Interventions to promote physical activity among African American women

Authors' objectives
To review intervention trials designed to promote increased physical activity among African American women.

Searching
MEDLINE and CINAHL were searched for studies reported in English between 1984 and 2000. The bibliographies of included studies, review articles and book chapters were also checked for additional studies.

Study selection
Study designs of evaluations included in the review
The inclusion criteria for study design were not stated. The included studies were randomised controlled trials (RCTs), non-randomised trials, single-group pre-test post-test studies, single-group repeated measures studies, and studies using a single treatment group with baseline data and outcome data from different participants.

Specific interventions included in the review
Studies focusing on increasing physical activity were sought. Physical activity was defined as 'bodily movement produced by skeletal muscles that requires energy expenditure and produces healthy benefits'. In the included studies, diverse interventions were reported; all studies included deliberate educational interventions designed to alter physical activity behaviour. The majority (n=14) of the included studies also targeted dietary behaviours. Two studies with an individually delivered intervention continued for 6 months of intervention, while the remainder varied from 6 to 18 weeks. The intervention strategies included group meetings, supervised exercise, and individualised education and counselling. Details of the comparators (where used) were given; these included a true control group, an enhanced experimental group, and a waiting-list control group. Some interventions were based on theoretical frameworks. Full details of all the interventions and comparators were given in the paper.

Participants included in the review
The authors did not state any inclusion or exclusion criteria for participants in the review, other than the original intention was to include studies focusing only on African American women. This was expanded to include all studies in which African American women comprised at least 35% of the sample. Where given, the mean age of the participants ranged from 32 to 72 years and the age ranged from 18 to 79 years. The categories of women specifically targeted in the different studies included overweight or obese participants, adults with diabetes, participants with hypertension, and low-income women.

Outcomes assessed in the review
Studies with direct measures of physical activity (e.g. questionnaires about activity or ergometers) were included, as were studies with indirect measures of physical activity (e.g. physical fitness). Specifically, the outcomes included weight, self-report activity records, body mass index, blood-pressure, and scores on the Physical Activity for the Elderly Questionnaire. Full details of all outcomes were given in the review.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.
The following data were extracted from each study: reference details; basic participant characteristics; the number of participants; the proportion of African American women; intervention description; physical activity measure; physical activity outcomes; other significant outcomes where reported; research design; description of the interventions and comparators; and aspects of the cultural relevance of the intervention (recruitment and retention strategies, location and delivery of the intervention, data collection instruments and evaluation, and measures of physical activity).

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review.

How were differences between studies investigated?
Differences between the studies in terms of sample and attrition issues, research designs, interventions, and cultural relevance of the interventions (specifically, recruitment and retention strategies, location and delivery of the intervention, data collection instruments and evaluation, and measures of physical activity), were described in the text and were also tabulated.

Results of the review
Eighteen studies (n=1,623) were included. Of these, 7 (n=503) were RCTs, 7 (n=387) were single-group pre-test post-test or repeated measures studies, 3 (n=86) were non-randomised studies, and one (n=647) was a study of non-standard design that used different participants for the baseline data and outcome data (both sets of participants were exposed to the same intervention).

The interventions yielded mixed results in terms of their effectiveness in promoting physical activity. Six studies that used direct measures of activity reported significant increases in physical activity behaviour. Five studies that used direct measures did not find statistically significant increases in activity. One study with an indirect measure of activity (heart rate) found a significant increase in physical activity following the intervention, while another study using heart rate found no statistically significant increase. Ten studies reported decreased weight, body mass index and waist measurement. Four of the 7 studies that measured the outcome one month or less after completing the intervention found significant increases in activity behaviour. Two of the 3 studies that measured physical activity at least 6 months following delivery of the intervention did not find a significant increase in activity behaviour.

Several studies reported measures of outcomes that could be attributed to changes in either diet or physical activity behaviour. Four of these studies reported significant improvements in health indices.

Of the 10 studies with supervised activity sessions, five found increased activity outcomes. Only 2 studies tested the same intervention, both of which found improved health changes that could be attributed to either a change in diet or change in activity level. Of the 4 studies that based their intervention on a theoretical framework, two reported mixed positive findings, one reported a lack of increased activity, and one reported weight loss from an intervention that focused on both diet and activity behaviour.

The authors reported that it was difficult to summarise the findings across other aspects of the interventions due to inadequate numbers of studies with common attributes.

Authors' conclusions
The number of studies designed to promote activity among African American women is growing, but study design and measurement limitations combined with inadequate replication of intervention components prevent the existing evidence from forming a solid base for practice.

CRD commentary
This was a clearly written review that highlighted the lack of internally valid studies in this area, resulting in limited
confidence in causal connections. The included studies were discussed in detail with the strengths and weaknesses of each study, and for the studies overall, given. It was unclear whether the significant attrition rates of the individual studies were accounted for in the analysis, and failure to use intention-to-treat analysis may have resulted in inflated effect estimates. The search strategy was limited and relevant studies may have been missed, particularly since the search was limited to studies reported in English. The reason for amending the inclusion criteria in the original protocol was given; however, the wider inclusion criteria may have limited the applicability of the results to the original specific group of African American women. Furthermore, most of the included studies used a mixed intervention of diet modification and methods to increase physical activity, despite the original aim to review only methods of increasing physical activity. This limited the internal validity of the overall results.

The tabulated descriptions of the included studies were not entirely consistent with the descriptions given in the text. The results of each included study were only descriptive, and it was unclear whether a reported increase or decrease was statistically significant, and if so, at what level of significance. Despite this, the authors' conclusions seem to follow from the results and a useful set of recommendations for future research was given.

**Implications of the review for practice and research**

**Practice:** The authors stated that this review provided information that may assist nurses in the development of culturally consistent physical activity interventions.

**Research:** The authors stated that further research is needed to find interventions that move more African American women into physical activity and further increase the amount of physical activity among women who do increase their activity. Suggestions for future research were tabulated under the main headings of sampling issues, research design, interventions, and outcome measurements. The authors also stated that there is a need to investigate empirically the roles that study personnel, interaction among participants, and the community play in assisting African American women to adopt more physically active lifestyles.

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