CRD summary
This review concluded that interventions involving lay health advisers targeting cardiovascular risk reduction resulted in positive outcomes. The review suffered from limitations, including the possibility of missing studies, lack of details on the review process, no details on the reliability of the included studies, and a lack of synthesis across studies, which means that the authors' conclusions are unlikely to be reliable.

Authors' objectives
To provide a comprehensive review of the roles, evaluation, and effectiveness of lay health advisers in community-based programmes with an emphasis on cardiovascular risk reduction.

Searching
PsycINFO, PubMed, Social Sciences Index, and the Cochrane Library were searched for articles from 1980 to 2007. The search terms were reported and manual searches were also conducted, but the details of these were not reported. The review was restricted to English-language studies.

Study selection
Studies on lay health adviser-facilitated health promotion programmes that focused on cardiovascular risk reduction including smoking cessation, hypertensive management, diabetes management, weight management, dietary modification, modification of blood lipids, and promoting physical activity, were eligible for inclusion. Lay health advisers were defined as any health worker carrying out functions related to health care, with training in the context of the intervention, and having no formal certification as a health care professional. Studies had to report outcomes beyond a description of the programme itself.

Included studies generally targeted vulnerable and underserved populations and were individually focused, community-oriented, and church-based. Most of the studies involved the lay health advisers in intervention recruitment, delivery, provision of programme information, support and motivation for ongoing participation, leading educational classes, one-on-one counselling, and participation in church- and community-based groups. Training for lay health adviser roles ranged from four to 45 hours and included educational seminars, role playing, and interactive practice sessions. In some studies lay health adviser activities were one component of multilevel interventions. The outcomes assessed included weight loss, change in body mass index (BMI), reduction in blood pressure, reduction in serum cholesterol levels, smoking cessation, consumption of fruit and vegetables, decreased consumption of dietary fat, physical activity, flexibility, knowledge improvement, resource identification, programme sustainability, and coalition development. Interventions ranged from six to 36 weeks in duration.

The authors did not state how the papers were selected for the review, nor how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The data were extracted on the overall findings of each study and the significance of effects. The authors did not state how the data were extracted for the review, nor how many reviewers performed the data extraction.

Methods of synthesis
A narrative synthesis was reported, grouped by outcome types.

Results of the review
Twenty studies (at least 4,412 participants) were included in the review and eight were randomised controlled trials.
(RCTs), with at least 1,779 participants in total.

**Smoking cessation** (four studies; two RCTs): The RCTs both reported statistically significant reductions in smoking cessation in intervention groups compared with control (p=0.037 and 0.014). The two non-randomised studies reported greater proportions of smoking cessation in the intervention group compared with control, but the statistical significance of these findings was not reported.

**Physical activity** (four studies; two RCTs): One of the RCTs reported statistically significant reductions in BMI and weight (p<0.05), but the other RCT found no significant differences between groups. The other two studies were single-group studies and did not report on the effectiveness of the interventions.

**Physical activity and nutrition** (five studies): All studies reported statistically significant beneficial effects (p<0.05) on outcomes relating to physical activity (flexibility and muscular exercise, weight loss, physical activity, exercise attendance, BMI, waist circumference, and walking) and in positive eating behaviours (increased fruit and vegetable intake and decreased fat consumption).

**Single studies:** The following interventions were each evaluated in a single study and there was insufficient data to draw conclusions: hypertensive management; nutrition; diabetes management; physical activity and cardiovascular education; nutrition, physical activity, and hypertensive management; diabetes management, physical activity, and nutrition; physical activity, nutrition, and maintaining a smoke-free environment.

**Authors' conclusions**
Lay health adviser interventions targeting cardiovascular risk reduction were found to result in positive outcomes.

**CRD commentary**
The review addressed a broad question supported by inclusion criteria that were defined in terms of interventions and outcome. The literature search was adequate for published studies, but restricted to English-language studies and did not include attempts to locate unpublished studies, which means that there is a possibility of language and publication bias. Details of the review process were not reported, which makes it impossible to determine whether appropriate steps were taken to minimise bias and errors. Study quality was not formally assessed and so the reliability of the included studies is unclear. A narrative synthesis was appropriate, but very few results of the included studies were discussed in the text. Instead these had to be deduced from the summary tables, which sometimes lacked detail on the magnitude and/or statistical significance of the effects reported. This made it very difficult to interpret the results.

This review suffered from several limitations and so the authors' conclusions are unlikely to be reliable.

**Implications of the review for practice and research**
- **Practice:** The authors did not state any implications for practice.
- **Research:** The authors stated that additional research was needed, beyond a focus on the individual, to explore the social context, resources, and strengths related to cardiovascular risk reduction.

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Record Status
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.