Health behaviour interventions to improve physical health in individuals diagnosed with a mental illness: a systematic review
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CRD summary
This review found that health behaviour interventions could lead to improvements in physical health of patients diagnosed with a serious mental illness. Limitations in reporting and the risk of biases in the review mean the reliability of the authors’ conclusions is unclear.

Authors’ objectives
To evaluate the evidence of health behaviour interventions on the physical health of patients diagnosed with a mental illness.

Searching
CINAHL, ProQuest, Informit and PubMed were searched for relevant English language studies published between 1960 and November 2010; search terms were reported. The reference lists of relevant primary studies and review articles were checked to identify additional studies.

Study selection
Eligible for inclusion were studies with baseline and post-intervention data of at least five or more patients diagnosed with a mental or behavioural disorder alone or with a comorbid substance abuse disorder that evaluated the effect of health interventions on physical health and health behaviours. The health interventions were defined as those targeting health benefits through health behaviours such as physical activity, nutrition, alcohol abuse and smoking. Poor quality studies that scored less than 50% for the quality assessment, and studies that examined only pharmacological therapy were excluded from the review.

The studies were conducted in the USA, UK, Australia, Canada, continental Europe and Asia. Weight management through improved nutrition and physical activity was the focus of most interventions; other studies targeted smoking, physical activity, alcohol and other substance abuse and nutrition. Some studies targeted single behaviours and other studies targeted multiple behaviours. Most studies recruited patients from out-patients or community settings and other patients were recruited from long-stay facilities. The mean age of the patients was 48.8 years and the mean proportion of female patients in the trials was 57%. Some studies enrolled patients with specific mental illnesses such as schizophrenia or major depressive disorder; other trials included patients diagnosed with a range of severe or serious mental illnesses. The interventions consisted of at least some psychological education and/or behaviour change instruction. Most of the studies in smoking cessation included nicotine replacement therapy. The mean length of the interventions was 27.4 weeks (range three to 104 weeks).

The authors did not state how many reviewers performed the study selection.

Assessment of study quality
Methodological quality was assessed using criteria developed by Bradshaw et al. (2005) in which study quality was calculated as a percentage between zero and 100%. Studies that received scores of ≥75% were regarded as good quality, and studies scoring between 50-75% were rated as fair. Studies judged as poor were those that scored less than 50%.

The authors did not state how many reviewers performed quality assessment.

Data extraction
Data were extracted with previously pilot-tested forms for the health behaviour outcomes for each study.

The authors did not state how many reviewers conducted data extraction.

Methods of synthesis
The results of the review were summarised in a narrative synthesis, stratified by health behaviours of weight management, physical activity, smoking cessation, nutrition and alcohol misuse.

Results of the review
Forty-two studies (5,246 participants in 41 studies) were included in the review, comprising 16 pre-test and post-test studies, 16 randomised controlled trials and 10 quasi experimental studies. Thirty studies were judged to be fair quality and the remaining 12 studies were rated as good quality. The mean quality score was 67.17% (SD12.16). Follow-up information was collected on 4,085 patients in 38 studies. Four studies did not report losses to follow-up.

Weight management (17 studies): Six one-group studies and nine two-group studies reported significant benefits from the interventions reported in post-test measurements of body weight/waist circumference, body mass index, physical activity and nutrition. The remaining two studies found no differences between groups or did not conduct change analyses.

Smoking cessation (seven studies): All seven studies found reductions in smoking rates within intervention groups. Two of three studies that used a two-group design found significant benefits of the interventions in cessation rates.

Physical activity (seven studies): Five studies included two or more groups and two of these studies reported significant benefits post-intervention for body fat, cardiorespiratory fitness and muscular fitness. An additional study found significant improvements in aerobic capacity for the intervention group, but two studies found no differences between groups. Two one-group studies found significant improvements in vigorous physical activity submaximal exercise test scores and distance walked.

Nutrition (two studies): One two-group study found significant reductions in weight, body mass index and waist circumference for the intervention group compared with the control group. The second study of three groups found significant changes in fruit and vegetable consumption for the group who received vegetables and instructions, and vegetables only three months post-intervention but not at 12 months follow-up. In this study there were no changes in BMI or physical activity.

Alcohol misuse (nine studies): Six studies noted improvements in misuse. Significant decreases were found in hazardous alcohol use (three studies), drinking days, alcohol use per month, concurrent alcohol and drug misuse, binge drinking, increases in alcohol abstinence and intention to stay sober (one study for each outcome). There were also significant decreases in illicit drug use (substance used per substance-using day, and in post-intervention criminal charges).

Authors’ conclusions
The findings provided evidence for the positive effects of health behaviour interventions in improving the physical health in a range of areas of patients diagnosed with mental illness.

CRD commentary
The review addressed a broad question and criteria for the inclusion of studies in the review were outlined. Appropriate databases were searched for relevant studies, but there were no attempts to identify unpublished studies, which meant there was some risk of publication bias. The restriction of the review to English language studies meant that there was some risk of language bias. There were no steps reported to minimise errors and biases at any stage of the review process.

Methodological quality was assessed and found to be average across the included studies. Although studies of poor quality were excluded from the review, there were substantial losses to follow-up reported in the remaining studies, which indicated a weakness in reporting methodological quality by scores alone. Not all studies were comparative studies between the intervention and a control group. The authors’ decision to combine the results in a narrative synthesis appeared justified in light of the clinical heterogeneity in populations, interventions and outcomes.

Some reporting limitations, the risk of particular language and publication biases, and the high losses to follow-up in the included studies mean that the reliability of the authors’ conclusions is unclear.

Implications of the review for practice and research

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Practice: The authors stated that successful techniques of health behaviour interventions may have been suited for implementation by mental health nurses, due to the in-person approaches used for intervention delivery and the amount of face-to-face time nurses spend with patients with mental illnesses.

Research: The authors stated that further research was required on smoking and alcohol abuse interventions. Further research was also required for interventions focusing on physical activity and nutrition. Future research should also include reliable and validated psychological measures.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.