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Original Citation

Lewis, Kiara (2006) What interventions are effective in increasing physical activity levels? Research Report. University of Huddersfield, Huddersfield, UK.

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What interventions are effective in increasing physical activity levels?

Short Review:

Prepared by: Kiara Lewis

Proposers: Phil Longworth and Alison Morby

Planning Group: KMC Leisure and corporate development unit

Our ref: 5/2001

Important

These are the opinions of the researcher based upon appraisal of the evidence found. The review aims to provide only a very brief summary and an indication of the strength of the available evidence. Results should be used to make informed judgements by clinical practitioners on their relevance at population and individual patient level, taking into account local skills and expertise, resources and patient preferences. Readers should refer to the supporting evidence.

Levels of Evidence

The evidence is rated on a five star system:

- Generally consistent findings in a majority of multiple acceptable studies.
- Either based on a single acceptable study, or a weak or inconsistent finding in some of the multiple acceptable studies.
- Limited scientific evidence, which does not meet all the criteria of acceptable studies.
- Generally consistent findings in a majority of studies but study quality not assessed
- Expert opinion.

Short Review:

Physical Activity Interventions

Short Review

Prepared by: Kiara Lewis

Proposers: Phil Longworth and Alison Morby

Planning group: KMA Leisure and corporate development unit

Question

What interventions are effective in increasing physical activity levels?

Evidence

i. Systematic Review

Hillsdon M, Thorogood, M. Anstiss, T. Morris, J. Randomised controlled trials of physical activity promotion in free living populations: a review. (1995) *Journal of Epidemiology and Community Health* 49: 448-453

ii. Literature Review

Dishman R, K. Buckworth, J. (1996) Increasing physical activity: a quantitative synthesis. *Medicine and Science in Sports and Exercise* 28 (6): 706-719

iii. Literature Review

Hillsdon M, Thorogood, M. A systematic review of physical activity promotion strategies (1996). *British Journal of Sports Medicine*. 30(2): 84-89

iv. Report of a Symposium

Killoran, A.J. Fentem, P. and Casperson, C. Moving On – International Perspectives on Promoting Physical Activity (1994) HEA Report

Level of evidence

i. Systematic review of RCT's where study quality is assessed. A variety of personal level interventions were reviewed. Caution should be taken in interpreting the conclusions, due to the highly selective nature of the samples used in the primary studies (self-selected volunteers, who tended to be over 40 years of age, well educated and white). No UK based trials were found.

ii. A thorough review of community level interventions with a variety of study designs (analysed separately). However the overall effect size may be inflated as there is no detailed assessment of the quality of the primary studies and the effect sizes found in the controlled studies is smaller than the pre or quasi-experimental designs.

iii. A review of RCT's of physical activity promotion at a personal level, however the method of assessing quality of studies is not included. All the trials reported relied on volunteers recruited through media advertisements in the USA and resulted in mainly white, middle aged middle class volunteers. Results therefore may not generalise to other populations.

iv. A report of the Health Education Authority symposium to agree health education messages for promoting physical activity in England. The report is the consensus of opinions between 45 experts from the UK and overseas based on discussions of a series of commissioned reviews.

Summary of findings

The current evidence concerning the effectiveness of interventions to increase activity levels is much less extensive than the evidence of health outcomes associated with physical activity. There are many problems with the research in this area, in particular problems associated with:

- extreme heterogeneity of study designs
- the self selection of participants leading to researcher bias
- the multitude of measures of outcome and often reliance of self report of activity levels
- the variety of types and levels of interventions
- the predominance of studies from USA leading to problems of generalisability to UK populations
- the lack of research into specific target populations
- the lack of prospective studies that could identify what makes people take up activity
- the majority of interventions that have been reviewed are at a personal level rather than at a community or environmental level
- a majority of studies do not go beyond 6 months (typically 12 weeks).

The evidence from the reviews rated as or above is that:

- A variety of behavioural, cognitive, educational and other strategies may result in increases in physical activity (Hillsdon et al 1995, Dishman and Buckworth 1996)
- Interventions that do not require attendance at a facility are most likely to lead to sustainable increases in physical activity levels in particular walking. (Hillsdon et al 1995, Hillsdon and Thorogood 1996)
- Interventions are most effective when exercise is perceived as enjoyable and convenient (Hillsdon et al 1995)
- Follow up contact increases the success of interventions (Hillsdon et al 1995, Hillsdon and Thorogood 1996)
- Interventions to promote moderate activity (as opposed to vigorous) are more effective (Hillsdon et al 1995, Dishman and Buckworth 1996).

The evidence below is from a consensus symposium held in 1994:

Although not systematic it is the most comprehensive overview of all levels and types of interventions available and the only UK based evidence available:

- The baseline activity characteristics of the target group should guide the choice of intervention (Killoran et al 1994)
- Train health professionals in intervention methods (Killoran et al 1994)
- Select a theory to guide intervention development (Killoran et al 1994)
- Include components that increase self efficacy (Killoran et al 1994)
- Interventions should be based on motivational readiness of the participants (Killoran et al 1994).

The prevalence of physical activity is low and most traditional strategies of promoting facilities for structured exercise have not been successful in reaching those groups at particular risk for inactivity. Continued investigation of how physical activity can be adopted and maintained at a community and population level is needed.

Search strategy

The following databases were searched to identify evidence using the terms “physical activity” and “exercise”.

The Cochrane Database of Systematic Reviews, 2002 Issue 3
Database of Abstracts of Reviews of Effectiveness (includes NHS Health Technology Assessment, Effective Health Care Bulletins and Effectiveness Matters)
Trip Database
Sports Discus Database

Other websites were searched for evidence relevant to physical activity interventions
Including:
Aggressive Research Intelligence Facility
Health Development Agency

In addition Medline was searched using the key words “exercise” and “physical activity” from 1990 to the present.