the natural history of the disease or the expected treatment course of individuals with longstanding disease who are taking stable doses of medication.”<sup>26</sup> They end the discussion with a list of limitations to their study: 1) patients in this study were more religious than the general population, 2) initial group assignment was not randomized, 3) Hawthorne and placebo effects may have been significant, and 4) patients receiving direct prayer were not blinded to their participation. In a revealing final observation the authors note:

One unexpected and unexplained finding was that the improvement in swollen and tender joints and reduction in pain and functional disability observed in

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<sup>22</sup> *Ibid.*, 1180.

<sup>23</sup> The authors note that because of schedule conflicts the two groups were not randomized, but were divided based on “date of enrollment, convenience, and availability.” *Ibid.*

<sup>24</sup> After four participants dropped out of the study, only nineteen individuals received distant prayer (thirteen from group 1 and six from group 2).

<sup>25</sup> In a particularly illuminating statistic the authors note that more of the patients believed that they were the subject of distant prayer (79%) than was actually the case (48%), and that those who believed they had received prayer were more likely to show improvement in several of the categories measured.

<sup>26</sup> *Ibid.*, 1183.

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our study was not accompanied by a parallel reduction in serum inflammatory markers (ESR and CRP). Therefore, it is possible that the detected clinical improvement might be attributable more to alteration of patients' perceptions regarding their illness than to changes in inflammatory pathways affecting their joints.<sup>27</sup>

However, this does not hinder them from suggesting that direct intercessory prayer might be a useful treatment for some patients.

*Kwang (2001)*

A sixth clinical trial examined the possible effect of distant intercessory prayer on the success of in vitro fertilization procedures.<sup>28</sup> The participating hospital was located in Seoul, Korea, while the intercessors resided in the United States, Canada, and Australia. The study began with 219 women, but only 169 completed the study. Intercessors were all from Christian denominations and were divided into two tiers. Tier one prayed directly to increase the pregnancy rate of the patients, while tier two prayed directly for the tier one intercessors in order to "increase their prayer efficacy."<sup>29</sup> Each prayer group consisted of 3-13 participants, and they prayed for 5 patients at a time using only pictures over a three-week period. Patients were randomly assigned to the prayer or control group after being stratified based on age, length and type of infertility, and number of prior attempts at treatment.<sup>30</sup> None of the patients were aware that they were a part of the study.

The researchers found that the group receiving intercessory prayer had a higher pregnancy rate (50% vs. 26%) and a higher implantation rate (16.3% vs. 8%).<sup>31</sup> However, they also note that "the overall pregnancy rate for IVF-ET during the study (December 1998–March 1999) was 38.5% when all pregnancies (both groups) were taken into account. This rate was similar to the historical rate for the center's program."<sup>32</sup> One then wonders why the group not receiving prayer had a below average pregnancy rate. Yet the authors conclude that the use of intercessory prayer might provide a significant impact on the success of the procedure.

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<sup>27</sup> *Ibid.*, 1184.

<sup>28</sup> Y. Cha Kwang, Daniel P. Wirth, and Rogerio A. Lobo, "Does Prayer Influence the Success of in Vitro Fertilization-Embryo Transfer?" *The Journal of Reproductive Medicine* 46.9 (2001) 781-787.

<sup>29</sup> *Ibid.*, 783.

<sup>30</sup> *Ibid.*, 782.

<sup>31</sup> Losses during pregnancy in each group lowered the pregnancy rate to 46.6% for those receiving prayer and 22.2% for the control group.

<sup>32</sup> *Ibid.*, 785.

*Benson (2006)*

The most extensive study to date was published in 2006 under the direction of Herbert Benson.<sup>33</sup> It involved 6 different hospitals and 1802 cardiac bypass patients. The subjects were divided into three groups. Group one had 601 patients who knowingly received distant intercessory prayer. The remaining 1201 patients were told that they may or may not receive prayer. From this group 604 were selected to receive intercessory prayer and the remaining 597 did not. Prayer was provided for each patient for 14 days beginning the night before surgery by 3 Christian prayer groups who “agreed to add the phrase ‘for a successful surgery with a quick, healthy recovery and no complications’ to their usual prayers.”<sup>34</sup> Investigators examined the presence of complications within a 30-day period after the bypass procedure. They found that the three groups had a similar mortality rate. However, complications were highest in the group that received intercessory prayer and knew that this was happening (59%), compared to 52% for those who received intercessory prayer but were uncertain, and 51% of those who received no prayer at all. For comparison, the authors note that when performing this type of surgery approximately 40% have at least one complication within 30 days of coronary artery bypass grafting (CABG). They conclude that “intercessory prayer itself had no effect on complication-free recovery from CABG, but certainty of receiving intercessory prayer was associated with a higher incidence of complications.”<sup>35</sup>

### REACTIONS AND EVALUATIONS

Five of the studies surveyed above claim at least some positive result while two fail to support the efficacy of distant intercessory prayer. However, upon closer examination the picture is far less supportive. Joyce and Welldon found no statistical advantage in the group that received prayer. Collip claims that his data support the concept that prayer is efficacious, but his sample size is exceedingly small and his study is poorly designed. The research by Byrd is frequently cited as vindicating the power of intercessory prayer. However, not only do most of the outcomes he measured show no statistical significance, but Byrd was “unblinded” when he chose which criteria should be used in evaluating patient outcomes.

In addition, the investigation conducted by Harris has generated significant criticism because he claims success when only one of three metrics shows an advan-

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<sup>33</sup> Herbert Benson et. al., “Study of the Therapeutic Effects of Intercessory Prayer (STEP) in Cardiac Bypass Patients: A Multicenter Randomized Trial of Uncertainty and Certainty of Receiving Intercessory Prayer,” *American Heart Journal* 151.4 (2006) 934-942.

<sup>34</sup> *Ibid.*, 935.

<sup>35</sup> *Ibid.*, 934.



tage to the prayer group.<sup>36</sup> First, the intercessors were assigned to pray for both a speedy recovery and a lack of complications, yet there was no statistical difference between the two groups in the time they spent in the hospital. Second, when the authors used the same assessment criteria as Byrd, they found no statistical difference. Only when they utilized their newly created global outcomes scoring system did a positive result for prayer occur.

The study by Matthews, Marlowe, and MacNutt found no effect for intercessory prayer but did discern a result for direct contact prayer. However, as noted previously, the study had several limitations listed by the authors themselves. Moreover, they recognize that at least part of the results they measured might be attributed to patient perceptions. The research by Kwang and his colleagues has received scathing criticism because one of the authors, Daniel Wirth, has a history of involvement in parapsychology and was convicted of fraud for activities unrelated to this study.<sup>37</sup> Since Wirth was the person solely responsible for organizing the prayer groups, the validity of the findings has been called into question. Finally, the clinical trial by Benson is the most recent and extensive to date. The data not only indicate a lack of improvement in the patient's condition due to intercessory prayer but also demonstrate a negative effect if the patient knows that he or she is the object of intercession.

### *Paranormal Studies*

A review of these studies on prayer reveals a host of problems from both a scientific and theological perspective.<sup>38</sup> First, it is important to remember that the goal of these studies is to simply verify an effect. Even if it could be demonstrated that people praying at a distance for a patient impacts the health of that individual, one still has not discovered the mechanism at work producing the result. Prayer studies

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<sup>36</sup> Tessman and Tessman, "Efficacy of Prayer," 33; Mark S. Berger, "Perspectives on Praying for Healing," *Reconstructionist* 66.2 (2002) 82. Richard P. Sloan and Emilia Bagiella, "Editor's Correspondence: Data without Prayer," *Archives of Internal Medicine* 160.12 (2000) 1870; Willem Van der Does, "Editor's Correspondence: A Randomized, Controlled Trial of Prayer?" *Archives of Internal Medicine* 160.12 (2000) 1871.

<sup>37</sup> Leon Jaroff, "Questioning Healing Prayer," *Time*, 1 July 2004, n.p., <http://content.time.com/time/?health/article/0,8599,660053,00.html>. Dr. Bruce Flamm's continuing criticism of this study led Kwang to file a defamation lawsuit against Flamm.

<sup>38</sup> A number of authors have challenged the validity of the prayer study project as a whole. See Halperin, "Should Academic Medical Centers," 791-797; John T. Chibnall, Joseph M. Jeral, and Michael A. Cerullo, "Experiments on Distant Intercessory Prayer: God, Science, and the Lesson of Massah," *Archives of Internal Medicine* 161.21 (2001) 2529-2536; Betsy Perabo, "Studying the Effects of Intercessory Prayer on Healing: A Theological Examination," *Journal of Faith and Science Exchange* 1 (1997) 81-86, <http://digilib.bu.edu/journals/?ojs/index.php/jfse/issue/view/4>. See also the following editorials: Gerald P. Bodey, "Editor's Correspondence: Can the Efficacy of Prayer Be Tested?" *Archives of Internal Medicine* 162.12 (2002) 1420; Brian Bolton, "Editor's Correspondence: God, Science, and Intercessory Prayer," *Archives of Internal Medicine* 162.12 (2002) 1422.

cannot prove that God is the cause behind any discernible effect.<sup>39</sup> To illustrate this point, it is helpful to recognize that parapsychologists have been doing similar types of studies for years with no interest whatsoever in the Christian God. For example, Bruce Greyson studied distance healing on people suffering from major depression. The “healers” were all volunteers trained in the LeShan healing process.<sup>40</sup> Greyson describes the method as follows, “Unlike healing techniques that purport to transfer energy from the healer to the patient, in this method the healer accesses a state of consciousness that seems to facilitate an altered state for the patient, in which the patient’s own self-healing abilities are stimulated and enhanced.”<sup>41</sup> The results showed no significant advantage to the treatment group.<sup>42</sup>

However, Sicher oversaw a study on distance healing of a population with AIDS.<sup>43</sup> “Practitioners included healers from Christian, Jewish, Buddhist, Native American, and Shamanic traditions as well as graduates of secular schools of bioenergetic and meditative healing.”<sup>44</sup> The authors claim a statistically significant advantage to those undergoing distance healing. In speculating on a cause they suggest, “Possible mechanisms for DH [distance healing] might include some form of mind-to-mind communication between patient and practitioner or some form of previously undescribed energy transfer.”<sup>45</sup> This research indicates that even if one were able to document some statistically significant measure of healing in a group treated by a nonmedical approach such as prayer, meditation, incantations, or transpersonal imagery, the cause of a patient’s improvement would still be elusive.<sup>46</sup>

### *Retroactive Prayer*

Perhaps even greater caution is raised by the tongue-in-cheek study done by Leonard Leibovici on what he calls retroactive prayer.<sup>47</sup> His investigation included

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<sup>39</sup> This point is directly acknowledged by Harris et al., “A Randomized, Controlled Trial,” 2277.

<sup>40</sup> Bruce Greyson, “Distance Healing of Patients with Major Depression,” *Journal of Scientific Exploration* 10.4 (1996) 447-465.

<sup>41</sup> *Ibid.*, 449.

<sup>42</sup> Consider also the work by Jaap J. Beutler et al., “Paranormal Healing and Hypertension,” *British Medical Journal* 296 (1988) 1491-1494.

<sup>43</sup> Fred Sicher et al., “A Randomized Double-Blind Study of the Effect of Distant Healing in a Population with Advanced AIDS: Report of a Small Scale Study,” *Western Journal of Medicine* 169.6 (1998) 356-363.

<sup>44</sup> *Ibid.*, 359.

<sup>45</sup> *Ibid.*, 362.

<sup>46</sup> For more on transpersonal imagery see William Braud and Marilyn Schlitz, “A Methodology for the Objective Study of Transpersonal Imagery,” *Journal of Scientific Exploration* 3.1 (1989) 43-63.

<sup>47</sup> Leonard Leibovici, “Effects of Remote, Retroactive Intercessory Prayer on Outcomes in Patients with Bloodstream Infection: Randomised Controlled Trial,” *British Medical Journal* 323 (2001) 1450-1451.

3393 patients who had been hospitalized 4-10 years prior to the “clinical trial.” Patient names were randomly divided into two groups, “a remote, retroactive intercessory prayer was said for the well-being and full recovery of the intervention group.”<sup>48</sup> The justification for this practice is that one cannot assume that God is limited by linear time. Therefore, one might suggest God knew at the time of their hospitalization that certain patients would be prayed for in the future and God honored those future prayers.<sup>49</sup> Although the mortality rates were comparable in both groups, the length of stay in the hospital was significantly shorter for those who had received retroactive prayer. Leibovici concludes, “This intervention is cost effective, probably has no adverse effects, and should be considered for clinical practice.”<sup>50</sup>

Yet in a later editorial, the author makes it clear that his purpose was “to ask the following question: Would you believe in a study that looks methodologically correct but tests something that is completely out of people’s frame (or model) of the physical world?”<sup>51</sup> That Leibovici was able to find an “effect” raises questions regarding the validity of other prayer studies. That some have cited his study as demonstrating the effectiveness of prayer should cause even greater concern.<sup>52</sup> It appears that quite a number of authors have seen the results of the study but have not bothered to read the original article.

## SCIENTIFIC CRITIQUE

In addition to these cautions, the most fundamental problem these studies face from a scientific perspective is their inability to control the primary variable, prayer. In this respect prayer studies differ significantly from drug trials. Given the Christian cultural context, one must assume that at least some, if not many, in the control group were praying for themselves as well as receiving prayer from family, friends, and even clergy.<sup>53</sup> Imagine a drug trial in which an unknown number of patients in the control group were receiving the medication.

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<sup>48</sup> A short prayer was said for the group as a whole by one individual. *Ibid.*, 1450.

<sup>49</sup> One can find a similar argument promoted in a serious fashion by Cynthia Crysdale and Neil Ormerod, *Creator God, Evolving World* (Minneapolis: Fortress, 2013) 90.

<sup>50</sup> Leibovici, “Retroactive Intercessory Prayer,” 1451.

<sup>51</sup> Leonard Leibovici, “Author’s Reply,” *British Medical Journal* 324 (2002) n.p., doi: 10.1136/bmj.324.7344.1037.

<sup>52</sup> Cited without comment in Lee and Newberg, “Religion and Health,” 456. See also Brian Olshansky and Larry Dossey, “Retroactive Prayer: A Preposterous Hypothesis?” *British Medical Journal* 327 (2003) 1465-1468. Leibovici was trying to undermine the validity of such studies, but instead his research was treated as support for the efficacy of intercessory prayer.

<sup>53</sup> Several of the researchers readily admit that no attempt was made to restrain prayers for or by control group patients. In a recent survey done by Baylor, 78.8% of Americans have prayed at least once for their own healing and 87.4% of Americans have prayed at least once for the healing of someone else.

In addition, if one is to test prayer like a drug, then any study must also take into account issues surrounding dosage. Viewed from this perspective a host of variables begin to emerge: 1) number of people praying, 2) length of prayer, 3) fervency/potency of prayer, and 4) frequency of prayer. For example, is one person praying for an hour more effective than ten people who pray five minutes each? Does praying for two months provide more healing power than praying for one month? In addition, to these considerations one might add: 1) spiritual condition/religion of the one praying, 2) spiritual condition/religion of the one being prayed for, 3) level of relationship between the one praying and the one prayed for, and 4) specificity of the prayer. Does God honor everyone's prayers equally? Several biblical texts imply that the prayers of the righteous are more effective than others, and that the wicked might not be heard at all (Prov 15:29; Jas 5:16; and 1 Pet 3:12). Are all Christian denominations to be treated the same?<sup>54</sup> Researchers have taken different approaches in whom they recruit as intercessors. In some cases, these volunteers were simply required to be "active" Christians, while in other instances experienced prayer ministers or healers were utilized. If some prayers are more efficacious than others, it would be equivalent to giving patients in a drug trial varying but unspecified doses of the medication.

The more fundamental question, however, is whether it is appropriate to treat prayer as if it were analogous to a drug or other form of medical treatment. Prayer is a religious practice that seeks to bridge the gap between the physical and spiritual realms. To attempt to devise a study that detects the activity of God reaches beyond the limits of the scientific method. Harold Koenig, a well-known researcher in the field of religion and health, criticizes intercessory prayer studies as unscientific:

I think the double-blinded approach, where the effects cannot be explained by psychological, social, or behavioral mechanisms, is the wrong approach. Trying to prove the supernatural, which is what these studies are trying to do, is just inappropriate given the limitations of the scientific method. You can't control God, predict God's actions, prove God, or prove that prayer works. These are not scientific questions.<sup>55</sup>

This sentiment has been repeated by numerous critics of these studies. While the effects of prayer performed by patients themselves or by others in their presence

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Such statistics reinforce the likelihood of prayers for patients in the control group. Jeff Levin, "Prevalence and Religious Predictors of Healing Prayer Use in USA: Findings from the Baylor Religion Survey," *Journal of Religion and Health* 55 (2016) 1145.

<sup>54</sup> Brown criticizes the Benson study for recruiting one of their three prayer groups from a particular Protestant denomination which does not believe that prayer involves petitions to an external deity. Brown et al., "Proximal Intercessory Prayer," 865.

<sup>55</sup> Jamie D. Aten and Jane E. Schenck, "Reflections on Religion and Health Research: An Interview with Dr. Harold Koenig," *Journal of Religion and Health* 46.2 (2007) 188.

might be an appropriate topic of study from a psychological perspective, studies on distant intercessory prayer are based on no known physical mechanism for influencing patient outcomes. Although some investigators speak about the activity of God, others mention the possibility of a transfer of energy across great distances from the intercessor to the patient.<sup>56</sup> Consequently, while one might be able to design a study that controls for some of the variables listed above, any detected effect cannot unequivocally be attributed to God.

### THEOLOGICAL CRITIQUE

Clinical trials examining distant intercessory prayer face criticism from a theological perspective as well. Some researchers appear to work under the assumption that prayer is a way to control or even manipulate God's actions. Prayer becomes something akin to magic where use of the correct formula guarantees the desired result. The underlying presupposition is that God will not act unless prayer is involved but that if prayer is offered, the request will always be granted. However, prayer is far more theologically rich and nuanced than these notions reflect.

It is true that biblical authors describe examples of what appear to be miraculous answers to human prayers: Abraham heals Abimelech through intercession (Gen 20:17), Elijah asks God to raise a widow's son from the dead (1 Kgs 17:19-22), and Peter brings Tabitha back to life through prayer (Acts 9:40). In addition, Jesus himself encouraged his followers to pray and seems to assure them that they would receive a positive response: "For everyone who asks receives, and everyone who searches finds, and for everyone who knocks the door will be opened" (Matt 7:8); "Whatever you ask for in prayer with faith, you will receive" (Matt 21:22); "I will do whatever you ask in my name, so that the Father may be glorified in the Son. If in my name you ask me for anything, I will do it" (John 14:13-14).

Yet these promises are balanced by other texts in which certain prayers are not answered as requested. David pleads for the life of the child he conceived during his adulterous affair with Bathsheba, but the boy does not survive (2 Sam 12:15-23). Jesus asks for "this cup" to pass, referring to his coming crucifixion, which happens despite his prayer (Mark 14:36). Paul petitions for his thorn in the flesh to be taken away three times but instead receives the reply "my grace is sufficient for you, for my power is made perfect in weakness" (2 Cor 12:7-9).

Sometimes other considerations are involved beyond simply what the petitioner wants. Because of their limited perspective, Christians occasionally ask for out-

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<sup>56</sup> Consider this comment by Byrd, "Positive Therapeutic Effects," 829, "How God acted in this situation is unknown; i.e., were the groups treated by God as a whole or were individual prayers alone answered?" Studies which examine the ability of one person to influence the physical reactions of another person at a distance have been performed by psychologists. See Braud and Schlitz, "A Methodology for the Objective Study of Transpersonal Imagery," 43-63.

comes that are not in the best interest of themselves or others. In the case of the clinical trials, it is entirely possible that God might not heal someone in the treatment group who is receiving prayer because he has another purpose in mind. So, for example, while it might seem like a complication-free hospital stay would be best, one might imagine a scenario in which the difficulties faced by a particular patient with complications could end up drawing them closer to God.

### *God Acts in Spite of Our Prayers*

Many Christians believe that prayer influences God to act in ways he would not have done otherwise and that by not praying they will miss out on certain blessings.<sup>57</sup> In this view prayer is the means by which humans can tap into and access the power of God. Yet divine action in the world is not limited simply to the things humans request in prayer. God acts in the world to accomplish his will and bring about his purposes even when no human prayer is involved. One false presupposition underlying these clinical trials is that God will not act on behalf of someone unless they ask. Yet, on the contrary, God might choose to heal someone in the control group even if no one is praying for them.

### *Limitations to Prayer*

Another point to consider is that some requests might be outside the bounds of what one should expect regarding divine action in the world. Those who hold a traditional Christian perspective contend that God is at work in the world on a regular basis through secondary causes. So for example, God can heal through the hands of a doctor. Yet, on occasion, God will “intervene” in nature to bring about miraculous results, including unexpected healing. However, they also recognize limits to what one might expect God to do. For example, people pray that a tumor might shrink or disappear altogether, but they typically do not pray for a severed limb to miraculously grow back. Or they might pray for someone’s failing eyesight but not if the eye socket is empty. On a broader level, someone might pray that the flood waters will not reach their house, but they do not ask that God remove the water from the house that has already been flooded down the street. So even from a traditional perspective people recognize limits to what they should expect.

In more recent decades, however, some scholars have proposed numerous noninterventionist approaches which envision God working within the system of nature to bring about his will. One corollary that is typical of such views is that God, although he could do otherwise, has chosen to limit his actions to conform with the laws of nature. One popular advocate of a noninterventionist approach is John Polkinghorne who suggests that chaos theory provides God room to work in the

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<sup>57</sup> Wayne Grudem, *Systematic Theology: An Introduction to Biblical Doctrine* (Grand Rapids: Zondervan, 1994) 377.

world including answering particular prayers.<sup>58</sup> But he cautions about limits to what one should expect from prayer:

The succession of the seasons will be guaranteed by transcendent divine reliability, and it would indeed be foolish to pray for their alteration. The generation of weather is a much more complex process, within which it is conceivable that small triggers could generate large effects. Thus prayer for rain does not seem totally ruled out of court.<sup>59</sup>

In sum, prayer is a rational practice within limits, but not everything is an appropriate object of prayer.<sup>60</sup> What people choose to pray for reflects what they think God can do or at least chooses to do when interacting with the world.

### *Prayer Is More Than Petition*

Finally, the Christian practice of prayer is not limited to or primarily about petitions. Prayer is a form of interaction and communication with the Divine in which one's deepest needs and concerns are shared. It involves thanksgiving and recognition of the blessings in one's life. On other occasions prayer might take the form of lament or complaint, but it can also involve praise and worship. Requests are made with the belief that God has the power to act, but also with the realization that finite humans do not know what is best. Prayer is not primarily an attempt to conform God's will to human desires but to allow the Christian's own will to be reshaped by the Divine.

## ALTERNATIVE APPROACHES TO STUDYING PRAYER

This does not mean, however, that all scientific inquiry regarding intercessory prayer must be ruled out. Studies could be designed that would test more mechanistic or even magical views of prayer and perhaps help dissuade people from poor theology. Christians have a large variety of ideas about what prayer can accomplish. One Christian university, for example, sent a list of prayer requests to parents asking them to pray for a host of campus issues including a reduction in car thefts, flat tires, and "door dings." One could surely formulate a study to test the "prayer helps door dings" theory. Another possible topic of investigation would be to examine the idea

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<sup>58</sup> John Polkinghorne, *Science and Providence: God's Interaction with the World* (Philadelphia: Templeton Foundation Press, 2005) 81.

<sup>59</sup> *Ibid.*, 39.

<sup>60</sup> Another approach is represented by Denis Edwards who has modified Aquinas's view to argue that God always works through secondary causes without intervention. Yet our prayers do not cause God to act in a way he would not have otherwise, but through prayers individuals become participants with God sharing in the divine will for the world. Denis Edwards, *How God Acts: Creation, Redemption, and Special Divine Acts* (Minneapolis: Fortress, 2010) 169.

that the number of people praying increases the likelihood that a certain outcome would be accomplished. A clinical trial could compare one group of patients that is prayed for by a thousand intercessors and a second group which only has a single intercessor. The large size difference in intercessors would mitigate some of the supplementary prayer effect. These studies would neither prove nor disprove the activity of God, yet they could address certain fundamental assumptions some Christians have about how prayer works. However, it is hard to avoid the uneasy feeling that all such lines of inquiry are in some way “putting God to the test.”

### SUMMARY AND CONCLUSION

This article has surveyed the most well-known and influential scientific studies on prayer. In many ways this body of research is a disappointment. One might hope for a more resounding endorsement for the efficacy of prayer. However, this survey has revealed that even those studies which have claimed to demonstrate a positive result for intercessory prayer, upon closer examination, fail to establish definitive results. Yet should these findings lead Christians to abandon the practice of intercessory prayer? Should Christians be anxiously awaiting the next major prayer study to prove that prayer “works”? The answer to both questions is a resounding no. Instead this analysis has shown that clinical trials which attempt to discover a positive effect for distant intercessory prayer are both scientifically and theologically suspect. From a scientific perspective not only are these trials unable to control key variables, but any project which seeks to scientifically prove a spiritual effect has utilized an inappropriate method. Science studies things that can be measured and explained according to natural processes. They address the physical world and propose mechanisms for how an observed result might have happened. The answer “God did it” is not open to scientists.

From a theological perspective these studies often treat prayer as if it were magic, assuming that God must act in favor of those receiving prayer and will not act on behalf of those not receiving prayer. Yet Christian theologians recognize that the effectiveness of prayer to achieve a particular result is dependent on a host of factors many of which are outside the petitioner’s control. For every story of someone miraculously spared in an accident or healed from a life-threatening illness just as many stories exist of people who suffer and die despite prayers said by them or on their behalf.

The Christian faith has the fundamental belief that God acts on behalf of his people, but not all prayers are answered in the way they are requested. God has his own purposes in mind and sometimes these are inscrutable to those who look with merely human eyes. The belief that prayer is a worthwhile endeavor is not derived from nor based upon the results of any scientific study vindicating the power of prayer. To speak to the Divine and bring petitions before him is a matter of faith—a faith not in the power of prayer but in the one who hears these prayers. <sup>SCJ</sup>