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Value of an Educational Program on Osteoporosis

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Value of an Educational Program on Osteoporosis

Abstract

Cooperative Extension helped initiate a community-based educational program on osteoporosis prevention and treatment. The program utilized a network of partners and coalitions. A team approach was taken in presenting the educational session, offered twice, and answering/discussing participant questions. Statistically significant differences were observed in the program participants' reported knowledge of osteoporosis, taking of calcium supplements, eating of a calcium-rich diet, and performing weight-bearing exercises 1 month after the sessions as compared to prior. The results demonstrate that Cooperative Extension can play a leadership role in building partnerships that implement effective programs that improve the health behaviors of individuals and strengthen the community.

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Introduction

An important issue for the Cooperative Extension System is to help individuals with their health needs, especially in terms of prevention. Cooperative Extension plays an active role in health fairs where data on health can be collected. Information collected on individuals participating in bone density scans from the past 2 years prompted community action and Extension intervention in northeast Nebraska.

Although, osteoporosis, a bone thinning disease, has been a major concern for both men and women with increasing age, it was noted from bone density scan data that a larger than normal percentage of young women were assessed at a risk for osteoporosis. In osteoporosis, there is reduced bone mass as well as increased bone fragility and risk of fracture (World Health Organization, 1994).

The natural loss of bone begins to occur at the age of 30 (Institute of Medicine, 1997), so it is crucial to begin taking the necessary actions to obtain peak bone mass during adolescence. Individuals may often prevent osteoporosis with a healthy lifestyle, adequate calcium consumption, and weight-bearing exercise (McBean, Forgac, & Finn, 1994; National Osteoporosis Foundation, 2002a).

Educating individuals in a group setting about the effects of diet and exercise on bone health and attaining and maintaining peak bone mass may be the key component to making appropriate lifestyle changes to help in the prevention of osteoporosis.

The project described here was designed to promote a community-based response to health education in a sustainable way by developing and using a network of partners. This article

describes the health education program carried out by a team of healthcare professionals and university faculty, including those in Cooperative Extension.

Purpose and Objectives

Local health fair participants for the past 2 years have had poor scores on bone density scans of the heel. Seventeen percent of the 163 adults participating in the 2000 health fair screening were considered at high risk. Seventy-seven of the 163 adults were considered at moderate or high risk. The Planned Approach to Community Health (PATCH) group in the community decided to address this problem by sponsoring an educational session called "Bones: Don't Wait Until You Break One to Find Out That You Have Osteoporosis." The group had a team deliver this educational session on three different occasions.

The team, consisting of public health employees, registered dietitians, an Extension specialist, Extension educators, and physicians, developed objectives for this community education session. Because the team provided expertise and knowledge in all realms of human nutrition, health, exercise, and medicine, the sessions had credibility in the healthcare community as well as with the local citizenry. This approach also was intended to build partnerships and coalitions with individuals, communities, organizations, government agencies, and businesses around issues of mutual concern.

Ads were placed in the local newspaper, and posters were displayed in local businesses advertising the session, which was held at the district's Research and Extension Center. Local health professionals presented the educational session, with local physicians being the primary presenters. The educational session emphasized prevention, risk factors, diagnosis, and treatment of osteoporosis. The participants were able to ask questions directed to the physicians and nutrition professionals. Meaningful interactive discussions occurred between the participants and the various health professionals.

The project was intended to connect learners with reputable educational resources. PATCH members believed that by having the local health professionals present the session and answer questions, the participants could better understand how nutrition, health, exercise, and medicine interface regarding prevention and treatment of osteoporosis.

The following general issues were incorporated into the educational session:

- Knowledge of osteoporosis
- The need for an optimal calcium intake
- Bioavailability of calcium
- Food sources of calcium
- Calcium-fortified foods
- Parents as role models
- Issues affecting consumption, such as weight concerns, lactose intolerance, vitamin D inadequacy
- Dietary factors aiding calcium retention
- Weight-bearing exercise
- Prevention and treatment of osteoporosis
- Bone density scans
- Avoidance of smoking and excessive alcohol intake

Pre- and 1-month post-evaluations were obtained from the participants using written questionnaires. Feedback was obtained from 54 of 92 participants (59% response rate). Questions were asked related to participant knowledge about osteoporosis and how often they took calcium supplements, ate a calcium-rich diet, and did weight-bearing exercises (at least three times weekly) before and after attending the session.

Participants were also asked whether they had a bone density test prior to and after the session, because this test is one way to help determine individuals at risk of osteoporosis (National Osteoporosis Foundation, 2002b; National Osteoporosis Society, 2002). Medical history, general health, and lifestyle are also known predictors (National Osteoporosis Foundation 2002a; National Osteoporosis Society, 2002). Chi-square analyses were utilized in evaluating all data.

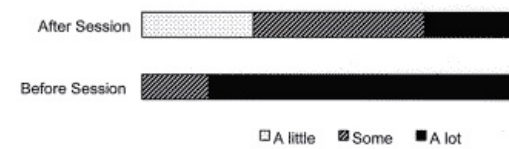
Findings

A dramatic difference ($p < .05$) was observed in the participants' perceived knowledge of osteoporosis after as opposed to before the educational session (Figure 1).

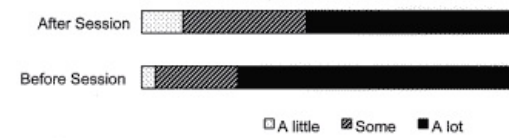
Figure 1.

Participants' Evaluations of Knowledge and Behaviors Regarding Osteoporosis Before and After the Educational Session (Data are expressed as percentages of participants; there were 54 respondents.)

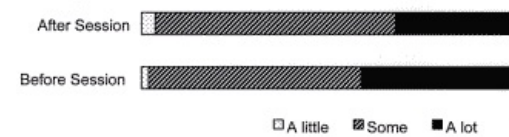
How much did you know about osteoporosis?*



Did/do you take calcium supplements?*



Did/do you eat a calcium-rich diet?*



Did/do you do weight-bearing exercises at least 3 times weekly?*



*Chi-square analyses indicated that the response distributions before and after the educational session were significantly different ($p < .05$).

Eighty-two percent of respondents indicated that they knew "a lot" about osteoporosis after the session, as opposed to only 24% before the session. This difference was most evident in those who had never had a bone density scan. Before the educational session, the majority of the participants (64%) who had a bone density scan had "some" knowledge of osteoporosis. The majority of the participants (46%) who had never had a bone density scan indicated that they had only "a little" knowledge of osteoporosis.

After the session, 86% of those who had a bone density scan prior to the session indicated that they had "a lot" of knowledge about osteoporosis, as compared with only 21% before. After the session, 55% of those who had never had a bone density scan indicated that they had "a lot" of knowledge about osteoporosis compared to 27% before the session.

Statistical analyses of responses for those taking calcium supplements, eating a calcium-rich diet, and doing weight-bearing exercises at least three times weekly changed from before to after the educational session, with the response distribution being significantly different at $P < 0.05$ (Figure 1). About 20% more respondents reported "always" taking calcium supplements after the session. Thirty-two percent indicated "always" eating a calcium-rich diet prior to the program, while 41% did following the session. Thirty-four percent "always" did weight-bearing exercises at least three times weekly before the session, compared to 40% after the session. No differences were observed in response distributions to these three questions between those who had and had not had a prior bone density scan.

Because participants specified their age categories, evaluation of the effectiveness of the information within these categories was conducted. The response distributions of those taking calcium supplements by age categories were significantly different ($P < 0.05$) after the session compared to prior to the session. Dramatic increases in the percentages of respondents taking supplements "always" after the session were observed in those over 30 years old (from 57 to 78%). The most dramatic increase was observed in the 50-59 year-old group, from 63 to 92% "always" taking calcium supplements.

Conclusions and Recommendations

As a result of this study, there were requests for additional nutrition and health education sessions. The team approach taken in presenting the educational session and answering/discussing participant questions likely influenced its success. The educational session described in this study illustrated that nutrition Extension specialists and Extension educators can form alliances with other health professionals, and together they can present effective programs designed to alter the nutritional behaviors of individuals within their local communities. Likely this approach to educating people about osteoporosis would be successful in other geographic areas. Efforts are being made by the community's healthcare professionals and Cooperative Extension to offer additional healthy lifestyle programs using similar educational strategies. Programs such as this provide unique opportunities for Cooperative Extension to become involved in national nutrition

and health education campaigns.

Acknowledgments

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