

Community pharmacy interventions for public health priorities: a systematic review of community pharmacy-delivered smoking, alcohol and weight management interventions

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Scientific summary

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Background

Excessive alcohol intake, smoking and obesity are three of the most significant modifiable risk factors for morbidity and mortality in the UK. The rates of excessive alcohol intake, smoking and obesity are all greater in lower socioeconomic groups, significantly contributing to overall inequalities in health. Within the UK, community pharmacies may be an ideal setting in which to deliver health-care interventions to reduce risk factors for disease. Community pharmacies are easily accessible and widely distributed, often in areas of highest deprivation, and many are open long hours. Community pharmacists and the wider pharmacy team have the potential to deliver health-care interventions to those hardest to reach and arguably those most in need. In so doing, these interventions may reduce the socioeconomic inequalities in the prevalence and treatment of modifiable risk factors for relevant diseases. The Department of Health has identified interventions to manage alcohol misuse, smoking and overweight, delivered by community pharmacists, as public health priorities. We currently do not know the overall effectiveness of these community pharmacy-delivered interventions. This systematic review examines the effectiveness of such interventions and the findings are of relevance to those responsible for policy and practice in England and the UK, and many countries that are trying to tackle alcohol misuse, smoking and obesity, where one option is to deliver interventions through community pharmacies.

Objectives

1. To assess the effectiveness of community pharmacy interventions on health and health behaviours in relation to alcohol misuse, smoking cessation and weight management.
2. To explore if, and how, socioeconomic status (SES), sex, ethnicity and age moderate the effect of these interventions.
3. To describe how the interventions included in this review have been organised, implemented and delivered.

Review methods

A systematic review was conducted on the effectiveness of community pharmacy interventions for alcohol misuse, smoking cessation and weight management using the principles outlined in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins JPT, Green S. *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0*. The Cochrane Collaboration; 2011).

Interventions

The examined interventions were set in a community pharmacy and delivered by the pharmacist or the wider pharmacy team. Any type of intervention of any duration based in any country and in people of any age was included. Interventions led by the pharmacist or the wider pharmacy team that took place outside the community pharmacy setting were excluded.

Study designs

All types of controlled trials were included, such as randomised controlled trials (RCTs) and non-randomised controlled trials (nRCTs), controlled before-and-after studies, interrupted time series and repeated measures studies.

Search strategy

Ten electronic databases were searched from inception to May 2014: Applied Social Sciences Index and Abstracts, Cumulative Index to Nursing and Allied Health Literature, EMBASE, International Bibliography of the Social Sciences, MEDLINE, NHS Economic Evaluation Database, PsycINFO, Social Science Citation Index, Scopus and the Sociological Abstracts. We did not exclude papers on the basis of country, language or publication date. The electronic database searches (written by HM with advice from LS) were supplemented with searches of websites, grey literature, research registries and bibliographies, and by contacting experts.

Outcomes

Interventions for alcohol consumption and smoking cessation had to report a behavioural outcome to be included (e.g. quit rates or change in alcohol intake, respectively). Weight loss interventions had to report an anthropometric outcome to be included [e.g. change in weight or body mass index (BMI)]. Secondary outcomes included any differential effects of the interventions by sociodemographic status (age, ethnicity, sex) or SES (as measured by education, income, occupation, social class, deprivation or poverty). Data on the organisation, implementation and delivery of interventions were also extracted.

Data extraction and quality appraisal

The initial screening of titles and abstracts was conducted by three reviewers (CLO, HM and SS); the screening of full papers was conducted by two reviewers (CLO and TB). Data extraction was conducted independently by two reviewers using a piloted electronic data extraction form (combination of AT, CLO, CS, HM, LN, LS, SS and TB). The methodological quality of the included studies was appraised independently by two reviewers using the Effective Public Health Practice Project Quality Assessment Tool for Quantitative Studies (CLO and TB). Any discrepancies were resolved through discussion between the authors and, if consensus was not reached, with the project lead (CS). Behaviour change, organisation and service delivery, and implementation, was appraised by one reviewer (CS) and checked by another (FS or LS for behaviour change, TB for organisation and service delivery and CB for implementation).

Analysis and synthesis

Narrative synthesis was conducted for all the included interventions. Owing to limited data and the heterogeneity of the studies it was possible to conduct meta-analyses (AK, checked by Julian Higgins) only for the smoking cessation studies.

Results

The searches identified over 19,000 records, of which 24 studies were included. There were two alcohol misuse interventions, 12 smoking cessation interventions, five weight loss interventions and five multicomponent interventions that included pharmacotherapy and lifestyle changes in participants with comorbidities including dyslipidaemia, hypertension and diabetes mellitus.

Nineteen were RCTs, three were nRCTs and two were controlled before-and-after studies. Nine studies were conducted in the UK, four in the USA, two each in Australia, South America and Spain, and one each in Canada, Denmark, Japan, Thailand and the Netherlands. All studies were of adults. Three studies adopted a targeted approach to addressing inequality, recruiting a majority of participants from areas of high deprivation. Three smoking cessation interventions were targeted at the pharmacy staff as well as customers; the remaining 21 studies were targeted at pharmacy customers alone. Intervention components varied considerably across the 24 studies; length of study ranged from 5 to 56 weeks. In terms of global quality assessment, seven studies were rated 'strong', six studies were rated 'moderate' and 11 studies were rated 'weak'.

There was insufficient evidence for the effectiveness of community pharmacy-based brief alcohol interventions; evidence from the two trials included in this review suggests a lack of effectiveness.

Twelve studies evaluated the effectiveness of community pharmacy-based smoking cessation interventions. Ten RCTs were included in a meta-analysis, grouped by whether the pharmacy-based intervention was compared with an active control or usual-care group. The effect was significant for pharmacy-based interventions compared with usual care, with significant heterogeneity. The pooled odds ratios were 1.21 [95% confidence interval (CI) 0.86 to 1.71] and 2.56 (95% CI 1.45 to 4.53) for the active control and usual care, respectively. Pharmacy-based smoking cessation interventions including behavioural support and/or nicotine replacement therapy (NRT) are effective and cost-effective in stopping adults smoking, particularly compared with usual care. There is insufficient evidence to say which specific type of smoking cessation intervention is most effective.

Five studies evaluated the effectiveness of community pharmacy-based weight loss interventions. None of the weight loss studies demonstrated a statistically significant improvement in the pharmacy-based intervention groups compared with the control for any anthropometric outcome. However, the types of interventions were heterogeneous and all of the comparison groups were other active interventions that took place in or out of the pharmacy setting. Pharmacy-based weight loss interventions appear to be as effective as similar interventions in other primary care settings but not as effective or cost-effective as commercially provided weight management services in community settings.

Five studies evaluated multicomponent interventions (pharmacotherapy and lifestyle changes) compared with usual care in participants with comorbidities, including diabetes mellitus, dyslipidaemia and hypertension. None of the studies demonstrated a significant improvement compared with the control for BMI or weight, but all studies did show a significant improvement in the relevant primary outcomes of glycaemic control, lipids and blood pressure.

No study assessed the differential effects of any measure of SES; therefore, the impact of any of the interventions on health inequalities is unknown. The most common behaviour change strategy used in the included interventions was the transtheoretical model (stages of change). The majority of included interventions were implemented within the political context of extending the pharmacists' public health role. In terms of sustainability, a number of studies highlight that reimbursement is needed to the pharmacist for providing the intervention in order for it to be sustainable.

Limitations

Despite the attention that was paid to extracting and summarising contextual factors including the organisation, implementation and delivery of interventions, the intervention content, mechanisms and procedures in most of the included papers were described in little detail. The reporting of implementation factors was poorly reported, particularly stakeholder involvement (consultation and collaboration) in the planning or during the delivery of the intervention, which was reported in only a few studies. The lack of contextual information limits the potential for knowledge implementation and replication of the interventions under review.

Conclusion

Summary of results

Twenty-four relevant studies of pharmacy-delivered interventions were identified; most of the evidence was focused on smoking cessation interventions. There was insufficient evidence to assess the effectiveness of pharmacy-based interventions for alcohol management. Pharmacy-based smoking cessation interventions, including behavioural support and/or NRT, are effective and cost-effective in helping adults to stop smoking, particularly compared with usual care. Pharmacy-based weight loss interventions appear to be as effective as similar interventions in other primary care settings, but not as effective or cost-effective as commercially provided weight management services in community settings. No study assessed the differential effects of any measure of SES; therefore, the impact of any of the interventions on health inequalities is unknown.

Implications for public health

Evidence from this review suggests that pharmacies are feasible settings in which to deliver health promotion-type interventions. Our review has demonstrated that pharmacy-based interventions are effective and cost-effective in helping adults to stop smoking compared with usual care. The evidence demonstrates a range of types of smoking cessation interventions that are feasible within community pharmacies, including behavioural support and/or NRT, but not which specific types of interventions and components are the most effective. More evidence is needed to assess the effectiveness of pharmacy-based interventions for alcohol and weight management.

Nine of the 24 studies were conducted in the UK and are generalisable to the UK pharmacy context. We do not know if, and how, these interventions impact on health inequalities. There is also insufficient evidence to examine the relationship between behaviour change strategies and effectiveness, or evidence of consistent implementation factors or training components that underpin successful interventions. In terms of sustainability, a number of studies highlighted that reimbursement is needed to the pharmacist for providing the intervention in order for it to be sustainable.

Recommendations for research

This review shows that there is a dearth of evaluations that assess the effectiveness of pharmacy-based interventions for alcohol management. The overall quality of the included studies suggests that more research is required to improve recruitment and retention of participants to pharmacy-based interventions. More information is also required about pharmacist training and the experience of those delivering the training, the behaviour change strategies employed, resources required and the sustainability of pharmacy-based interventions. Future pharmacy-based interventions, and evaluations of them, should be robustly designed, particularly with regard to contextual factors, including the organisation, implementation and delivery of interventions. They should also be sufficiently powered to detect small changes in behavioural outcomes and any associated equity effects.

Study registration

This study is registered as PROSPERO CRD42013005943.

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