IMPACT OF A HEART DISEASE RISK FACTOR SCREENING SURVEY ON AN UPPER-MIDDLE CLASS COMMUNITY

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ABSTRACT: The impact of a community-based heart disease risk factor screening program was evaluated after three years. The study population was predominantly white, older, and upper-middle class. Rescreening of the 211 study subjects showed improvements in both health-related behaviors and in risk factor distributions to a degree which would be expected to reduce the risk of heart disease. Although some changes were attributable to secular trends and regression to the mean, direct impact of the survey itself was also demonstrated.

Reducing the risk of heart disease through life-style intervention is a widely accepted goal. The strong association of cigarette smoking, hypertension, and hyperlipidemia with premature heart disease has encouraged programs to modify these risk factors, especially among individuals with high levels. Follow-up studies have shown that disease rates can be lowered by successfully modifying risk factors. Approaches have included controlled clinical trials, community-wide mass media campaigns, and individual counseling, each of which has advantages and disadvantages.

Community screening programs in which results are reported back to participants are in a sense intervention programs, especially if abnormalities are noted and medical intervention is recommended. Among health conscious individuals, such information could contribute to improvements of health behaviors, subsequent changes in risk factor levels, and potentially lower cardiovascular disease morbidity.

We had the opportunity to evaluate changes in an older, upper-middle class community three years after a heart disease risk factor screening program. This well educated and affluent population had ready access to a local medical clinic and other sources of health care. We analyzed the effect of...
the screening program by considering subjects’ recall of the screening test results, health behavior changes after receiving test results, and changes in risk factor levels. The data suggest that, at least in this relatively optimal setting, screening may have a significant impact on health behaviors and risk factor levels.

METHODS

The risk factor screening survey was conducted as part of the Lipid Research Clinics Program. All 6,100 permanent adult residents of a suburban, upper-middle class, Southern California community were invited to participate in Visit 1 of the program during 1972 and 1973. Approximately three months later, a 15% random sample of the participants from this visit, and all persons classified as hyperlipidemic, were invited for a second evaluation which included measurements of height, weight, blood pressure, and blood tests for fasting plasma glucose (FPG), cholesterol, and triglyceride.

After Visit 2, subjects were informed by mail of their results. Each test was identified only as normal or abnormal, and participants were advised to consult their physician about any abnormalities. Private physicians or the local medical clinic received specific results of measurements and a normal range of values for each test. Abnormal cutpoints for lipids were based on the initial screening of the population. These and other cutpoints are detailed in the Appendix. Current cigarette smoking was reported back to subjects for the purpose of reinforcing its importance as a heart disease risk factor. No other educational or health maintenance activities were undertaken in the community.

Approximately three years later, 1975-1977, a subset of this population was invited to Visit 3 as part of the Lipid Research Clinics Family Study. Information was obtained by interview about health behavior after the second screening visit, and repeat measurements of cholesterol, triglyceride, FPG, blood pressure, height and weight were made. In order to avoid leading questions, subjects were not asked directly if health behavior changes were a result of the survey.

There were 279 participants in the Family Study (probands, spouses and first-degree relatives) who had also participated in Visits 1 and 2. The overall response rates for Visits 1, 2, and 3 were 82%, 89%, and 83%, respectively. Approximately one third of the probands were from the random sample and the remainder were from the hyperlipidemic group. Sixty-eight subjects were excluded from the analysis because, at either visit, they had fasted less than 12 hours, were less than age 20, or were pregnant. Although the resulting sample of 211 subjects was highly selected, it was composed of that part of the target population which had the most exposure to the survey.