A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors

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CRD summary

The authors concluded that group and individual interventions of varying intensity in primary health care and community settings were useful in supporting sustained change in health literacy for change in behavioural risk factors. These conclusions reflect the findings and appear reliable, but the limitations of the evidence base should be considered.

Authors' objectives

To determine the effectiveness of primary care interventions to improve health literacy for supporting changes in smoking, nutrition, physical activity, alcohol and weight.

Searching

Eleven databases (including MEDLINE, EMBASE and The Cochrane Library) were searched for papers published in English between January 1985 and April 2009. Google Scholar and four targeted journals (named in paper) were searched to locate further studies.

Study selection

Eligible studies had experimental, quasi-experimental, cohort, observational or before-and-after designs, with interventions delivered in primary care settings in countries belonging to the Organisation for Economic Co-operation and Development (OECD). Primary care settings were defined in the review. To be included, interventions had to promote positive change in risk behaviours for smoking, nutrition, alcohol intake, physical activity and/or weight among adults (aged 18 years and over). Interventions had to report an outcome for change in behavioural risk factors and at least one outcome of health literacy.

Included studies were conducted in the USA, Australia/New Zealand and other OECD countries. Interventions mostly consisted of group education, individual counselling, or multiple intervention components; levels of intensity varied across the studies. Intervention settings included primary health care (28 studies), the community (20 studies), and other settings including hospital outpatients clinics and work sites (four studies). Nutrition and physical activity were the most commonly targeted risk behaviours; alcohol intake was only targeted by two studies. Health literacy measures included alterations in participants' stages of change (according to the transtheoretical model), and improvements in knowledge, skills, and self-efficacy required for positive changes in behavioural risk factors.

Two reviewers each independently assessed half of the studies for inclusion; uncertainties were resolved by involvement of a third reviewer and discussion with the project team.

Assessment of study quality

Quality of studies was assessed using a checklist from the Effective Public Health Practice Project. Checklist criteria related to selection bias, study design, confounding, blinding, data collection methods, withdrawals and dropouts, intervention integrity and analysis.

One reviewer assessed study quality using low, moderate or high ratings; a second reviewer verified 20% of the ratings randomly.

Data extraction

Data on outcomes (changes in measures of behavioural risk factors and health literacy) were extracted by two reviewers. Behavioural risk factor interventions were grouped into categories according to content and mode. Each intervention was then classified according to intensity of contact with the participants and setting (category definitions presented in paper).
Methods of synthesis
Data from the studies were presented within a narrative synthesis. Interventions were only included in the synthesis of findings if they were assessed as effective (reported a statistically significant positive change for the health literacy or behavioural risk factor outcomes).

Results of the review
Fifty-two studies were included in the review (number of participants not reported). The quality of the 38 studies (73%) that reported positive changes in health literacy was mostly rated as being moderate (26 studies), with a small number rated as low (four studies) or high quality (eight studies). Follow-up of these 38 studies was reported as being less than six months (13 studies), six to 12 months (20 studies), or more than 12 months (five studies).

Various intervention types and settings were associated with positive changes in health literacy (38 studies; 73%). Equal proportions of low and high intensity interventions reported significant positive changes in health literacy (15 studies; 39% for each).

Most interventions were also associated with significant positive changes in smoking, nutrition, physical activity, alcohol and/or weight (39 studies; 75%). Low intensity interventions more commonly reported significant positive changes in the behavioural risk factor outcomes (17 studies; 43%), than the high intensity interventions (13 studies; 33%). More interventions in primary health care were effective in smoking cessation, compared with interventions in the community; although the reverse was found for diet and physical activity interventions.

Authors' conclusions
Group and individual interventions of varying intensity in primary health care and community settings were useful in supporting sustained change in health literacy for change in behavioural risk factors.

CRD commentary
The review question was clear and supported by replicable inclusion criteria. Relevant data sources were accessed, but search restrictions to papers published in English increased the risk of potentially relevant studies being missed. Attempts were made throughout the review process to minimise any reviewer error or bias. The quality assessment tool used seemed suitable; most studies assessed were found to be of moderate quality. Study details were presented and the narrative form of synthesis seemed appropriate, given the clinical and methodological differences between the studies.

One downside to the review was that the authors used vote counting methods to decide on studies that should be analysed. Such methods did not take account of the sample sizes of studies. In this particular review, the authors only included studies with statistically significant positive changes in the outcomes. This was likely to have caused the interventions, as a whole, to seem more effective than they actually were. The authors stated that the review's findings needed to be interpreted with caution because the included studies often focused more on behavioural risk factors than health literacy, and health literacy measures varied across the studies. They also stated that publication bias may have been present and that findings could not be generalised to non-OECD countries.

The authors’ conclusions reflect the findings, although the use of vote counting and restricted analysis of studies with significant, positive results, suggests that these conclusions may not be reliable.

Implications of the review for practice and research
Practice: The authors stated that interventions based in primary health care settings might be more effective for smoking cessation, and community-based interventions might be more effective in promoting healthy nutrition and physical activity.

Research: The authors stated that further research was required to investigate the interventions which were best suited to developing health literacy for individual risk behaviours, particularly in disadvantaged populations. There was also a need to develop and validate instruments in to improve measurement of health literacy, and to include health literacy as an intermediate outcome instead of having the endpoint risk behaviour as the only outcome.

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