Title of Intervention: Stanford Five-City Project

Intervention Strategies: Campaigns and Promotions, Provider Education, Group Education, Supportive Relationships, Environments and Policies

Purpose of the Intervention: To reduce the prevalence of cardiovascular disease risk factors; to reduce cardiovascular disease morbidity and morality

Population: Community residents

Setting: Cities in Northern California (intervention: Monterey and Salinas; control: Modesto, San Luis Obispo, and Santa Maria); community-based

Partners: Stanford Center for Research in Disease Prevention, Monterey County Health Department, organizations in Monterey County, schools, laboratory at Stanford, School of Public Health University of Minnesota, California State Department of Health Services, Media, Monterey County Health Promotion Consortium, Monterey County Health Department's Chronic Disease Prevention Center, Stanford Health Promotion Resource Center, grocery stores, media

Intervention Description: 6-year intervention program of community-wide health education and organization

- Campaigns and Promotions: Mass media strategies included television and radio messages, print messages, contests and promotional events. An hour-long "Heart Health Test" provided general risk reduction information. Other short segments on a local news program covered smoking cessation, cooking, exercise and weight control. A half-hour cooking series broadcasted on local television. About 100 public service announcements were aired on television. The radio was used for brief announcements and short programs (mostly in Spanish). Education delivered through television and radio was designed primarily to deliver information that would affect the attitudes, knowledge and motivation of individuals within the community. Printed material provided more information and focused on skills training. Print media (newspapers, books, pamphlets) was delivered through direct mail, worksites, medical care providers and other local organizations. “Clip-A-Tip” was a nine-part, mass-mail nutritional and recipe program. A weekly newspaper column in both English and Spanish presented smoking information. The "Staying Healthy" booklet covered nutrition. The "Food for Health" booklet covered healthy food options. A cookbook contained healthy, low-fat recipes. Single pages of nutrition information were distributed in grocery bags by grocery stores. Stop smoking contests were held. “Race to Health” was a school-based program encouraging children and their parents to participate in physical activity.
- Provider Education: Training was provided for school and health care facility staff. Multi-factor risk reduction training classes were offered to teachers and school administrators. Seminars were held with various community hospital staffs to discuss how health care professionals can help their patients quit smoking. Health professionals were provided all of the smoking cessation materials developed for use in their practices. Health care providers were also given detailed instructions on how to prescribe nicotine gum.
- Group Education: School-based, community-based and worksite-based group education programs were offered. Mediated and correspondence education courses were offered to community members. An exercise and nutrition program called "Healthy Living" was a major community effort. A program on behavioral problem solving-techniques was conducted twice weekly for eight sessions.
- Individual Education: The program distributed a variety of self-help behavioral change kits for nutrition, exercise and smoking.
- Supportive Relationships: Community coordinators organized walking events as well as a neighborhood-based walking program called “Heart and Sole.” The community-wide "Healthy Living Program" provided social support for behavioral changes. Project CLASP (Counseling Leadership About Smoking Pressures) was introduced in the 6th and 7th grades to prevent smoking onset. Older non-smoking peers were used to teach younger students how to resist pressures to smoke.
- Environments and Policies: Efforts were made to alter food selections at such points of consumption as cafeterias, restaurants and grocery stores.

Theory: Social Learning Theory

Resources Required:

- Staff/Volunteers: Education session leaders, survey center staff
- Training: Not mentioned
- Technology: Nutrient database, multimedia creation
- Space: Space for seminars and other educational components, survey centers
- Budget: Not mentioned
- Intervention: Media sources and time (television and radio), print media (newspapers, books, pamphlets, manuals, newsletters), "kits" used for smoking cessation and weight-loss, prizes for contests, program materials to use in the schools
- Evaluation: Survey material, survey centers, scales, metal rule, space, postage, lab materials needed for specimens, lab, access to death and medical records, food models

Evaluation:

- Design: Quasi-experimental
- Methods and Measures:
    - Process evaluation included activity tracking, attendance/participation, use of education materials
    - Population surveys of health behavior and cardiovascular disease risk factors were conducted at survey centers located in each community. Measures included weight, height, non-fasting venous sample, urine sample, expired air carbon monoxide (index of cigarette use) was measured on the Ecolyzer apparatus, blood pressure
    - Low-level exercise test
    - A 17-item scale was used to measure knowledge of cardiovascular disease risk factors
    - A 24-hour food recall was administered by trained interviewers using food models
    - Death certificates and hospital records were used to determine morbidity and mortality

Outcomes:

- Short Term Impact: Knowledge of cardiovascular disease risk factors steadily increased in both the treatment and control groups, but improvement in the treatment group was significantly greater. There was a significant decline in HDL cholesterol over time. A significant net decrease in blood pressure occurred. Net decreases in the resting heart rate favored intervention participants. In the 24-hour diet recall, dietary saturated fat intake declined significantly in women, but not in men.
- Long Term Impact: Both coronary heart disease and all-cause mortality risk scores were maintained or continued to improve in intervention cities while leveling out or rebounding in control cities.

Maintenance: The Stanford Five-City Project implemented two different strategies to maintain the program. The planning committee proposed to maintain the intervention by organizing a network of groups and agencies that would assume responsibility for those tasks during the post-intervention period. Participants assumed responsibility for one or more of the maintenance tasks (community board, new community health promotion center, multiple community organizations and research and development). Community agencies would need to develop new programs which would require program planning, program evaluation skills, practical knowledge of a range of communication and behavior change strategies. It was decided that the best way to maintain heart disease prevention activity was to develop the health promotion capacity of community health educators. Monterey County Health Department was the lead agency in the capacity-building partnership. The assumption of the capacity-building approach is that the basic skills used to plan, implement and evaluate disease prevention programs are inherently more sustainable. A second strategy was designed to overcome the barriers to implementation that were encountered by the first project.

Lessons Learned: Future efforts should combine general mass media education with program development for special populations and environmental changes that focus on increasing the availability of lower fat fast foods. Those at the highest risk for cardiovascular disease report the lowest use of preventive interventions. These findings indicate the need for systematic research and application of behavioral science theory in developing interventions that are age-appropriate, gender-specific, and culturally-relevant, as well as research examining links between low socioeconomic status and risk of disease. Future tobacco control efforts should

incorporate policy initiatives with educational approaches designed to increase cessation and reduce adoption. Despite the practical limitations of extent and cost, most community-wide health education efforts must be sustained for long durations to have significant effects. Barriers to implementation and dissemination included inter-agency competition for limited local resources, insufficient time to achieve dissemination and coordination of objectives, conflict of interest individual and community priorities and inadequate staff and resources.

Citation(s):

Farquhar, J. W., S. P. Fortmann, et al. (1985). "The Stanford Five-City Project: design and methods." Am J Epidemiol 122(2): 323-34.

Farquhar, J. W., S. P. Fortmann, et al. (1990). "Effects of communitywide education on cardiovascular disease risk factors. The Stanford Five-City Project." Jama 264(3): 359-65.

Fortmann, S. P., M. A. Winkleby, et al. (1990). "Effect of long-term community health education on blood pressure and hypertension control. The Stanford Five-City Project." Am J Epidemiol **132**(4): 629-46.

Fortmann, S. P., C. B. Taylor, et al. (1993). "Changes in Adult Cigarette Smoking Prevalence after Five Years of Community Health Education: the Stanford Five-City Project." Am J Epidemiol **137**(1): 82-96.

Fortmann, S. P., C. B. Taylor, et al. (1993). "Effect of community health education on plasma cholesterol levels and diet: the Stanford Five-City Project." Am J Epidemiol **137**(10): 1039-55.

Fortmann, S. P., J. A. Flora, et al. (1995). "Community intervention trials: reflections on the Stanford Five-City Project Experience." Am J Epidemiol **142**(6): 576-86.

Jackson, C., M. A. Winkleby, et al. (1991). "Use of educational resources for cardiovascular risk reduction in the Stanford Five-City Project." Am J Prev Med **7**(2): 82-8.

Jackson, C., S. P. Fortmann, et al. (1994). "The capacity-building approach to intervention maintenance implemented by the Stanford Five-City Project." Health Educ Res **9**(3): 385-96.

Schooler, C., S. S. Sundar, et al. (1996). "Effects of the Stanford Five-City Project Media Advocacy Program." Health Educ Q **23**(3): 346-64.

Taylor, C. B., S. P. Fortmann, et al. (1991). "Effect of long-term community health education on body mass index. The Stanford Five-City Project." Am J Epidemiol 134(3): 235-49.

Winkleby, M. A., C. B. Taylor, et al. (1996). "The long-term effects of a cardiovascular disease prevention trial: the Stanford Five-City Project." Am J Public Health **86**(12): 1773-9.

Young, D. R., W. L. Haskell, et al. (1996). "Effect of community health education on physical activity knowledge, attitudes, and behavior. The Stanford Five-City Project." Am J Epidemiol **144**(3): 264-74.