Does religious activity improve health outcomes: a critical review of the recent literature

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CRD summary
The authors concluded that religious activity may improve health outcomes. The limited search, insufficient detail on included studies and inclusion of multi-component interventions make it difficult to adequately assess the reliability of the authors’ conclusions.

Authors' objectives
To evaluate the effects of religious activity on health outcomes and, in the process, update a previous systematic review (see Other Publications of Related Interest).

Searching
MEDLINE was searched from 1999 to June 2003 for studies published in English, using the reported search terms. In addition, reference lists of identified studies were screened.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) and clinical trials were eligible for inclusion. After screening studies identified by the search, the reviewers also included studies that did not meet the criteria for clinical trials but evaluated partnerships with faith-based organisations.

Specific interventions included in the review
Studies that evaluated religious interventions were eligible for inclusion. Religion was defined as a set of beliefs about the cause, nature and purpose of the universe, with beliefs and practices generally agreed by a number of people or sects. Studies of spiritual interventions (defined as personal beliefs and behaviour) were excluded, as were studies that evaluated the refusal of treatments on religious grounds.

The included studies evaluated intercessory prayer (IP; including retrospective IP, distant and in-person IP), noetic therapy (that included off-site IP, relaxation, imagery and touch therapy), expectation of IP, nonreligious visualisation, and meditation plus nondirected prayer. Faith-based partnership interventions included: interventions aimed at increasing fruit and vegetable intake using a combination of methods; interventions aimed at improving cardiovascular risk factors using standard behavioural interventions, self-help and spiritual intervention; and interventions aimed at increasing mammography uptake using cancer education interventions led by cancer survivors.

Participants included in the review
Inclusion criteria were not specified for the participants. The primary studies included a variety of participants, details of which were presented in the ‘Results’ section.

Outcomes assessed in the review
Studies that assessed health outcomes were eligible for inclusion. Included studies assessed a variety of physical and mental health outcomes, details of which were presented in the ‘Results’ section.

How were decisions on the relevance of primary studies made?
Four reviewers independently selected the studies and resolved any disagreements through reaching consensus.

Assessment of study quality
RCTs were assessed using the Consolidated Standards of Reporting Trials (CONSORT) guidelines. Other studies were assessed using guidelines published in the Canadian Medical Journal. The reviewers assessed validity as a group.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data...
Methods of synthesis
How were the studies combined?
The studies were grouped by study design (RCTs and clinical trials) and each study was described in the text of the review. Studies that evaluated faith-based partnerships were discussed separately.

How were differences between studies investigated?
Differences between the studies were apparent from the text.

Results of the review
Fifteen studies were included in the review of efficacy (n at least 6,889): 5 RCTs (n=5,263), 4 studies described as clinical trials (n at least 160) and 6 studies that evaluated faith-based partnerships (n at least 1,466). The number of participants was not reported for all studies.

RCTs.
One double-blind RCT (219 women undergoing in vitro fertilisation) reported that women allocated to distant IP had significantly higher pregnancy rates (50% versus 26%, p=0.0013) and implantation rates (16% versus 8%, p=0.0005) than non IP women.

One RCT (approximately 4,000 adults with bloodstream infections) reported that retrospective distant IP was associated with a significant decrease in hospital stay (p=0.01) and duration of fever (p=0.04); the reviewers also reported that there was no difference in the median duration of fever.

One double-blind RCT (799 patients discharged from a coronary care unit) reported no significant differences between distant IP and no IP in death, revascularisation, emergency department visits or cardiac arrest.

One RCT (150 patients undergoing percutaneous coronary intervention) reported that noetic therapy plus standard treatment was associated with a statistically non significant reduction in adverse periprocedural outcomes. The only deaths occurred in patients allocated to noetic therapy (9.2% over 6 months).

One RCT (95 adults with end-stage renal disease) evaluated expectation, IP, nonreligious positive visualisation and no intervention in a 2x3 factorial trial. It reported no significant difference in medical or psychological outcomes between IP and positive visualization, but found that patients who expected to receive IP reported significantly improved well-being (p<0.02).

Clinical trials.
Four studies described as clinical trials were included. These examined disease activity in rheumatoid arthritis patients, immunological indicators in metastatic breast cancer patients, anxiety in students, and health and social outcomes in healthy individuals. All reported positive effects of religious activity.

Faith-based partnerships.
Six studies described as faith-based partnerships were included. These assessed fruit and vegetable consumption, cardiovascular risk factors and mammography uptake. All reported positive effects of the (often multi-component) interventions.

Cost information
One study examined the cost-effectiveness of an intervention to increase mammography uptake and reported start-up costs of $11 per participant plus $188 for each additional screening.

Authors' conclusions
Religious activity may improve health outcomes.

**CRD commentary**
The review addressed a research question that was defined in terms of the intervention and study design. However, inclusion criteria were broad for the outcomes, not adhered to for study design (studies of faith-based partnerships that were not clinical trials were included), and not defined for participants. The search strategy was limited to English language reports listed in one electronic database, thus the possibility of publication and language bias is highly likely. Validity was assessed using referenced criteria, but only some aspects of validity were reported in the text and the design of the included studies was not always clear. Methods were used to minimise reviewer error and bias in the study selection and validity assessment processes, but it was not clear whether similar steps were taken in the extraction of data.

In view of the heterogeneity among the studies, a narrative synthesis with studies grouped by study design was appropriate. However, the sample size and results data from individual studies were not reported consistently, which means it is not possible to verify findings reported in the review. In addition, since several interventions were multi-component interventions it was difficult to determine which component is effective. The limited search, incomplete information about the included studies, and the inclusion of multi-component interventions make it difficult to adequately assess the reliability of the authors’ conclusions.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated the need for higher-quality research to evaluate the effects of religion on health outcomes. There is also a need to evaluate the effect of expectation and to evaluate the efficacy of noetic therapy in larger studies that are monitored by safety boards.

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**Other publications of related interest**

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.