Outcomes of community health worker interventions

CRD summary
The review assessed the effectiveness and cost of community health workers in terms of outcomes such as health care utilisation, disease and injury prevention, maternal and child health, cancer screening and chronic disease management. Improvements in health outcomes by community health workers were demonstrated for some outcomes, but evidence was weak or mixed for most outcomes. These conclusions appear reliable.

Authors' objectives
To obtain evidence on the characteristics, effectiveness and costs of community health worker interventions.

Searching
MEDLINE, EMBASE, CINAHL were searched for studies published between 1980 and 2008. Cochrane Central Register of Controlled Trials (CENTRAL) was searched (the authors did not report the year and Issue number). Searches were restricted to English-language in USA. Search terms were reported. Reference lists of retrieved papers were searched manually. Experts were consulted for unpublished studies.

Study selection
Randomised controlled trials and comparative non-randomized cohorts studies that assessed the effect of interventions of community health workers in which the effect of the intervention could be evaluated independently were eligible for inclusion in the review. Studies that had fewer than 40 subjects were excluded.

Four reviewers independently applied the inclusion criteria and selected the studies. Disagreements were resolved by consensus.

Assessment of study quality
Quality of included studies was assessed using a validated quality assessment tool with nine key domains for observational studies: background, sample selection, specification of exposure, specification of outcome, soundness of information, follow-up, analysis comparability, analysis of outcome and interpretation. For RCTs the quality of randomization was an additional domain. The authors reported in detail how each quality indicator was assessed. Strength of evidence was evaluated based on Agency for Healthcare Research and Quality Comparative's Effectiveness Methods Guide. The tool incorporates assessment of risk of bias, consistency, directness and precision of the effect estimates.

Two reviewers assessed quality of the included studies and resolved disagreements by consensus.

Data extraction
Where reported, mean difference, risk ratio and odds ratio (with 95% CIs) or proportions with p-values were extracted from the included studies for relevant outcomes.

Methods of synthesis
Studies that reported outcomes of community health worker interventions were combined in a narrative synthesis and grouped according to the focus of the intervention (health promotion, injury prevention, maternal/child health, cancer screening and chronic disease management).

Results of the review
Fifty-three studies met the inclusion criteria: eight studies were classified as low intensity, 18 were moderate and 27 high based on the type and duration of interaction.

Compared with alternatives such as media, mail and usual care plus pamphlets or no intervention, community health
worker interventions led to improved knowledge of participants on disease prevention and cancer screening, but the strength of evidence was only moderate (five studies). There was mixed evidence for community health worker effectiveness on participant behaviour change (22 studies) and health outcomes (27 studies). Some studies suggested that community health worker interventions resulted in greater improvements in participant behaviour and health outcomes when compared with various alternatives. Other studies suggested that community health worker interventions provided no statistically significant difference in benefit compared with alternatives. Community health workers increased appropriate health care utilisation for some interventions, but the strength of evidence was low-to-moderate (30 studies).

Analysing by clinical context showed that community health worker interventions had the greatest effectiveness compared with alternatives on some disease prevention, asthma management and cervical cancer and mammography screening. Community health worker interventions were not significantly different from alternatives for clinical breast examination, breast self-examination, colorectal cancer screening, chronic disease management and most maternal and child health interventions.

Cost information
All studies included in the review estimated intervention program costs, but not all reported the specific components of costs or year for which costs were estimated. Six studies provided economic analyses of community health worker interventions, but none reported a standard measure of costs per quality-adjusted life year saved. The one study that reported costs per life-year saved with community health worker intervention may have been biased by the measurement used. The authors found insufficient evidence on whether community health worker interventions were a cost-effective alternative to clinical interventions to promote health and prevent disease.

Authors' conclusions
Community health workers can serve as a means of improving outcomes for underserved populations for some health conditions, but their effectiveness in many areas requires further research to address the methodological limitations of primary studies and to translate research into practice.

CRD commentary
The review addressed a broad topic in terms of participants, interventions, outcomes and study design. The search included appropriate electronic databases. However, the restriction of searches to studies in English raised concerns about whether all relevant data were included. The restriction of studies to those conducted in USA settings raised concern about the application of the evidence in other countries. The exclusion of RCTs and non-RCTs that involved fewer than 40 participants may not have been justified.

The authors attempted to minimise bias and errors during the review process by selecting studies, extracting data and assessing quality of included studies independently by multiple reviewers. Validity was assessed using a quality assessment tool with nine key quality domains. The details of the individual components and how each domain was assessed were reported. The authors explored sources of heterogeneity and risk of bias in the included studies and addressed them, but there were methodological limitations in most of the studies included in the review.

The conclusions appear reliable, but given the mixed results it was understandable that the authors suggested further research was needed.

Implications of the review for practice and research
Practice: Community health workers may serve as a means of improving outcomes of some diseases such as asthma and diabetes management and cervical cancer and mammography screening for underserved populations.

Research: Further research that addressed the methodological limitations of prior studies was required to fully evaluate the effectiveness of community health worker interventions. There was a need for research focused on translating evidence from research into practice.

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