Stand-Alone Mass Media Campaigns to Increase Physical Activity

Updated Findings from the Community Preventive Services Task Force

Community Preventive Services Task Force

Summary: The Community Preventive Services Task Force concludes there is insufficient evidence to determine the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level. Additional research is needed to determine effectiveness.

(Am J Prev Med 2012;43(5):562–564) Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine

Physical activity objectives for Healthy People 2020[1] reflect the strong state of the science supporting health benefits of regular physical activity among youth and adults. Regular physical activity includes participation in moderate- and vigorous-intensity physical activities and muscle-strengthening activities. As noted in *Healthy People 2020*, more than 80% of adults do not meet the guidelines for either aerobic or muscle-strengthening activities. Similarly, more than 80% of adolescents do not do enough aerobic physical activity to meet youth guidelines.

Using a multidisciplinary approach to meet Healthy People 2020[1] targets is critical to increasing the levels of physical activity and improving health in the U.S. Regular physical activity can improve the health and quality of life for Americans of all ages, regardless of the presence of a chronic disease or disability (www.health.gov/paguidelines/).[2,3] Among adults and older adults, physical activity can lower the risk of early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression.[2]

Intervention Definition

Stand-alone mass media campaigns when implemented alone are interventions that rely on mass media channels to deliver messages about physical activity to large and relatively undifferentiated audiences. These campaigns are designed to increase awareness and/or knowledge about benefits of physical activity, influence attitudes and beliefs about physical activity, and change physical activity behaviors within populations at community, state, or national levels. Messages are transmitted using channels such as newspapers, brochures, manuals, radio, TV, billboards, and websites, either singly (with exception of websites) or in combination. Websites supported the use of mass media campaigns but were not used as the sole or primary intervention channel. Stand-alone mass media campaigns are distinct from mass media efforts employed as part of broader multicomponent interventions that also incorporate individually oriented health behavior change programs and activities, social support networks, environmental changes, and/or policy changes.

The Community Preventive Services Task Force (Task Force), an independent, nonfederal group, continues to develop, expand, and update the *Guide to Community Preventive Services* (*Community Guide*) with the support of DHHS in collaboration with public and private partners. The CDC provides staff to support the Task Force. Recommendations presented here were developed by the Task Force and are not necessarily the recommendation of CDC, DHHS, or collaborating agencies or partners. Specific methods for and results of the review of evidence on which this recommendation is based are provided in a companion paper[4] in this issue of the *American Journal of Preventive Medicine*. Methods for conducting systematic evidence reviews and translating the evidence on effectiveness into recommendations for the *Community Guide* have been published previously.[5] Previous findings and recommendations on physical activity from the Task Force are available.[6]

Intervention Findings

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level. Sixteen eligible studies[4]

Names and affiliations of the Task Force members can be found at www.thecommmunityguide.org/about/task-force-members.html.

Address correspondence to: David R. Brown, PhD, CDC, Division of Nutrition, Physical Activity and Obesity, MS K-46, 4770 Buford Hwy, NE, Atlanta GA 30341-3724. E-mail: dbrown@cdc.gov.

0749-3797/00/$36.00

http://dx.doi.org/10.1016/j.amepre.2012.07.026

evaluated stand-alone mass media campaigns of varied intensity and duration (i.e., 1 week to 4 years), targeting varied populations, using diverse control and comparison conditions and diverse physical activity outcome measures, and found modest and inconsistent effects. Based on overall results of this updated systematic review, the Task Force finding of insufficient evidence remains unchanged from 2001.

Rationale for Updated Findings

The 16 studies reviewed, published between 1980 and 2008, evaluated a variety of populations including youth, parents, adults, and older adults, and disseminated media messages in communities, states, and at the national level (e.g., VERB in the U.S.: www.cdc.gov/youthcampaign/). They mainly relied on traditional forms of mass media (print, TV, radio, and billboard) rather than newer media such as the Internet only, and did not use cellular phone messaging or social media channels and sites. Campaign effects on physical activity levels were assessed using a variety of self-report measures evaluating behaviors across studies ranging in duration from 1 week to 4 years.

Ten of the 16 studies, using comparable outcome measures (the proportion of people self-reporting physical activity change), documented a median absolute increase of 3.4 percentage points in self-reported physical activity levels (interquartile interval: 2.4 to 4.2 percentage points) and a median relative increase of 6.7% (interquartile interval: 3.0% to 14.1%). The remaining six studies used different outcome measures: three evaluated changes in self-reported time spent in physical activity (e.g., minutes; median relative change of 4.4% and range of values from 3.1% to 18.2%); three studies employed dissimilar self-report measures (e.g., in two of these, people reported whether or not they were more active as a result of a campaign), which showed only modest increases in physical activity. Overall, the Task Force found no evidence of harms from the stand-alone mass media campaigns evaluated.

The stand-alone mass media campaigns evaluated in these 16 studies varied in their dose, intensity, duration, and reach. They employed varied types, numbers, and combinations of media channels (e.g., TV, radio, newspapers, and billboards). Campaigns also varied in cost, and in the number and types of design elements[7] used in their planning and delivery (e.g., use of theory to guide the intervention, use of formative research, process evaluation, message design and testing, audience segmentation, and tailoring of messages through appropriate channels to reach the intended audiences). When studies were stratified and compared based on total number of these design elements used, four studies that used five or six of the campaign design elements appeared to be associated with greater increases in physical activity (median relative change of 28.3%; range of values: 4.7% to 56.5%) than studies that used four or fewer (median relative change of 3.1%; range of values: −8.0% to 5.4%). However, this association was based on a very small number of studies having large variability.

Self-report measures of physical activity generally are viewed as adequate for studies of population-level interventions designed to categorize people into groups such as inactive, insufficiently active, or active. They are well suited for collecting data from large numbers of people at low cost.[8] However, the self-report measures used in the 16 studies reviewed for this update varied considerably in documentation of their validity and reliability, and in their comprehensiveness and meaningfulness to public health. They ranged from a single question asking respondents whether awareness of the campaign increased their physical activity behavior to more-comprehensive assessments of the type, intensity, frequency, and duration of weekly physical activity. Overall, the great heterogeneity among studies as described above complicated efforts to compare their findings.

The current update focused only on stand-alone mass media campaigns as reviewed by the Task Force in 2001[9] when insufficient evidence also was found. As part of this update, the Task Force did not review evidence for mass media campaigns when used as part of broader multicomponent community, state, or national physical activity interventions. The Task Force also did not review interventions making use of newer media, such as the Internet as a primary intervention, mobile devices, and social networking media (e.g., Facebook, MySpace, Twitter, blogs), which are likely to play a larger role in future mass media and multicomponent physical activity promotion interventions.

Interpreting the Findings

The purpose of this systematic review was to evaluate the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level, and to update the previous review of this topic and the finding of "insufficient evidence to determine effectiveness."[9] Stand-alone mass media campaigns are distinct from mass media efforts employed as part of broader multicomponent community-wide interventions for which the Task Force previously has found strong evidence of effectiveness.[6] The Task Force finding of insufficient evidence to determine effectiveness does not mean that stand-alone mass media campaigns do not improve physical activity at the population level, but rather that more research is needed to determine whether or not they are effective in achieving this goal.

This updated Task Force review of stand-alone mass media campaigns to increase physical activity sought information on other important outcomes related to benefits, harms, cost effectiveness, and applicability of findings. The review identified several gaps in current knowledge that would strengthen future research. It is important to consider and address these gaps if mass media campaigns are used as part of multicomponent community-wide interventions as recommended by the Task Force.[9]

No financial disclosures were reported by the authors of this paper.

References

1. Healthy People 2020. www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=33.
2. DHHS Office of Disease Prevention and Health Promotion. Physical activity guidelines for Americans. Washington DC: DHHS, 2008.
3. DHHS Office of Disease Prevention and Health Promotion. Physical activity guidelines advisory committee report. Washington DC: DHHS, 2008.
4. Brown DR, Soares J, Epping JM, et al. Stand-alone mass media campaigns to increase physical activity: a Community Guide updated review. Am J Prev Med 2012;43(5):551–561.
5. Briss PA, Zaza S, Pappaioanou M, et al. Developing an evidence-based Guide to Community Preventive Services—methods. The Task Force on Community Preventive Services. Am J Prev Med 2000;18(1S):35–43.
6. The Community Guide. Promoting physical activity. www.thecommunityguide.org/pa/index.html.
7. Noar SM. A 10-year retrospective of research in health mass media campaigns: where do we go from here? J Health Commun 2006;11(1):21–42.
8. Sallis JF, Saelens BE. Assessment of physical activity by self-report: status, limitations, and future directions. Res Q Exerc Sport 2000;71(2S):S1–S14.
9. Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med 2002;22(4S):73–107.

Did you know?
You can watch video pubcasts of authors talking about their AJPM articles online? Go to the Multimedia Center online at **www.ajpmonline.org.**