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Research to Practice: Implementing Physical Activity Recommendations

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Abstract

Introduction—Dissemination and implementation (D&I) science focuses on bridging the gap between research and practice. The Community Preventive Services Task Force (CPSTF) published recommendations for increasing physical activity based on scientific review and consensus. Little research on the D&I of these recommendations has been conducted in under-represented populations at high risk for inactivity and chronic disease.

Methods—Partnering with one rural community (beta site), the University of New Mexico Prevention Research Center studied the translation of CPSTF recommendations to practice. Strategies for increasing physical activity were selected, implemented, and analyzed in 2009 to 2013. Participant observations; content analysis of meeting minutes, field notes, and other documents; and in-depth interviews were conducted over the 5-year period to identify factors important for carrying out the CPSTF recommendations for physical activity in a rural New Mexico community.

Results—Included among the implementation outcomes were new sidewalks and trails, a community-wide campaign, social support of walking, and park improvements. The following factors were identified as important to the implementation process: an active community-academic partnership; multiple partners; culturally appropriate strategies; and approaches that fit local context and place characteristics (topography, land ownership, population clusters, existing roadways).

Conclusions—This study illustrates how evidence can be translated to practice and identifies key factors in that process. The successful beta model provides a practical blueprint for D&I in rural, under-represented populations. This model is currently being disseminated (scaled up) to other rural New Mexico communities.

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Introduction

A major challenge for public health and community-engaged researchers is timely transfer of evidenced-based knowledge to practice. Dissemination and implementation (D&I) research addresses this challenge.[1] According to Rabin et al, "Dissemination research is the systematic study of process and factors that lead to widespread use of an evidence-based intervention…" and "Implementation research seeks to understand the processes and factors that are associated with successful integration of evidence-based interventions within a particular setting."[2] Translating science to public health practice has been a priority of the Prevention Research Center (PRC) program since it began. Of the 26 PRCs currently funded, 11 (42%) are conducting D&I research, including the University of New Mexico (UNM) PRC.

The Community Preventive Services Task Force's (CPSTF) published recommendations (in *The Community Guide*[3]) for increasing physical activity at the local level that were based on scientific review and consensus (Table 1; first column). Most active living research has focused on non-Hispanic middle-class populations living in urban and suburban areas.[4] Few studies of the D&I of physical activity recommendations have been conducted in rural, American Indian and Hispanic populations. The purpose of this paper is to describe a successful model for—and identify important factors (as described by Rabin et al[2]) in—the process of D&I of evidence-based recommendations in other rural, under-resourced communities.

Methods

In 2009, the UNM PRC partnered with the Village of Cuba, New Mexico, a small, rural, under-resourced, and tri-ethnic community, to create a beta site for its core D&I research project, Village Interventions and Venues for Activity (VIVA)-Step Into Cuba (approved by the UNM Human Research Protections Office).

Guided by the community's concerns over high rates of obesity, diabetes, and heart disease, the PRC actively introduced and studied translation of the CPSTF recommendations for increasing physical activity. Together with the Step Into Cuba Alliance (the Alliance), a group of local and external partners concerned with the community's health, a logic model was created to ensure that the PRC and community were in accord about goals, desired evidence-based strategies, and anticipated outcomes. The logic model served as a dissemination tool and a framework for implementing and studying chosen strategies.[5]

Strategies Selected and Implemented

The Alliance members and other partners were introduced to *The Community Guide* and its physical activity recommendations early in the process. Six approaches were selected by the community for implementation and analysis between 2009 and 2013: community-wide campaigns, creation of or enhanced access to places for physical activity combined with informational outreach, community-scale design and land-use policies, street-scale design and land-use policies, social support, and individually adapted health behavior change. The

strategies were selected and implemented in ways that the Alliance thought would be feasible in Cuba, New Mexico[6] (Table 1).

Measurement

The UNM PRC worked collaboratively with a subgroup of Alliance members to develop or adapt measurement tools. Methods included in-depth interviews; participant observations; an inventory of created or enhanced places for physical activity; and content analysis of meeting minutes, field notes, and other documents conducted over the 5-year period of the project. The research questions focused on elements of success identified by Milat et al,[7] including establishing an evaluation system; engaging the target community; tailoring to the local context; using participatory approaches; using evidence-based strategies; working with champions; and having adequate infrastructure, political will, and advocacy for the intervention.

Results

Data collected and analyzed during the 5 years of the study indicate that physical activity recommendations from *The Community Guide* can be successfully disseminated and implemented in a rural, under-resourced, tri-ethnic community, as described in Table 1. Working with transportation and land management agencies, the village government, the local school district, and individuals, the Alliance developed new sidewalks and street lighting on the main highway, landscaping of the local park, new community trails, and a plan for a new Cuba-area segment of the Continental Divide National Scenic Trail (CDNST).[6]

Walking groups were created and supported after community recruitment and clinician referral. The community-wide campaign included development of a walking guide, trail-guide app, website, newspaper articles, and informational kiosks. A pedestrian plan was created to guide future community enhancements for physical activity. A Health Impact Assessment was conducted to inform development of the CDNST.[8]

Several factors that were important to D&I at the community level were identified: building on a community-academic partnership; engaging multiple local and external partners; employing culturally appropriate strategies; and using approaches that fit local context and place characteristics (topography, land ownership, population clusters, existing roadways). The study resulted in a model that could be disseminated (scaled up) to other rural communities.

Discussion

In 2012, Glasgow et al emphasized “interaction among three related components needed for effective evidence implementation: (1) practical evidence-based interventions; (2) pragmatic, longitudinal measures of progress; and (3) participatory implementation processes.”[9] The VIVA-Step Into Cuba research found that integration of these components is essential to the D&I process. Evidenced-based recommendations for physical activity from *The Community Guide* that were practical and feasible for rural New Mexico communities were selected

(Table 1). Focusing on implementation outcomes, pragmatic, longitudinal measures of progress were used, and the study was conducted within a strong community-academic partnership that engaged a variety of partners, including public land managers, the state health department, local governments, schools, nonprofit groups, and health care providers. Like Glasgow and Emmons,[10] the PRC and the Alliance placed emphasis on understanding the local context and matching the recommendations to that context. For example, building walking trails on public lands such as National Forest was a good fit for the recommendation related to creating places (built environment) to be physically active. Building trails on these lands also fit local customs that include outdoor activity for work and recreation.

The study was conducted within a strong community-academic partnership.[5] The partnership established evaluation systems; tailored *The Community Guide*'s recommendations to fit the community context and culture; and designed and implemented strategies that were feasible, given the local resources, infrastructure, and political climate. Local champions provided valuable advocacy and leadership.

Limitations

Limitations of this research include a lack of generalizability based on D&I in a single community. However, the purpose of the research was not to establish effectiveness but to demonstrate translation of research to practice in a rural, under-resourced New Mexico community to provide a model for similar communities. The research also lacked a measure of cost, or cost-effectiveness, a recommended component of D&I research. While not directly measured, costs in the project were minimized through volunteerism, in-kind donations, and leveraged funds for several intervention components. Lastly, measures of the desired behavioral outcome—physical activity—are not reported here because the intention was to answer the question “How do you translate research to practice?” and to document the process and outcomes of D&I, which are focused on community, organizational, and policy change, not individual behavioral change.[2]

Conclusions

This study illustrates translation of evidence-based research to practice in a rural, under-resourced, tri-ethnic community. The successful model of the D&I process at the Cuba, New Mexico, beta site provides a practical blueprint for D&I of evidence-based recommendations to other communities. The model has been recognized by the CPSTF[11] and is currently being disseminated (scaled up) to other rural communities in New Mexico.

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Table 1

Implementation Outcomes in Cuba, NM, Based on *The Community Guide*[3] Physical Activity Recommendations

The Community Guide **Recommendation**	**Implementation Outcomes**
Community-wide campaign	Used a variety of communication channels, including a project website (www.stepintocuba.org), walking guides, kiosks with maps and announcements, videos, newspaper articles, community events, and banners
Created and/or enhanced access to places for physical activity combined with informational outreach	Created, enhanced, and promoted 20 miles of trails in 7 locations; planted trees, wild flowers, and shrubs; installed benches; developed parking areas; created and installed kiosks; built a foot bridge; added path and trail signage; produced a walking guide and mobile app with trail information; and engaged volunteers
Community-scale design and land-use policies	Leveraged funding for paving of park trails; developed walkways, bikeways, and equestrian trails; incorporated Safe Routes to School program; recruited participation of regional transportation planning organization; developed fairgrounds; created a park plan; and conducted a Health Impact Assessment (HIA) for a proposed segment of the Continental Divide National Scenic Trail
Street-scale design and land-use policies	Conducted an HIA for highway improvements; provided technical assistance with applications for creation and improvement of sidewalks, street lighting, and crosswalks; and provided recommendations for fairgrounds development
Social support	Recruited walking champions; held community-sponsored physical activity events; promoted activities at the local community center; and engaged volunteers
Individually adapted health behavior change	Promoted walking through physical activity prescriptions from local health care providers and motivational interviewing