

Outreach Scholars Academy
Final Project
Test Model of a Healthy Lifestyle, Intervention Program
with Cooperative Extension

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PROJECT DESCRIPTION - A study to test the effectiveness of a wellness program on health status of employees in a decentralized work place

BACKGROUND / STATEMENT OF THE ISSUES

It has been estimated that the direct and indirect costs for managing obesity, diabetes and asthma exceed 120 billion dollars annually. The estimated cost for obesity alone has been estimated to be 75 billion dollars per year. In New Hampshire, the economic impact is 322 million dollars per year (1). Hereditary factors are important in the development of these chronic health disorders, but non genetic factors related to lifestyle practices of Americans are thought to be the primary cause. Hence, reduced health status of Americans and the economic burden concomitant with it, are reversible through lifestyle intervention programs.

Studies have shown that annual health care costs are 49% lower for individuals who are non obese, exercise regularly and are non smokers. Furthermore, employees who participate in health improvement programs produce savings in medical costs of approximately \$3.50 for each dollar invested, and the savings are realized within 12-18 months (2).

Experimental evidence showing health promotion programs improve personal health of employees in a central worksite, has been documented (3). The effectiveness of a health promotion program for employees whose organization is decentralized in location however, is not.

PROJECT DETAILS

Objectives

The objectives of the present project are two-fold:

1. To evaluate the impact of a healthy lifestyle intervention program on the personal health status of employees of Cooperative Extension, a decentralized organizational model.
2. To evaluate the impact of a healthy lifestyle intervention program on health-claim costs.

Targeted Population: members of Cooperative Extension

Methods

Subject Recruitment and Selection

There are 172 employees of NH Cooperative Extension working in ten county offices (Boscawen, Brentwood, Center Ossipee, Durham, Goffstown, Keene, Lancaster, Hillsboro, Newport and North Haverhill). Eighty participants will be tested each year for 2 years. The study will be conducted in 2 replicates. The rationale for doing the study in replicates is the likelihood that less than half of employees will be willing to participate, at least in the first year and will be more manageable, logistically. An invitation, as well as a letter to participate was submitted in

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Comment [j2]: do the counties need listing?

handout materials from the Dean and Director of Cooperative Extension at the annual Cooperative Extension Meeting on May 26 in Durham. Contingent upon gaining IRB approval, recruits for the program will be given a questionnaire to complete that queries personal characteristics, family health history, use of medications, dietary preferences, activity at work, home and readiness to make personal changes. Recruits will be matched as closely as possible in age, body weight and gender between county offices. County offices then will be assigned to either the intervention or non-intervention control group.

General Health Screening

Dietary Intake – Three day dietary records will be analyzed for nutrient intake and balance of nutrients in diet. *Metabolic Screening* – Small blood sample (finger stick) will be taken to measure blood levels of fasting sugar (i.e. glucose), fats (i.e. triglycerides), and cholesterol and its sub-fractions, along with blood pressure and waist circumference. Abnormalities in ~~any three~~ any three of these measurements are closely associated with developing heart disease, diabetes, stroke and some forms of cancer (4). *Pulmonary Function Test* – Forced expiratory air flow in one second (FEV1) and Peak Expiratory Flow (PEF) will be measured using handheld flow meters donated by Dr. Cameron Wake (please see letter). Impairment of FEV1 or PEF is positively associated with developing diabetes or heart disease (5). *Body Composition* – Analysis of total body fat weight and fat free weight (muscle and bone) will be done by bioelectric impedance.

All tests will be done twice, at the start and after twelve months, except for metabolic screening, and pulmonary function which will be measured at the start, 6 and 12 months later.

Intervention Group: In addition to general health screening, employees will participate in a 10 month education program, and their activity will be monitored weekly, using pedometers. Employees in this group will interact frequently with the program leader.

Education Program

The program will be brought to Cooperative Extension staff by Picture-Tel an interactive distance learning ~~system, whereby~~ system whereby -a wellness coach can motivate and expose participants to people, places, and experiences without the traditional restrictions of time limitations or geographical barriers. Health coaching has been shown to improve the effectiveness of wellness intervention programs (6) and achieve clinically significant improvements in the treatment of obesity (7), diabetes (8) and heart disease (9). Cooperative Extension has Picture-Tel sites in Sullivan, Grafton, ~~Belknap, Rockingham~~ Belknap, Rockingham and Merrimack Counties, as well as in Taylor Hall at UNH. Each site will have a site ~~facilitator -reerucited~~ facilitator recruited from the

Comment [j3]: You might be able to condense the descriptions of some of these measures

Comment [j4]: I think this is where the coach piece should go. I will put it at the end of what is here. It can be condensed more, maybe get rid of some of the clinical evidence.

Family Development area of Cooperative Extension. Several ~~educators have~~ educators have already expressed a desire to be site facilitators. These individuals will be trained by the Center for Health Enhancement (CHE) staff prior to the commencement of the program. The educational component of the program therefore, will be presented ~~live in~~ live in the form of 10-15 minute PowerPoint modules. Each module presents a component of nutrition and emphasizes the benefits for achieving and maintaining health. Each module has an interactive component that tests the participant's knowledge as the information is presented. Participants are encouraged ~~s~~ to ask questions and to add their own comments and to e-mail coaches. It has been found that e-mail is an effective and inexpensive method to deliver coaching interventions to a large number of employees at relatively low cost (10). Built into the modules are ways that the nutrition message can be incorporated into everyday life. The nutrition and exercise modules are followed during each session by a food tasting. Market research has shown, that a high percentage of consumers equate healthy eating with foods that do not taste good. Therefore, the purpose the food tasting component is to have participants sample the foods that could improve their nutritional status, ~~before having to~~ buy a whole loaf or a whole box of an item. Foods are chosen for their nutritional benefit and modes of preparation stress quick and easy recipes. The food component for each session will be provided by the site facilitators.

Comment [j5]: does CHE need to be written out?

Comment [j6]: shorten with something like "making their own purchases"

Pedometers will be worn by employees to record daily activity level in steps. Participants will electronically report their total steps weekly to the program leader. Participants will be coached by the program leader to increase steps accordingly. Research findings have shown 8,000 – 10,000 steps daily, to be associated with weight loss and a reduction in health risks of chronic disease (11,12).

Non-Intervention Group: Employees will undergo general health screening and receive the same fact sheets used in the education program for the intervention group.

Comment [j7]: do we need a comment earlier that states that there are a non intervention and a intervention group?

Evidence of External Collaboration and Partnership

Cooperative Extension is willing to support the project by providing funds to purchase most of the supplies for the project as well as offer prize incentives. We expect that the benefits to Cooperative Extension will be demonstrated in an improvement in health status of employees and a reduction in health claim costs and absenteeism. Successful execution of the study will provide data to validate the effectiveness of our health promotion model that could be adopted by Cooperative Extension educators for use in the county communities that they serve.

The Director and Dean of Cooperative Extension has endorsed this project enthusiastically. He has committed electronic resources (Picture-Tel) and conference and office space to conduct classes and testing, respectively, and funds to purchase most of the supplies. The project will allow us to test our health promotion model and at the same time, provide a service to both the employees and to Cooperative Extension.

Expected Impact

We expect that the project will improve health status of employees. We will assess that by the battery of test measures that will be taken several times during the year. We also expect health claims and absenteeism to be reduced. Cost effectiveness of the intervention program will be assessed with the assistance of Prof. Bob Woodward (McKerley Chair, Health Economics). Findings will be published in a refereed journal such as Journal of Health Promotion or Journal of Occupational and Environmental Medicine, as well as in presentations to the general public and professional organizations.

Scholarly Connection

The research proposed in this application is consistent with the mission of CHE, which is to provide health screening and education services to the public. The project also is an example of translational research of our research interests investigating the cause(s) of obesity and the mechanism by which it promotes chronic health complications. The findings from this project will be used to pursue further funding from either NIH or private foundations to test our health promotion model further in communities that are served by Cooperative Extension educators.

EVALUATION PLAN

The scholarship of the proposed research will be assessed by publishing its findings in appropriate refereed journals. The effectiveness of the outreach component of the study will be indicated by the relative improvement in the personal health status of employees of Cooperative Extension in addition to overall cost savings by Cooperative Extension on insurance claims. The new information that would be gained is that the present model can be applied to a decentralized organization. Individuals within Cooperative Extension can now be trained to implement the model within the counties, as well as disseminate information about the program to other organizations. Also, findings of this project will be presented to Cooperative Extension in other states as a model for possible adoption.

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