Systematic review of interventions to increase physical activity and physical fitness in African-Americans

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CRD summary
This review concluded that the most effective intervention programmes to increase physical activity in adult African-Americans involved structured exercise programmes. Studies with explicit cultural adaptations did not necessarily lead to better outcomes of improving physical activity. The authors' conclusions may be not reliable given methodological concerns in the review methods.

Authors' objectives
To assess the effectiveness of interventions to increase physical activity and physical fitness in African-Americans.

Searching
PubMed and Cochrane Database of Systematic Reviews were searched from inception to 2006. Search terms were reported. Reference lists of relevant publications were screened.

Study selection
Randomised controlled trials (RCTs), non-randomised controlled trials and uncontrolled trials that evaluated interventions through lifestyle changes, formal exercise or training programmes in order to increase physical activity and physical fitness in men, women, children or communities identified as African-American were eligible for inclusion. Eligible studies had to report outcome data on assessment of physical activity and physical fitness. Studies where participants were not predominantly (≥85%) African-American were included if outcomes were specified separately for African-Americans. Outcomes reported in the review were changes in physical activity and physical fitness.

Studies evaluated various interventions that included individualised counselling, unstructured and structured exercise programmes and educational classes. All included studies involved healthy participants except for one study in stroke survivors. Included studies were conducted in a variety of community and healthcare settings. Most studies focused on adults. Ages of adult participants ranged from 18 to 91 years; ages of included children and youths ranged from seven to 17 years. Most included studies were RCTs. Durations of short-term interventions ranged from two weeks to eight months; durations of long-term interventions lasted one year or longer. Included studies used accelerometer, pedometer, fitness tests or questionnaires to measure physical activity. Most included studies attempted to adapt interventions to fit African-American culture. The included studies were published between 1985 and 2006.

Two reviewers screened abstracts or full articles for inclusion.

Assessment of study quality
The authors developed a ranking summary score based on study design, degree of focus on physical activity, inclusion of physical activity goals in the intervention, assessment methods of physical activity and cultural adaptation. A higher score indicated higher quality.

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

Data extraction
Data were extracted on the direction and statistical significance of effects. One reviewer performed data extraction.

Methods of synthesis
The studies were combined in a narrative synthesis supported by data tables. Studies with a statistically significant difference between groups were discussed separately.
Results of the review

Twenty-nine studies in adults and 14 studies in children were included in the review. Sample sizes ranged from 10 to more than 1,000; the total number of participants was not reported. Follow-up durations of short-term interventions ranged from four weeks to 12 months; follow-up durations of long-term interventions ranged from one to five years. Methodological quality varied between studies.

For studies in adults, most studies reported a significant improvement in physical activity between pre-post comparisons within the intervention group. Ten studies (six RCTs) reported that interventions led to a significant improvement in physical activity compared with controls. Seven of the 10 studies used structured exercise programmes or exercise training. Only one study reported additional attempts to adapt interventions to fit African-American culture.

Few studies in children reported a significant improvement in physical activity between pre-post comparisons within the intervention group. Three RCTs reported that interventions led to a significant improvement in physical activity compared with controls. Two of the three RCTs used structured exercise programmes or educational classes. No trial reported any additional attempts to adapt interventions to fit African-American culture.

Authors' conclusions

Effective intervention programmes to increase physical activity in adult African-Americans involved structured exercise programmes. Studies with explicit cultural adaptations did not necessarily lead to better outcomes of improved physical activity.

CRD commentary

Inclusion criteria were clear but broad. Relevant sources were searched. Efforts were made to find published studies. Unpublished studies were not sought, which introduced potential for publication bias. The authors did not state whether language restrictions were applied in the search, which made it difficult to assess the risk of language bias. As only one reviewer preformed data extraction, the risk of reviewer bias or error could not be ruled out. Two reviewers performed study selection; it was unclear whether sufficient attempts were made to minimise bias and error during validity assessment. Although the authors assessed some aspects of study quality, the quality scoring system used did not reflect the risk of bias in different study designs. There were no relevant criteria to assess study quality in terms of specific designs such as randomised controlled trials. A narrative synthesis was appropriate given the diversity of included studies. Results were presented and interpreted based on the direction of effect without details of any statistical analysis, which made it difficult to verify the authors’ interpretation. The authors' conclusions may be not reliable given the methodological concerns outlined above.

Implications of the review for practice and research

Practice: The authors stated that practitioners should implement interventions that include a structured exercise programme or provide opportunities to practice physical activity during intervention sessions as one of the components.

Research: The authors stated that further studies with larger sample sizes and longer follow-ups were required to evaluate the effectiveness of interventions to increase physical activity in African-Americans. Future studies should employ a RCT design, use an objective measure of physical activity and evaluate strategies informed by proven behaviour change theories. Further research was required to identify additional characteristics that may increase the effectiveness of interventions for improving physical activity in African-Americans.

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Bibliographic details


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Record Status
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.