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The effectiveness of interventions to change six health behaviours: a review of reviews

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NEW REVIEWS

The effectiveness of interventions to change six health behaviours: a review of reviews

Several world health organisation reports over recent years have highlighted the high incidence of chronic diseases. The aim of this review was to systematically collate, evaluate and synthesize review-level findings on the effectiveness of interventions to change unhealthy behaviours or promote healthy behaviours. Systematic reviews and meta-analyses published between 1995 and 2008 were examined. Six different health-related behaviours were included in the review: healthy eating, physical exercise, smoking, alcohol misuse, sexual risk taking (in young people) and illicit drug use. 103 reviews published were included, which evaluated interventions aimed at changing health behaviours in one or more of the six areas, and included studies targeting individuals or organisations or more generally. The focus of the interventions varied, but those targeting specific individuals were generally designed to change an existing behaviour, while those aimed at the general population or specific population groups were designed to promote positive behaviours. Almost 50% of the reviews focused on smoking and the evidence in general, across all six areas, related to short-term effects rather than longer term impacts. Interventions that were most effective across a range of health behaviours included physician advice or

individual counselling, and workplace and school-based activities. Mass media campaigns and legislative changes also showed small to moderate effects in changing health behaviours. The authors concluded that there are interventions that are effective in achieving behaviour change and that future research should assess differential effectiveness of interventions on different population subgroups to ensure health inequalities are addressed.

Jepson R G, Harris F M, Platt S, Tannahill C. The effectiveness of interventions to change six health behaviours: a review of reviews. *BMC Public Health* 2010,10:538
<http://www.biomedcentral.com/1471-2458/10/538/abstract/>

Interventions to increase influenza vaccination rates of those 60 years and older in the community

Although influenza vaccination is promoted by many health authorities, there is uncertainty about the effectiveness of interventions to increase influenza vaccination rates in those people 60 years or older in the general population. Previous studies have identified patient, administrative, healthcare worker (HCW) and societal factors that affect influenza vaccination rates in older people. Presently, there are only two non-Cochrane systematic reviews of the effectiveness of interventions to increase influenza vaccination rates in older people. The objective of the review was to identify RCTs for all interventions to increase community demand for and enhance access to vaccinations, along with provider-, system-based and societal interventions to increase influenza vaccination rates in those 60 years and older in institutions and the community. Interventions reviewed were categorised using the US Task Force on Community Preventive Services classification: increasing community demand (patient reminders, education and vaccination of patients); increased access (eg home visits, provision of free vaccinations); and provider/system-based interventions (eg physician reminders, the use of facilitators in practices). 44 RCTs examining interventions to increase influenza vaccination rates in those aged 60 years or older were included in the review. All RCTs studied seniors in the community in high-income countries, and accordingly, the review's conclusions only apply to non-institutionalized seniors. 33 RCTs were found to be at high risk of bias and no recommendations for practice were drawn from these studies. Of the 11 remaining trials, three examined personalised post-card interventions, four examined home visit interventions, four examined reminders to physicians and four examined facilitator interventions. Personalised postcards and phone calls were found to be effective for increasing immunization among the elderly living in the community, and the use of facilitators and home visits may be effective. Reminders to physicians were found not to be effective.

Thomas RE, Russell M, Lorenzetti D. Interventions to increase influenza vaccination rates of those 60 years and older in the community. *Cochrane Database of Systematic Reviews* 2010, Issue 9.
<http://onlinelibrary.wiley.com/doi/10.1002/1471-2458.cd005188>

Influenza vaccination for healthcare workers who work with the elderly

Health care workers influenza rates, although currently unknown, may be similar to the general population's and may contribute to transmission of influenza among patients. The objective of the review was to identify studies of vaccinating health care workers and its effect on the incidence of influenza its complications and influenza-like illness (ILI) in individuals in long term care facilities who are aged 60 years and older. The authors identified four cluster RCTs and one cohort study. Pooled data from three of the RCTs showed no effect on specific outcomes: laboratory proven pneumonia, or deaths from pneumonia in aged individuals. Pooled data from three RCTs indicated that vaccination of health care workers reduced ILI; the fourth RCT indicated there were reduced consultations for ILI. Additionally, the pooled data from three RCTs showed a reduction in all-cause mortality. The authors concluded that no effect was shown for specific outcomes and that conclusions could not be made about the key outcome measures of interest. Although an effect was shown for the non-specific outcomes of ILI (GP consultations and all-cause mortality in individuals aged 60 years and older), the authors stated that these non-specific outcomes are difficult to interpret because ILI includes many pathogens and winter influenza contributes to less than 10% of all-cause mortality in the elderly population. Additionally, the identified studies were at high risk of bias. The authors conclude that there is no evidence that vaccinating HCWs prevents influenza in elderly residents, and that quality RCTs are required.

Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. *Cochrane Database of Systematic Reviews* 2010, Issue 2.

Interactive computer-based interventions (ICBI) for sexual health promotion

There is current thought that given the public health challenges of sexual health promotion, there is potential for health promotion to be delivered via technology-based mediums. The objective of the review was to determine the effects of interactive computer-based interventions for sexual health promotion, considering cognitive, behavioural, biological and economic outcomes. 'Interactive' was defined as packages that require contributions from users to produce tailored material and personally-relevant feedback. The review identified 15 RCTs of ICBI conducted in various settings and targeted to various populations. Meta-analyses of comparisons of ICBI to 'minimal interventions', such as usual practice, demonstrated statistically significant effects across a range of outcomes. In particular, in comparison to face-to-face sexual interventions, ICBI was moderately more effective in terms of increasing sexual health knowledge. Additionally, when compared to usual practice, there were small effects associated with ICBI on both safer sex self-efficacy and safer-sex intentions, and also on sexual behaviour. In comparison to face-to-face sexual health interventions, a meta-analysis showed that ICBI interventions were more effective in improving sexual health knowledge. There was insufficient evidence to conduct meta-analyses of biological outcomes or a cost-effectiveness analysis. The authors concluded that ICBI are effective tools for learning about sexual health, but more research is required to establish whether ICBI can impact on biological outcomes, to understand for whom interventions might work best and whether they are cost-effective when compared to current, more traditional approaches.

Bailey JV, Murray E, Rait G, Mercer CH, Morris RW, Peacock R, Cassell J, Nazareth I. Interactive computer-based interventions for sexual health promotion. *Cochrane Database of Systematic Reviews* 2010, Issue 9.

<http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD006483/frame.html>

Interventions for preventing falls in older people living in the community

Approximately 30% of people over 65 years of age living in the community fall each year. Although it may not be possible to prevent falls completely, it is possible that interventions can be implemented to enable people to fall less often. The objective of this review was to assess the effects of interventions to reduce the incidence of falls in older people living in the community. Studies included randomised trials of any intervention designed to reduce falls in older people, and included those that intended minimised exposure to or the effect of any risk factor for falling. Interventions were grouped as single interventions, including exercises, medication, environment/assisted technology; multiple interventions which consisted of a fixed combination of two or more major categories of intervention delivered to all participants; and multifactorial interventions which consist of more than one main intervention but, based on an individual assessment, participants receive different combinations of these interventions. Primary outcomes were rate of falls and risk of falling. 111 studies were included in the review, which looked at over 55,000 participants. When compared to usual care or a control intervention, multiple-component group exercise, individually prescribed multiple component home-based exercise and Tai Chi all reduced the rate of falls and risk of falling. Assessment and multifactorial intervention reduced the rate of falls, but not the risk of falling. Overall, home safety interventions did not reduce the rate of falls, but, however, were effective in people with severe visual impairment and those at an existing high risk of falling. Additionally, there is some evidence that falls prevention strategies can be cost-saving. The authors concluded that exercise-based interventions reduce the risk and rate of falls and more research is required to confirm the effectiveness of multifactorial assessment and interventions, and whether safety interventions home and other interventions are effective.

Gillespie LD, Robertson MC, Gillespie WJ, Lamb SE, Gates S, Cumming RG, Rowe BH. Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Comment added to review, published in Issue 10, 2010

<http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD007146/frame.html>

Reduction of diabetes risk in routine clinical practice: are physical activity and nutrition interventions feasible and are the outcomes from reference trials replicable? A systematic review and meta-analysis.

Although the clinical effectiveness of lifestyle interventions in preventing or delaying the onset of diabetes has been demonstrated from previous studies, the challenge is to translate them into routine clinical settings. The objective of this review was to determine whether lifestyle interventions delivered to high-risk adult patients in routine clinical care settings are feasible and effective in achieving reductions in risk factors for diabetes. The review included RCTs, cohort studies with or without a control group, or interrupted time series analyses, where participants have been exposed to a lifestyle intervention of at least 3 months duration and followed up for at least 3 months. Interventions were classified as single (either nutrition or physical activity programs with or without medication), or combined nutrition and/or physical activity programs (structured or unstructured) whether or not they included medication. Structured intervention components were defined as those in which participants received a standard set of sessions with instructions on specific dietary and/or physical activity requirements and goals. Outcomes included weight loss, reduction in waist circumference, improvement of impaired fasting glucose or oral glucose tolerance test (OGTT) results, increased physical activity, and reduction in diabetes incidence. Twelve studies were included in the review, with four suitable for meta-analysis. A significant positive effect of the interventions on weight was reported by all study types. The meta-analysis showed that lifestyle interventions achieved weight and waist circumference reductions after one year. However, no clear effects on biochemical or clinical parameters were demonstrated. Changes in dietary parameters or physical activity were generally not reported. Most studies assessing feasibility were supportive of implementation of lifestyle interventions in routine clinical care. The authors concluded lifestyle interventions for patients at high risk of diabetes, delivered by a variety of clinical healthcare providers in routine clinical settings, are feasible but appear to be of limited clinical benefit one year after intervention.

Cardona-Morrell M, Rychetnik L, Morrell S L, Espinel P T, Bauman A. Reduction of diabetes risk in routine clinical practice: Are Physical Activity and Nutrition Interventions feasible and are the outcomes from reference trials replicable? A Systematic Review and meta-analysis *BMC Public Health* 2010, 10:653

<http://www.biomedcentral.com/1471-2458/10/653/abstract>

FORTHCOMING REVIEWS

Community-wide interventions for increasing physical activity

With the prevalence of physical inactivity remains high or has even increased in recent years, many countries are aiming to increase the uptake of overall physical activity within the general population. Community-wide interventions are attractive because they aim to improve health risk factors of a whole population and operate at a series of levels to impact on behaviour. Such interventions usually involve investment in visible infrastructure and planning initiatives with the aim of producing long lasting benefits for the community. The objective of this review is to determine the effects of community-wide, multi-strategic interventions upon community levels of physical activity. Cluster RCTs, RCTs, quasi-experimental designed trials, interrupted time-series studies and prospective cohort studies will be included. Additionally, only studies with a minimum 6 months follow up will be included. Participants in the studies will comprise those persons residing in a geographically-defined community, for example village, town or city, and be representative of that community. For the purposes of this review, a community-wide intervention is defined as one which has at least two broad strategies aimed at improving physical activity. Numerous outcomes will be examined, including frequency of physical activity in the population, and the percentage of people active or inactive. The review's authors have determined a priori that the best evidence is likely to come from cluster RCTs and CBA studies.

Baker PRA, Francis DP, Soares J, Weightman AL, Foster C. Community wide interventions for increasing physical activity (Protocol). *Cochrane Database of Systematic Reviews* 2010, Issue 2.

<http://onlinelibrary.wiley.com/doi/10.1002/protocol.2008366/frame.html>

Computer-based diabetes self-management interventions for adults with type 2 diabetes mellitus

The current evidence on the use of new technology in diabetes is still evolving and has shown mixed results. There is evidence however that low-intensity, brief interventions for simple behaviour change are generally effective even when delivered by computer based applications, while higher-intensity face to face interventions set the current standard for self-management training. The objective of the review is to assess the effects on health status and quality of life of computer-based diabetes self-management interventions for adults with type 2 diabetes mellitus. For the purposes of this review a 'computer-based diabetes self-management intervention' will include any application that takes input from a patient and uses communication or processing technology to provide a tailored response that facilitates one or more aspect of diabetes self-management. Computer-based interventions to improve diabetes self-care are complex interventions, and they can be judged on their ability to improve biological, cognitive, behavioural and emotional outcomes. This review will include randomised controlled clinical trials of adult patients with type 2 diabetes mellitus and interventions will include computer-based software applications that respond to user input and aim to generate tailored content to improve one or more of self-management domains, being cognitive, behavioural or social, through feedback, tailored advice, reinforcement and rewards, and patient decision support. Primary outcomes will include health-related quality of life; death from any cause; HbA1c, along with numerous secondary outcomes. Given the heterogeneous nature of the interventions, the authors will also analyse the theoretical basis for the interventions and attempt to define the active components.

Pal K, Eastwood SV, Michie S, Farmer AJ, Barnard ML, Peacock R, Murray E. Computer-based diabetes self-management interventions for adults with type 2 diabetes mellitus (Protocol). *Cochrane Database of Systematic Reviews* 2010, Issue 10.

http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD008776/pdf_fs.html

The use of electronic health records to support smoking cessation

Treatment for tobacco use in a health care setting typically begins with an assessment to determine tobacco use and patient willingness to stop using tobacco. Higher rates of cessation are achieved when health systems and clinicians provide cessation counselling and treatment medications. Electronic medical records provide a systematic mechanism to improve the fidelity of following clinical practice guidelines. The objective of the review is to assess the effectiveness of electronic health record-facilitated interventions on smoking cessation support actions by clinicians and on patient smoking cessation outcomes. This review will focus on interventions that involve electronic medical record systems in ambulatory or primary care settings. Types of participants in the studies will include adult patients attending primary care clinical settings. Studies that measure abstinence from smoking at a minimum of 6 months from the date of the intervention will be included. In addition to quit rates, the review's authors are interested in changes in smoking cessation support actions by clinicians. Most clinical research in healthcare settings including preventive measures such as smoking treatment have involved observational rather than randomized studies and the authors have reason to believe that few randomized trials have been to examine this type of intervention. Well done observational and quasi-experimental designs have the potential to fill the need for evidence unavailable from randomized trials. Therefore, randomized controlled trials including cluster randomized trials or, in their absence, methodologically strong observational studies will be included in the review.

Boyle R, Solberg L, Fiore M. Use of electronic health records to support smoking cessation (Protocol). *Cochrane Database of Systematic Reviews* 2010, Issue 10.

<http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD008743/frame.html>

OTHER NEWS

International register of ongoing systematic reviews

In response to growing concern about reporting biases, and advocacy of registration for systematic reviews, the Centre for Reviews and Dissemination (CRD) is leading an initiative to establish an international register of ongoing systematic reviews. The register will use the existing IT platform and infrastructure that supports production and provision of the CRD databases, and work in a similar way to clinical trials registers. The web-based register will offer free public access, be electronically searchable and open to all prospective registrants. It will be launched later this year, will offer a free, simple, user-friendly registration process on a proven and appropriate open access platform that is easily searchable. It is intended the register will promote research transparency, reduce the potential for bias and should lead to improved quality of systematic reviews and the decisions that rely upon them. It should also help avoid duplication and support the efficient use of research funding. For more information, visit: <http://york.ac.uk/inst/crd/projects/register.htm>

PulsE can also be viewed on the Sax Institute [website](#)



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Please feel free to forward this bulletin to any colleagues who may be interested.