Continuing education meetings and workshops: effects on professional practice and health-care outcomes

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Educational meetings alone, or as a component of multifaceted interventions, can result in small to moderate increases in the adoption by health-care professionals of desired behaviours. As there were only few studies on this topic from low- and middle-income countries, it is difficult to interpret the significance of the findings of this review for under-resourced settings.

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1. INTRODUCTION

It is widely accepted that continuing medical education (CME) is essential to enable health-care professionals to continue to acquire new medical knowledge and skills after completion of their formal training. In many countries CME has been made mandatory for continued health-care practice.

A variety of methods are being used in different settings to deliver CME, including meetings, courses and workshops, journals clubs, grand rounds and teaching, and self-learning using print or Internet-based materials (1). Since educational meetings and workshops are the most commonly used training method for CME, this review (2) sought to evaluate the benefits of educational workshops and meetings in terms of adoption of new practice behaviours and health-care outcomes for patients.

2. METHODS OF THE REVIEW

The review authors planned to include randomized controlled trials involving qualified health-care professionals or those undergoing postgraduate training in health-care delivery. Studies that evaluated conferences, lectures, workshops, seminars, symposia and courses were included. Primary outcomes were practice behaviours of health-care professionals, patient outcomes in health-care settings and patients’ subjective rating of health-care professionals’ performance. The methods used by the review authors to search the literature to identify the studies conform to Cochrane standards and appear to be comprehensive. The last search was conducted in February 2009.

Each author screened titles of retrieved studies and applied inclusion criteria independently. Using the criteria developed by the Cochrane Effective Practice and Organisation of Care Group (EPOC), two authors independently assessed the risk of bias in all included studies and rated the studies as having low, moderate or high risk of bias. Two of the authors independently extracted data from all studies using a standard EPOC data collection checklist.

The methods section of the review is detailed and difficult to follow. The authors subjectively categorized factors that could explain the effects of educational meetings and workshops, and used these categories in the analyses to assess variations in effect. One example of subjective categorization was seriousness (or...
importance) of an outcome. This was independently and subjectively categorized by two of the authors as high, moderate, or low.

The table containing the summary of findings clearly presents the results for the main comparison and the authors use a box plot to illustrate the adjusted risk differences by type of educational meeting. Publication bias is explored in a funnel plot, but this is not labelled clearly. The effects of interventions are presented logically in the text by comparison, with effects subgrouped according to the risk of bias identified in the studies.

**3. RESULTS OF THE REVIEW**

This review represents a substantial update of the original review, which was published in 2001. Forty-nine new studies have been included in the update, bringing the total number of included studies to 81. The total number of health-care professionals involved in the 81 trials was more than 11 000. Seventy-seven references are still awaiting classification.

Seventy of the 81 included studies were conducted in high-income countries. Most of the studies were set in general practice (43 studies). Others were set in hospitals (17 studies), the community (16 studies), or other settings (five studies). In most trials the health-care professionals were physicians. The educational meetings covered in the trials targeted a range of provider behaviours, including preventive care, prescribing practice, test-ordering behaviour, and general management of a wide range of problems. A total of 32 trials involved multifaceted interventions in which common co-interventions were reminders (five studies), patient education materials (five studies), supportive services (five studies), feedback reports (10 studies), and educational outreach (five studies). Educational meetings were generally interactive, didactic or of mixed format. Seventeen studies were judged by the authors to have a low risk of bias, 44 a moderate risk, and 20 a high risk.

In trials in which the intervention was multifaceted and included, among others, an educational component, health-care professionals in the intervention group were more likely to comply with the desired practice compared with health-care professionals in the group that did not receive the intervention (median adjusted risk difference 6%, interquartile range 1.8–15.9; 30 trials). In trials in which an educational meeting was the only intervention, compliance with the desired practice was also increased by a similar margin (median adjusted risk difference 6%, interquartile range 2.9–15.3; 19 trials). Patients were also more likely to achieve treatment goals with health-care professionals who were in the group that received a multifaceted intervention that included educational meetings as a component compared with patients treated by those who did not receive the intervention (median adjusted risk difference 3%; interquartile range 0.1–4; 5 trials); trials in which the intervention was educational meetings alone also yielded similar benefits for patients (median improvement 3%, interquartile range 0.9–4; 3 trials). The more frequently health-care professional attended educational meetings, the more likely they were to adopt desired behaviours (P<0.01, univariate meta-regression analysis). Also, meetings that combined interactive and didactic approaches were more effective in changing the behaviour of health-care professionals than meetings that were purely didactic or interactive. However, educational meetings appeared to be less effective in helping health-care professional adopt complex behaviours (adjusted risk difference -0.3), although the effectiveness of educational meetings increased with respect to serious outcomes (adjusted risk difference 7.1).

**4. DISCUSSION**

**4.1 Applicability of the results**
Educational meetings alone, or as a component of multifaceted interventions, can result in small to moderate increases in the adoption by health-care professionals of desired behaviours. The same interventions also lead to in somewhat smaller improvements in patient outcomes. Other types of intervention for facilitating continuing medical education, such as audit and feedback and educational outreach visits, demonstrate a similar effect on professional practice.

Overall, there was a lack of studies on this topic from low- and middle-income countries (only 11 of the 81 studies included in the review had been conducted in developing countries). This makes it difficult to generalize the findings of this review (and of other systematic reviews that have evaluated the effect of interventions to change professional practice) to under-resourced settings. Financial and human resources to fund and conduct educational meetings for continuing medical education are often lacking in under-resourced settings. Moreover, severe staff shortages on the one hand, and heavy demand for health services on the other, mean that it is difficult for health professionals to find time to attend educational activities. Staff shortages also mean that staff turnover is high, staff morale is low and any intervention aimed at changing clinical practice is difficult to sustain without continual external input (3). In particular, interventions brought to low-income countries from high-income countries often only have a sustainable impact while outside funding is available. Hence, interventions such as the Better Births Initiative have attempted to seek funding from local sources (4).

4.2 IMPLEMENTATION OF THE INTERVENTION

The review concludes that the effectiveness of educational meetings may be enhanced by using a mix of interactive and didactic approaches and by using strategies to increase attendance. Hence, in all settings every effort should be made to incorporate interactive learning approaches into standard didactic lessons. Health services in under-resourced settings should find ways to enable busy staff to join continuing medical education meetings without adding additional burden on them.

The incorporation of interactive approaches in educational meetings will require improved presenter skills, especially communication skills. Whenever possible, skilled presenters should be given opportunities to develop their public speaking and communication skills.

4.3 IMPLICATIONS FOR RESEARCH

More good-quality research is needed in low- and middle-income settings to determine the relevance and applicability of interactive educational meetings for CME. Although some relevant research has been conducted in these settings, the available studies are poorly designed and fail to exclude possible biases (5). More research is needed on ways to influence professional practice and patient outcomes in the private sector, particularly in developing countries. It is also probably worth exploring the impact of obtaining CME points, and whether this affects attendance rates in both developed- and developing-country settings. In developing countries in particular, there is anecdotal evidence that providing refreshments can increase attendance rates, and this needs evaluating in rigorous research designs.

In addition to the primary outcomes (effect on professional practice and patient outcomes), future research should include economic evaluations, sustainability of the primary outcomes and rigorous qualitative research. Observational and qualitative studies can help to define the context within which the intervention is being carried out and the social interactions and processes operating within it. This will enable a greater understanding of the critical success factors in behaviour change processes and help to delineate crucial determinants of effective change (6, 7).

References


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