PulsE

Policy-relevent Evidence

Quarterly eBulletin of public health and health services systematic reviews

In This Issue

Issue 15 February 2011

NEW REVIEWS

FORTHCOMING REVIEWS

OTHER NEWS

NEW REVIEWS

Multiple risk factor interventions for primary prevention of coronary heart disease

There is much support for health promotion programs that use counselling and educational methods to encourage people to reduce their risks for developing heart disease. Multiple risk factor interventions are assumed to be efficacious in reducing coronary heart disease (CHD) mortality and morbidity. However, some trials have cast doubt on the effectiveness of these interventions. The objective of this review was to assess the effects of multiple risk factor interventions for reducing total mortality, fatal and non-fatal CHD events, and cardiovascular risk factors among adults without prior clinical evidence of CHD. Interventions examined by the review included health promotion activity to achieve behaviour change, and counselling or educational interventions, with or without pharmacological treatments, which aim to alter cardiovascular risk factors. Primary outcomes were all-cause mortality, fatal CHD and fatal stroke events and secondary outcomes included non-fatal CHD. The review included 55 trials, comprising a total of 163,471 participants. Fourteen trials that reported clinical event endpoints showed non-statistically significant effects of the interventions on total and CHD mortality. When confined to trials involving people with hypertension and diabetes, interventions did demonstrate benefits for total

mortality, and fatal and non-fatal cardiovascular events, with odds ratios of 0.78 (95% CI 0.68 to 0.89) and OR 0.71 (95% CI 0.61 to 0.83), respectively. A significant reduction in blood pressure favouring intervention was indicated in 48 trials, but overall, changes in blood pressure were small. The authors concluded multiple risk factor interventions comprising counselling, education aimed at behaviour change and drug therapies for the primary prevention of coronary heart disease were ineffective in achieving reductions in total or CHD related mortality when used in general populations of middle-aged adults. However, these types of interventions may be effective in reducing mortality in high-risk hypertensive and diabetic populations.

Ebrahim S, Taylor F, Ward K, Beswick A, Burke M, Davey Smith G. Multiple risk factor interventions for primary prevention of coronary heart disease. Cochrane Database of Systematic Reviews 2011, Issue 1. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD001561/frame.html

Systematic review of mass media interventions designed to improve public recognition of stroke symptoms, emergency response and early treatment

Given the emergence of new effective acute treatments for stroke, mass media interventions have been implemented to improve the public's and medical professionals' emergency responses to stroke. This review focused on the assessment of impact of mass media interventions designed to increase public recognition of stroke symptoms, emergency responses to stroke and promote early intervention. This review found 10 studies, six targeted at the general public and four to both the public and medical professionals. Campaigns aimed only at the public reported significant increase in awareness of symptoms/signs, but demonstrated little impact on awareness of need for emergency response to those experiencing a stroke. Of two controlled before and after studies, one reported no impact on those over the age of 65 years, the age group at increased risk of stroke and also most likely to witness a stroke. The other controlled before and after study found a significant increase in awareness in two more warning signs of stroke. One campaign targeted at public and professionals did not reduce time to presentation at hospital, but increased thrombolysis rates. This suggests that the campaign may have had an impact on professionals and improved service delivery to patients who had a stroke. Overall, although the impacts of the interventions aimed at the public were inconsistent; all showed some significant increase in awareness of stroke symptoms. The review's authors concluded that although some studies showed increases in stroke awareness, none showed a full picture of the impact of a mass media campaign and that more studies of mass media campaigns is required.

Lecouturier J et al. (2010) Systematic review of mass media interventions designed to improve public recognition of stroke symptoms, emergency response and early treatment *BMC Public Health*, 10:784 http://www.biomedcentral.com/1471-2458/10/784/abstract

Altered dietary salt intake for preventing and treating diabetic kidney disease

Approximately 75% of cardiovascular disease (CVD) in diabetes can be attributed to raised blood pressure (BP) and is the largest direct cause of death due to strokes, heart attacks and heart failure in diabetic patients. There is strong evidence that our current consumption of salt is a major factor in increasing blood pressure and a modest reduction in salt intake lowers blood pressure. Despite the high cardiovascular risk and theoretical reasons for increased salt sensitivity in diabetic patients, the existing research on the role of salt in regulating BP and its impact on diabetic kidney disease is limited to small studies. The objective of this review was to review the evidence on the effect of reduced salt intake on blood pressure and markers of CVD and diabetic kidney disease (in both Type 1 and Type 2 diabetes). The review included13 studies, comprising total of 254 individuals. Interventions compared low salt or reduced salt diet to high-salt intake. As studies were not of sufficient duration to test the efficacy of salt reduction on health outcome measurements such as heart attacks or endstage kidney disease, BP and surrogate markers of diabetic kidney disease were considered. The main outcome measures extracted were net change in 24h urinary salt concentration and BP, which was measured by all studies. The review found that reducing salt intake by 8.5 g/day lowered BP by in both type 1 and type 2 diabetes 7/3mm Hg. This fall is similar to that of single drug therapy. The authors of the review concluded that their meta-analysis showed a large fall in BP with salt restriction and they recommend that all diabetics should consider reducing salt intake at least to less than 5-6 g/day, in keeping with current recommendations for the general population

Suckling RJ, et al. (2010) Altered dietary salt intake for preventing and treating diabetic kidney disease. *Cochrane Database of Systematic Reviews*, Issue 12
http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD006763/frame.html

Parental and household smoking and the increased risk of bronchitis, bronchiolitis and other lower respiratory infections in infancy: systematic review and meta-analysis

The aim of this paper is to provide an updated systematic review and meta-analysis of the association between passive smoking and the risk of lower respiratory infections (LRI) in infants aged less than two years. Studies were included in the review that used the outcomes of LRI, and LRI sub-categories of pneumonia, bronchitis, bronchiolitis. A total of 60 studies were included in the review. Meta-analyses was carried out to estimate the effects on the risk of LRI of smoking by the mother only, father only, both parents, and any household member. Over half of the included studies used data from cohorts, while the remaining studies used a case-control or cross-sectional survey design. The review found that exposure to smoking by any household member was associated with an increase in the odds of LRI for infants, by 1.54 (95% CI 1.40 to 1.69). A sub-analysis showed that this increased risk was predominantly due to a strong association between household passive smoke exposure and bronchiolitis. Exposure from both parents smoking also demonstrated a statistically significant increase in the odds of LRI, by 1.62 (95% CI 1.38 to 1.89), as did exposure to paternal smoking (OR 1.22 (95% CI 1.10 to 1.35), and pre-natal maternal smoking (1.24 (95% CI 1.11 to 1.38). Post-natal maternal smoking was associated with increased odds of LRI, by 1.58 (95% CI 1.45 to 1.73). Notably, there was a strong association between post-natal maternal smoking and bronchiolitis (OR 2.51, 95% CI 1.58 to 3.97). The authors concluded that this review provides confirmation that passive exposure to smoking, in particular maternal smoking, increases infants' risk developing lower respiratory infections in the first two years of life. Importantly, the review identified clinically- diagnosed bronchiolitis as a particular consequence of exposure.

Jones L. et al (2011) Parental and household smoking and the increased risk of bronchitis, bronchiolitis and other lower respiratory infections in infancy: systematic review and meta-analysis. *Respiratory Research*, 12:5
http://respiratory-research.com/content/12/1/5

The relationship between active travel to school and health-related fitness in children and adolescents: a systematic review

Active travel to school (ATS) has been identified as an important source of physical activity for young people. ATS includes various modes of travel such as walking and cycling. The aim of this review was to examine the potential health benefits associated with ATS among children and adolescents. The review included 27 studies with most using a cross-sectional design to investigate the association between ATS and health. The review found that about half of the studies that examined the relationship between ATS and body weight reported significant positive associations. Additionally, five studies indicated that ATS is positively associated with cardiorespiratory fitness in youth. There were notable limitations found among the studies, particularly around the definition and measurement of ATS. The authors concluded that there is some evidence to suggest that ATS is associated with healthier body composition and level of cardiorespiratory fitness among youth, and that public health strategies to increase ATS are warranted.

Lubans D et al. (2011) The relationship between active travel to school and health-related fitness in children and adolescents: a systematic review. *International Journal of Behavioural Nutrition and Physical Activity* 8: 5
http://www.ijbnpa.org/content/pdf/1479-5868-8-5.pdf

Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review

Adolescents and young adults frequently experience mental health disorders, yet often do not seek professional help. This systematic review aims to summarise reported barriers and facilitators of help-seeking in young people using both qualitative and quantitative studies. The review focused on help-seeking for the common mental health problems of depression, anxiety and general emotional distress. The review included 22 studies, with most conducted in Australia or the United States. The majority of

studies were conducted using qualitative methods; the remainder were quantitative (survey method) studies. Most studies were conducted with population samples not selected on the basis of participant mental health status. The review identified a range of perceived barriers and some facilitators to help-seeking. Among the qualitative studies, the review found the most frequently reported barrier to help-seeking was stigma, which was reported in over 75% of studies. Additionally, almost half of the studies mentioned issues of confidentiality and trust. In studies that examined facilitators to mental health help-seeking, positive past experiences with help-seeking were most frequently mentioned. The top-rated barriers in the quantitative studies were stigma, discomfort discussing mental health problems, and a preference for relying on self. However the review highlighted the paucity of high quality research in this area, relatively little focus on identifying facilitators and an emphasis on qualitative rather than data collection. The authors concluded that young people perceive a number of barriers to help-seeking for mental health problems and that strategies for improving help-seeking by adolescents and young people should focus on improving mental health literacy, reducing stigma and taking into account young peoples' desire self-reliance.

Gulliver A, et al. (2010) Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry* 10; 113
http://www.biomedcentral.com/content/pdf/1471-244x-10-113.pdf

Screening for breast cancer with mammography

There have been several published estimates of the benefits and harms of mammographic screening for breast cancer. The objective of this review was to assess the effect of screening for breast cancer with mammography on mortality and morbidity. The review included seven randomised trials comparing mammographic screening with no mammorgraphic screening, with a total of 600 000 women. The pooled risk ratio from the meta-analysis of breast cancer mortality for all trials combined was 0.81 (95% CI 0.74 to 0.87), indicating a reduced risk. However, the authors found that breast cancer mortality was an unreliable outcome that was biased in favour of screening. The trials with adequate randomisation did not find an effect of screening on cancer mortality after 10 years or on all-cause mortality after 13 years. The review found that screening is likely to reduce breast cancer mortality, with an absolute risk reduction of 0.05%. Furthermore, screening was found to lead to 30% over-diagnosis and overtreatment, or an absolute risk increase of 0.5% of these outcomes. This means that for every 2000 women invited for screening throughout 10 years, one will have her life prolonged and 10 healthy women, who would not have been diagnosed if there had not been screening, will be treated unnecessarily. Furthermore, more than 200 women will experience important psychological distress for many months because of false positive findings. The review's authors concluded that it is not clear whether screening does more good than harm.

Gøtzsche PC, Nielsen M. (2011) Screening for breast cancer with mammography. *Cochrane Database of Systematic Reviews*, Issue 1.
http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD001877/frame.html

Screening for prostate cancer

The review's objective was to update a previous review and determine whether screening for prostate cancer reduces prostate cancer-specific mortality and all-cause mortality; and assess its impact on quality of life, including adverse events. Five RCTs with a total of 341,351 participants were included in this review, with three studies being assessed as posing a high risk of bias. The meta-analysis of the five studies indicated no statistically significant reduction in prostate cancer-specific or all-cause mortality among the whole population of men randomised to screening compared controls. The probability of receiving a diagnosis of prostate cancer was significantly greater in men randomised to screening, compared to those randomised to control (relative risk 1.35, 95% CI 1.06 to 1.72). The studies did not provide any detailed assessments of the effect of screening on quality of life or costs associated with screening. Harms of screening included high rates of false-positive results for the PSA test (up to 75.9%), over-diagnosis (up to 50% in the largest study included in the review) and adverse events associated with transrectal ultrasound guided biopsies such as infection, bleeding and pain. Only one study reported a benefit in a subgroup of men aged 55 to 69: within this subgroup it was determined that 1410 men needed to be invited to screening and 48 additional men subsequently diagnosed with prostate cancer needed to receive early intervention to prevent one additional prostate cancer death at 10 years. The review's authors concluded that men should be informed of both the potential benefits and

the demonstrated adverse effects when deciding whether or not to undergo screening for prostate cancer. Any benefits from prostate cancer screening may take up to 10 years to accrue; therefore, men who have a life expectancy less than 10 to 15 years should be informed that screening for prostate cancer is unlikely to be beneficial.

Ilic D, et al. (2006) Screening for prostate cancer. *Cochrane Database of Systematic Review*, Issue 3. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD004720/frame.html

Effect of outpatient pharmacists' non-dispensing roles on patient outcomes and prescribing patterns

Pharmacists' roles in patient care have expanded from the traditional tasks of dispensing medications and providing basic medication counselling to working with other health professionals and the public. This systematic review examined the effect of outpatient pharmacists' non-dispensing roles on patient and health professional outcomes. Interventions which comprised of any service delivered by pharmacists other than drug compounding and dispensing were examined. Studies which reported primary outcomes that objectively measured health care process measures or patient outcomes were included in the review. The review included 43 studies; 36 of which were pharmacist interventions targeting patients and seven studies were pharmacist interventions targeting health professionals. Most studies examined the role of pharmacists in medication/therapeutic management, patient counselling improving patient care and clinical outcomes and providing health professional education to improve prescribing patterns. All but one of the studies compared pharmacist services targeted at patients or health professionals to usual care provided by pharmacists. In all studies that targeted health professionals, pharmacists conducted educational outreach visits at physician practices to promote guideline-based prescribing and the effect of the intervention was measured by changes in prescribing of medications. Patient-targeted pharmacist interventions were either patient education or they were more complex, commonly involving pharmaceutical therapy management. When compared to usual care, five studies indicated that pharmacist services targeted at patients reduced the incidence of therapeutic duplication and decreased the total number of medications prescribed. Additionally pharmacist interventions resulted in improvement in most clinical outcomes, although these improvements were not always statistically significant. The authors concluded that the majority of included studies supported the roles of pharmacists in medication management, patient counselling to improve process of care and clinical outcomes, and that educational outreach visits may impact physician prescribing patterns.

Nkansah N, et al. (2010) Effect of outpatient pharmacists' non-dispensing roles on patient outcomes and prescribing patterns. *Cochrane Database of Systematic Reviews*, Issue 7. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD000336/frame.html

FORTHCOMING REVIEWS

Psychological interventions for the treatment of pathological and problem gambling

This review will assess psychological interventions designed to reduce symptoms of pathological and/or problem gambling with the aim to provide an evidence base for psychological treatments to better inform clinical decisions about treatment options. Participants will be males and females of any age and ethnicity, with diagnosis pathological and/or problem gambling determined by standardised diagnostic and assessment instruments. A range of different psychological treatments available have been evaluated in the literature including cognitive interventions, behavioural interventions, motivation enhancement, brief interventions, self-help interventions, and Gamblers Anonymous (GA). These interventions can be administered to individuals or in a group-setting and the duration of treatment can vary from single session to prolonged interventions. The review will consider psychological interventions designed to reduce symptoms of pathological or problem gambling. Several treatment categories have been identified a priori, and include cognitive-behavioural techniques administered to individuals, cognitive-behavioural techniques administered to groups, motivational enhancement treatments and other psychological approaches to treatment. These interventions will be compared with each other or, more often, an appropriate 'non intervention' (e.g. wait-list) control. Outcomes will include reduced gambling behaviour and reduction in severity of gambling symptoms.

Anderson C et al. (2011) Psychological interventions for the treatment of pathological and problem gambling (Protocol). *Cochrane Database of Systematic Reviews*, Issue 1. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD008937/frame.html

Self-management education programmes for osteoarthritis

There are notable health impacts of osteoarthritis (OA) including pain, lost productivity, and reduced quality of life. As the condition is not reversible, the growing number of people with the condition will result in a greater burden of disease. Self-management education programmes are complex behavioural interventions specifically targeted at patient education and behaviour modification. Interventions are usually targeted at maintaining or improving life with the condition rather than improving the condition itself. The aim of the review will be to assess the effectiveness of structured self-management education programmes for people with OA compared to no intervention or usual care. Programme components that directly address self-management may include fostering skills in managing OA, such as problem solving, goal setting, coping with the condition, or interventions to manage pain or improve physical and psychological functioning. Structured programmes delivered by health professionals, lay leaders, or a combination of both will be reviewed. The main outcome measures will include improvement in self-management of OA, participant's positive and degree of active engagement in life, and adverse events or withdrawals from the intervention. Other outcomes, which are considered to be relevant to the impact of self-management will include physical function, quality of life, emotional health, and health-directed behaviour.

Pitt V et al. (2010) Self-management education programmes for osteoarthritis (Protocol). *Cochrane Database of Systematic Reviews*, Issue 1. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD008963/frame.html

Patient education in the contemporary management of coronary heart disease

It is widely accepted that the effective management of coronary heart disease (CHD) is multimodal with appropriate revascularization, drug therapy and cardiac rehabilitation. This review will be undertaken to update previous meta-analyses of the effects of education for patients with coronary heart disease. The review's objective is to assess the effects of patient education compared with usual care on mortality and morbidity in patients with CHD and to explore the potential study level predictors of the effects of patient education in patients with CHD. Randomised controlled trials where patient education is the primary intention of the intervention, with a follow up period of at least six months, will be included. For the purposes of this review, patient education is defined as instructional activities organised in a systematic way. The study population examined will include adults who have suffered a myocardial infarction (MI), or who have undergone surgical procedure to treat CHD or who have angina pectoris or CHD defined by angiography. The review will examine interventions that are delivered in an inpatient, outpatient or community-based setting and which involve some form of structured knowledge transfer about CHD, its causes, treatments or methods of secondary prevention. Main outcome measures will be total mortality, cardiovascular mortality, non-cardiovascular mortality, cardiovascular events.

Brown JPR et al. (2010) Patient education in the contemporary management of coronary heart disease (Protocol). *Cochrane Database of Systematic Reviews*,Issue 12. http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD008895/frame.html

OTHER NEWS

Pan-American Health Organisation announces SUPPORT Tools for Evidence-Informed Policy Making (STP): accessible in four languages.

This series will help those involved in knowledge translation to understand how finding and using research evidence can help policymakers and those who support them to do their jobs better and more efficiently. Each article in this series presents a proposed tool that can be used by those involved in finding and using research evidence to support evidence informed health policymaking.

http://www.cochrane.org/news/current-news/pan-american-health-organization-announces-support-tools-evidence-informed-policy-

Submission of reviews to the World Health Organisation

The Bulletin of the World Health Organisation has launched a new section devoted exclusively to systematic reviews and meta-analysis. This measure reinforces the Bulletin's commitment to become a source of the best possible health evidence available for guiding public health policy and practice in WHO's Member States. An editorial in the January 2011 issue of the Bulletin announced the new section.

http://www.who.int/bulletin/volumes/89/1/10-084970.pdf

Enquiries: Braedon Donald
P: 02 9514 5977 | E: braedon.donald@saxinstitute.org.au
Level 8, Building 10, 235 Jones Street Ultimo NSW 2007 | PO Box 123 Broadway, NSW 2007 Australia

PulsE is an initiative of the Sax Institute www.saxinstitute.org.au