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Spirituality and health supplement

Our recent supplement on spirituality and health has occasioned considerable controversy.
(*MJA* 2007; 186 (10 Suppl): S41-S76)

Supplement unbalanced

Chris O Jackson

TO THE EDITOR: The Journal's unbalanced supplement on spirituality and health fails to satisfy your policy on sponsored supplements, cites at least one fraudulent study, and contains much poor science and non-science. I discuss here only a fraction of the supplement's flaws.

Firstly, dissenting voices were not cited or discussed in the supplement. An objective appraisal of the field would have included sceptical viewpoints such as those of Paul,¹ who demonstrated lower levels of societal dysfunction in highly secular democracies than in more religious societies such as that of the United States. It is remarkable that the supplement article by Williams and Sternthal² ignored Paul's study.

Secondly, Jantos and Kiat³ cite Cha and Wirth's debunked Columbia University study into the relationship between intercessory prayer and fertility rates for in-vitro fertilisation treatment. Flamm, a Californian professor of obstetrics and gynaecology, demolished this article,^{4,5} and his rebuttal was reported widely.⁶ That this citation survived the peer review process suggests either that the reviewers did not know their field well enough, or that they deliberately allowed unqualified citation of a fraudulent study. Either way, they failed in their role as reviewers.

Thirdly, Jantos and Kiat state that scientific investigation of prayer may not be possible, adding that scientists "must" accept that "some aspects of prayer . . . may go beyond the reach of science". (Yet prayer's putative physical effects must be measurable!) They also regard bible stories of Jesus' healings as scientifically valid observations, stating that "All were examples of healing by supernatural means" — an unsupported, unscientific statement of belief that has no place in a peer-reviewed scientific journal. Similarly, Eckersley⁷ states that "we are spiritual beings, psychically connected to our world". It is extraordinary and lamentable that statements such as these survived the editorial process.

Finally, potential authorial conflict of interest is not disclosed. Koenig⁸ is the Co-Director of the Center for Spirituality, Theo-

logy and Health at Duke University Medical Center, a significant role that is not noted in his author details. Despite Jantos and Kiat's assertions about the limitations of science, Koenig's Center supports many studies of prayer.

The well funded, US-based push to research the interface between religion and science, especially medical science, jeopardises scientific integrity. Its apotheosis, the Templeton Prize, is — at \$US1.5 million — the world's richest academic prize.⁹ The Journal's supplement is best perceived as being a part of this agenda. It is an indictment on the *MJA* as a scientific journal that it was published.

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- 1 Paul GS. Cross-national correlations of quantifiable societal health with popular religiosity and secularism in the prosperous democracies. *J Relig Soc* 2005; 7: 1-17. <http://moses.creighton.edu/JRS/2005/2005-11.html> (accessed Jul 2007).
- 2 Williams DR, Sternthal MJ. Spirituality, religion and health: evidence and research directions. *Med J Aust* 2007; 186 (10 Suppl): S47-S50.
- 3 Jantos M, Kiat H. Prayer as medicine: how much have we learned? *Med J Aust* 2007; 186 (10 Suppl): S51-S53.
- 4 Flamm BL. The Columbia University "Miracle" Study: flawed and fraud. *Skeptical Inquirer* 2004; 31: 19-20. <http://www.csicop.org/si/2004-09/miracle-study.html> (accessed Jul 2007).
- 5 Flamm BL. Faith healing confronts modern medicine. *Sci Rev Altern Med* 2004; 8: 9-14. http://www.sram.org/0801/v8n1_columbia_prayer.pdf (accessed Jul 2007).
- 6 Jaroff L. Questioning healing prayer. *Time* 2004; 1 July. <http://www.time.com/time/columnist/jaroff/article/0,9565,660053,00.html> (accessed Jul 2007).
- 7 Eckersley RM. Culture, spirituality, religion and health: looking at the big picture. *Med J Aust* 2007; 186 (10 Suppl): S54-S56.
- 8 Koenig HG. Religion, spirituality and medicine in Australia: research and clinical practice. *Med J Aust* 2007; 186 (10 Suppl): S45-S46.
- 9 Saxton A. "Sir John" Templeton's Foundation and the new trinitarianism. *Free Inquiry* 2007; 27: 27-34. □

Religion as a competing interest

Jon Clarke

TO THE EDITOR: I take issue with the presentation of evidence by Jantos and Kiat¹ — firstly, on the effect of intercessory prayer

on health, and secondly, on prayer as a supernatural intervention.

The minor positive findings of the Byrd study² on prayer for coronary care patients, given so much column space, have proved non-reproducible.³ When meta-analysis is applied to the review by Astin et al⁴ of randomised trials of "distant healing", the quoted "inconsistent" results of prayer become most definitely non-significant.⁵ The largest and most robust trial of prayer, by Benson et al (involving 1802 subjects),⁶ showing no positive effect of prayer on recovery after heart surgery, is mentioned but somewhat dismissed by Jantos and Kiat. As for the Cha and Wirth study on prayer and in-vitro fertilisation⁷ cited by the authors, simple investigation reveals it to have been an embarrassing fraud. The article was subsequently removed from the journal that published it, and one of the authors went to jail.

In the section entitled "Plausible mechanisms by which prayer delivers health benefits", the paragraph on "supernatural intervention" includes bible quotations on healing miracles presented as "evidence". This may constitute sectarian theological material, but it is not medical science.

Analogous to the financial interests of authors, religious groups have their own vested interest in the outcome and interpretation of medical studies involving religious issues. This is due to the intrinsic nature of religious faith, whereby a point of belief constitutes an absolute truth to the believer, irrespective of any other data, but seems implausible to non-believers.

I would suggest that, for the benefit of a secular readership, in articles concerning religion and medicine in the Journal, the Editor should require the authors' religious position to be stated under "competing interests".

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- 1 Jantos M, Kiat H. Prayer as medicine: how much have we learned? *Med J Aust* 2007; 186 (10 Suppl): S51-S53.
- 2 Byrd RC. Positive therapeutic effects of intercessory prayer in a coronary care unit population. *South Med J* 1988; 81: 826-829.
- 3 Harris WS, Gowda M, Kolb JW, et al. A randomized, controlled trial of the effects of remote, intercessory

prayer on outcomes in patients admitted to the coronary care unit. *Arch Intern Med* 1999; 159: 2273-2278.

- 4 Astin JA, Harkness E, Ernst E. The efficacy of "distant healing": a systematic review of randomized trials. *Ann Intern Med* 2000; 132: 903-910.
- 5 Bolton B. Intercessory prayer [letter]. *Ann Intern Med* 2001; 135: 1094.
- 6 Benson H, Dusek JA, Sherwood JB, 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. *Am Heart J* 2006; 151: 934-942.
- 7 Cha KY, Wirth DP. Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized trial. *J Reprod Med* 2001; 46: 781-787. □

Statements of competing interest notably absent

Ross B Holland

TO THE EDITOR: In your recent supplement on spirituality and health, I note that none of the authors cited competing interests. However, several authors gave their affiliations as Loma Linda University, an institution owned and operated by the Seventh-day Adventist Church, a fundamentalist Christian sect with strong evangelical and millenarian beliefs. I also note the financial support given to the publication by the same church. Does the above not constitute "competing interests"?

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Gratuitous and without scientific substance

Lahn D Straney

TO THE EDITOR: It is an embarrassment to your Journal that an article such as Jantos and Kiat's "Prayer as medicine: how much have we learned?"¹ should have been allowed publication. The article neglects to apply scientific rigour to the topic of prayer research in failing to effectively review the most significant and largest studies on the efficacy of prayer.²⁻⁵ The results of the largest study of third-party prayer, which suggested such prayer was ineffective in reducing complications following heart surgery, were noticeably absent.²

The article by Jantos and Kiat¹ begins by suggesting that a spiritual search for meaning and hope is integral to human existence.

This may be true for some, but certainly not all — which means that it can not be "integral" to human existence.

Their abstract asserts the efficacy of prayer, without showing a causal relationship between prayer and improved outcomes anywhere in the article. Articles discussing the efficacy of prayer should include, if not an original study, a meta-analysis and interpretation of existing studies.

The article also outlines "plausible mechanisms by which prayer delivers health benefits", one of which includes the claim that it could in fact involve "supernatural intervention". In a scientific publication, such a suggestion deserves thorough scientific evidence. Instead, all the authors provide is an anecdotal story and a bible passage.

The article also uses the phrase "critics of prayer research", presumably to describe people who are critical of the efficacy of prayer. A distinction is important, because critics of the efficacy of prayer are not necessarily critical of the research. In fact, critics would most likely encourage research so that they can, if evidence warrants, show how ineffective prayer is.

Furthermore, the statement "prayer may not be transparent to scientific investigation and may go beyond the reach of science" begs the question: what, if prayer is beyond the realms of science, is this article doing in a scientific journal?

Your publication has lent undue credibility to a gratuitous article without scientific substance.

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- 1 Jantos M, Kiat H. Prayer as medicine: how much have we learned? *Med J Aust* 2007; 186 (10 Suppl): S51-S53. □
- 2 Benson H, Dusek JA, Sherwood JB, 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. *Am Heart J* 2006; 151: 934-942.
- 3 Aviles JM, Whelan SE, Hernke DA, et al. Intercessory prayer and cardiovascular disease progression in a coronary care unit population: a randomized controlled trial. *Mayo Clin Proc* 2001; 76: 1192-1198.
- 4 Krucoff MW, Crater SW, Gallup D, et al. Music, imagery, touch, and prayer as adjuncts to interventional cardiac care: the Monitoring and Actualisation of Noetic Trainings (MANTRA) II randomised study. *Lancet* 2005; 366: 211-217.
- 5 Astin JA, Stone J, Abrams DI, et al. The efficacy of distant healing for human immunodeficiency virus — results of a randomized trial. *Altern Ther Health Med* 2006; 12(6): 36-41. □

Seeking clarification

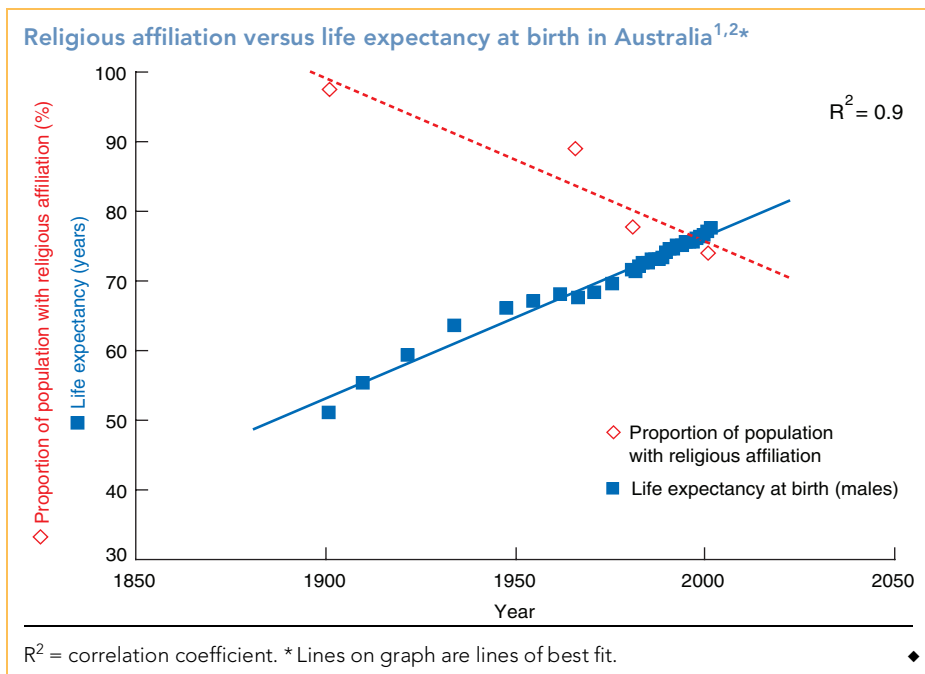
Tom Huang

TO THE EDITOR: I am seeking some clarification on the recent *MJA* supplement article by Jantos and Kiat.¹ One of the mechanisms suggested by the authors for the alleged beneficial effect of prayer is that it is "a channel for supernatural intervention".

Can I just clarify with you, given the vagueness of the statement and the religious overtone of the paragraphs that followed it, whether the authors were implying that there is a personal, caring God who performs supernatural interventions for people who pray — ie, that the beneficial effects are a direct result of such interventions. Or are they saying that the *belief* in the existence of such a being is itself the plausible mechanism — in which case, it should be more appropriately classified as a "placebo" effect (ie, the second mechanism listed in their article).

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- 1 Jantos M, Kiat H. Prayer as medicine: how much have we learned? *Med J Aust* 2007; 186 (10 Suppl): S51-S53. □



Religious affiliation and life expectancy at birth

Robert F Grace

TO THE EDITOR: I read with interest the recent *MJA* supplement on spirituality and health. It is interesting to observe the relationship between religious affiliation and life expectancy at birth over the past 100 years using population data supplied by the Australian Bureau of Statistics (Box).^{1,2} The life expectancy data shown here is for males, but the graph is almost identical for females. While there are many variables in this relationship, they are akin to those chiefly neglected in most of the articles in the supplement. It is easy to see from the graph that, as religious affiliation within the community has declined, life expectancy (a gross surrogate measure of health) has increased. The correlation is very good.

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1 Australian Bureau of Statistics. Australian social trends, 2004. Canberra: ABS, 2004. (ABS Cat. No. 4102.0.)

2 Australian Bureau of Statistics. Australian historical population statistics, 2006. Table 48: Life expectancy at birth (years) by sex, states and territories, 1881 onwards. Canberra: ABS, 2006. (ABS Cat. No. 3105.0.65.001.) □

Spirituality and health

Hosen Kiat and Marek Jantos

IN REPLY: The spirituality and health supplement was a compendium on religion and spirituality in clinical practice, based on recent presentations at the National Spirituality and Health Conference. The authors sought to highlight clinically relevant research exploring associations between religiosity and health.

Clarke and Jackson express concerns about the quality of the literature on intercessory prayer. Yet *all* the studies on intercessory prayer cited in our article on prayer and medicine¹ belong to references included in the 2007 Cochrane database systematic review on the subject.² As stated by Clarke, the pioneering work of Byrd was given prominent mention, by being the first of several studies on intercessory prayer employing a prospective, randomised, double-blind protocol.

Clarke and Jackson question the ethics of not declaring authors' religious affiliations. This factor (along with other personal factors not listed as "competing interests", such as race, sex and age) should not influence the clarity, objectivity, and validity of peer-reviewed scientific publications, nor impair the authors' objectivity, integrity and performance as clinicians. Their concern about the legitimacy of citing biblical verse is also unfounded. The medical literature is replete with biblical citations. A recent publication on the topic of biblical origins of placebo³ is just one example from the MEDLINE database.

Straney expresses concern regarding the clinical relevance of prayer. More than 88% of the world's populations believe in the supernatural,⁴ and prayer, being one of the oldest and most widely practised spiritual rituals, is frequently practised by patients when they have health problems.¹ Knowing that patients commonly resort to prayer as a means of coping and finding meaning in life obliges clinicians to have some insight into how this practice affects patients' health. Courses in spirituality and medicine are now offered in medical schools in the United States.⁵

In examining the relationship between belief in supernatural agents and mortality, Norenzayan and Hansen⁶ concluded: "our findings support the idea that belief in the supernatural agency is a *core response* to the human awareness of mortality" (original authors' emphasis). Their conclusion supports the view that the spiritual search for meaning and hope in life is integral to human existence. Such exploration is virtually universal, albeit to varying degrees of depth, length and frequency.

The study by Benson et al that Straney alludes to as being absent from our article on prayer as medicine¹ was in fact cited (reference 12) and discussed in the body of the text. Our article reviewed the plausible mechanisms by which prayer may benefit individuals who engage in the practice. The postulation of a mechanism of action does not imply an explanation of aetiology. For example, a postulation that the resolution of an infection occurs through bacterial mitotic inhibition would neither prove nor disprove that a particular antibiotic is the agent of healing. Thus, Huang's contention that "belief in the existence of such a being [(God)] is itself the plausible mechanism . . . [and] should be . . . classified as a 'placebo' effect" is a naturalistic fallacy.

Grace cited data on religious affiliation and life expectancy among Australians. However, these data have not been subject to systematic and appropriate analysis for possible association. In contrast, religiosity was positively correlated with longevity among 10 000 Israelis over a 23-year period.⁷ Similar results were obtained in a 28-year follow-up of 5000 Californians.⁸ Religiosity was also shown to be an independent risk factor in a prospective study of over 300 elderly patients having cardiac surgery:⁹ compared with patients who reported preoperatively that they derived strength and comfort from their religious beliefs, those who didn't were found to have a threefold greater risk of perioperative and

6-month mortality. Furthermore, a study of 34 000 Seventh-day Adventists in California¹⁰ revealed that they outlived other white male and female Californians by 7.3 and 4.4 years, respectively, giving them probably the highest life expectancy of any formally described population.

Improved health practices and social connection are probably factors that provide a causal link between religious affiliation and health or longevity. In an era of spiralling health care costs, the big picture is the potential public health implications of religiosity as a low-cost health measure. Individuals or bodies responsible for health care policy, budgeting and delivery should welcome further exploratory research into the preventive and therapeutic effects and cost-effectiveness of religious practice in health promotion within appropriate community settings.

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- 1 Jantos M, Kiat H. Prayer as medicine: how much have we learned? *Med J Aust* 2007; 186 (10 Suppl): S51-S53.
- 2 Roberts L, Ahmed I, Hall S. Intercessory prayer for the alleviation of ill health. *Cochrane Database Syst Rev* 2007; (1): CD000368.
- 3 Jacobs B. Biblical origins of placebo [letter]. *J R Soc Med* 2000; 93: 213-214.
- 4 Zuckerman P. Atheism: contemporary rates and patterns. In: Martin M, editor. *The Cambridge companion to atheism*. Cambridge: Cambridge University Press, 2005.
- 5 Puchalski CM. Spirituality and medicine: curricula in medical education. *J Cancer Educ* 2006; 21: 14-18.
- 6 Norenzayan A, Hansen IG. Belief in supernatural agents in the face of death. *Pers Soc Psychol Bull* 2006; 32: 174-187.
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- 8 Strawbridge WJ, Cohen DA, Shema SJ, Kaplan GA. Frequent attendance at religious services and mortality over 28 years. *Am J Public Health* 1997; 87: 957-961.
- 9 Oxman TE, Freeman DH Jr, Manheimer ED. Lack of social participation or religious strength and comfort as risk factors for death after cardiac surgery in the elderly. *Psychosom Med* 1995; 57: 5-15.
- 10 Fraser GE, Shavlik DJ. Ten years of life: is it a matter of choice? *Arch Intern Med* 2001; 161: 1645-1652. □

a perceived incongruity between spirituality and evidence-based medicine, with its requirement for evidence that is controlled, measured, counted and analysed by statistical methods.¹ But the task of physicians has always been to understand not only the disease but also the patient. And for some patients, religion and spirituality are important — or, indeed, central — to their lives and health. The purpose of the supplement was to explore this area.

Jackson is perturbed that, in publishing the supplement, the Journal has sold its scientific soul. However, one of the goals of the Journal is to provide a scholarly forum for continuing education and informed debate on standards of clinical practice, ethics, and social, legal and other issues related to health care in Australia.²

While it must be acknowledged that religion and spirituality involve areas of knowledge not governed by the scientific method, it would be intellectually dishonest to refuse to consider any role for spirituality in health care.

Jackson also alleges that the supplement fails to satisfy the Journal's policy on sponsored supplements, but proffers no evidence. In fact, the supplement complies completely with our policy for such publications.³

Despite the ongoing conflict between science and spirituality, exploration of the latter is increasingly considered for inclusion in modern medical curricula.

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- 1 Malterud K. The art and science of clinical knowledge: evidence beyond measures and numbers. *Lancet* 2001; 358: 397-400.
- 2 Van Der Weyden MB. From the Editor's Desk ... the Journal [editorial]. *Med J Aust* 1995; 162: 344.
- 3 Van Der Weyden MB. *In Reply*: You oughta be congratulated [letter]? *Med J Aust* 2002; 177: 400. □

Martin B Van Der Weyden

IN REPLY: The MJA's spirituality and health supplement has reawakened the long-standing tension between supporters of science and supporters of spirituality, and I welcome their conflicting and unaccommodating views. The barrage of letters received reflects