Lessons Learned from Employee Fitness Programs at the Marshfield Clinic

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ABSTRACT

Purpose: To describe and evaluate employee fitness programs at the Marshfield Clinic.

Methods: A 16-week program was offered to employees from April-July 2004, and a 12-week program was offered from August-November, 2004. Weekly e-mails included suggestions to increase physical activity and eat a healthy diet. Incentives were offered for meeting program goals.

Results: A total of 1129 employees signed up for the first program (approximately 18% of all employees) and 610 for the second program. More than 95% of the participants in both programs were female. The activity program goal was met by 231 (20.5%) participants in the first program and 31% (n=190) of participants in the second program. There was a significant increase in the percent of people with good or excellent fitness levels from baseline (46.4%, 95%CL=40.5, 52.3) to follow-up (70.7%, 95%CL=65.3, 76.0) in the first program. In the second program, there was a significant association between the number of program goals met and self-report of having increased energy, better weight control, and feeling better overall and about body image.

Conclusion: Emphasis in future programs should be placed on increasing employee participation. Program evaluation could be expanded to include health care costs and employee absenteeism.

INTRODUCTION

The obesity epidemic in the United States has been the topic of many lay and professional articles, with national data from 1999 to 2002 indicating that 65.1% of US adults aged 20 years and older are overweight or obese (body mass index ≥25), 30.4% are obese (body mass index ≥30), and 4.9% are extremely obese (body mass index ≥40).1 Physical activity not only helps to maintain weight, but it is also associated with lower mortality rates for adults, decreased risk of colon cancer, decreased risk of diabetes, increased muscle and bone strength, and improved mood and psychological well-being.2 In recognition of the importance of physical activity in health and well-being, physical activity and fitness have been named as one of the Healthy People 2010 objectives2 and as a Leading Health Indicator.3 To support increased physical activity in adults, an additional Healthy People 2010 objective is to “increase the proportion of worksites offering employer-sponsored physical activity and fitness programs.”2 This objective has a 2010 target of 75% for the proportion of employees who participate in employer-sponsored health promotion activities, from a baseline of 61% nationwide in 1994.4

Authors of 2 quantitative reviews of published evidence about the effectiveness of worksite interventions to improve physical activity among employees were highly critical of the design of the majority of previous studies.5-6 It could be argued that fully randomized designs advocated by these authors may not be generalizable to many worksites as the results may not represent what is likely to occur in the “real world” and that more research is needed about methods that are successful in “real world” workplaces to motivate employees to increase their level of physical activity. The purpose of this study was to describe and summarize the results of 2 employee activity incentive programs at the Marshfield Clinic.

METHODS

Description of Worksite

The Marshfield Clinic is a fully integrated health care system with 41 sites across 34 rural communities in central and northern Wisconsin. As of September 8, 2004, there were 6539 total staff members across all sites. A Work/Life program, staffed by 3 full-time employees is avail-
able to all employees and offers seasonal incentive health programs, fitness classes, indoor and outdoor walking paths, and newsletters on a variety of topics. Volunteer liaisons at each regional center help to distribute program information and encourage participation in programs.

**Description of the 16-Week Program**

The “Fitness Around the World” employee activity incentive program ran for 16 weeks, from April through July 2004. The final incentive, a pen, was earned by logging 40,000 miles where each minute of moderate physical activity was equal to 10 miles. Bonus miles were earned by completing stretch band exercises (stretch band and exercise instructions were provided at program kick-off) and a 1-mile walk test described below. A map of walking routes near the Marshfield Clinic that ranged from .75 mile to 2 miles was provided to participants at the program kick-off. Weekly e-mails provided motivational support and tips to increase activity and improve diet. Participants were asked to record their minutes of moderate physical activity on a daily basis.

**Description of the 12-Week Program**

In collaboration with the American Cancer Society®, the Active for Life program was offered from August 15 through November 6, 2004. The 2 program goals were to: (1) set a personal physical activity point goal for the 12 weeks (1 minute=1 point), and (2) eat 5-9 servings of fruits and vegetables on at least 5 days per week of the program. At the program kick-off, logs were given to participants to record daily points of physical activity and daily attainment of the fruit and vegetable intake goal. The final program incentive (a mouse pad with photo insert) was earned by meeting both goals and completing the on-line program evaluation form. Throughout the 12 weeks of the program, participants received informational e-mails and web links were provided to the American Cancer Society’s® *Because We Care* newsletter.

**Program Evaluation**

Participants were asked to complete a brief questionnaire before and after the programs. Questions asked at both time points for both programs included current level and frequency of physical activity, reasons for participation in the program, body mass index (BMI), blood pressure, and resting heart rate. Participants were asked to record whether they had reached the program goals and how they felt they had benefited from the program, how often they met with their fitness partner if they had one, and whether they would encourage others to participate in the program in the future.

Data were entered by the participants directly into the computer through the Marshfield Clinic Work/Life intranet site; SPSS® was used for analysis. Chi-squared analyses and t-tests were used to test the significance of univariate associations and a P-value of <0.05 was considered to be statistically significant. Analysis and publication of the de-identified data were determined by the Marshfield Clinic Institutional Review Board to be exempt from further consideration.

**RESULTS**

**16-Week Program**

A total of 1129 employees signed up for the fitness incentive program (approximately 17% of all Marshfield Clinic employees). The age of program participants ranged from 19 to 66 years (median 42 years). There were 1087 female participants (21.7% participation rate in female employees) and 42 male participants (2.8% participation rate among male employees). Thirteen percent of participants (n=148) elected to have a fitness partner. The program goal of 40,000 miles was met by 231 (20.5%) participants. Anecdotally, some participants indicated that it was difficult to reach the physical activity goal that was set for them and that they would have preferred to set their own goal. Program evaluations and follow-up data were supplied by 313 (27.7%) of the program participants. Of the 313 who completed the evaluation, 259 were confident that they would participate in the program again next year (82.7%).

Mean self-reported BMI was 27.3 (SD=6.3) at baseline and 26.4 (SD=6.1) at follow-up; the mean change in BMI was –0.12 (SD=2.1). Mean self-reported heart rate decreased from 71.1 (SD=10.9) to 67.7 (SD=9.1) over the 16 weeks of the program. Mean systolic blood pressure decreased from 117.0 (SD=13.1) to 115.0 (SD=13.1), while mean diastolic blood pressure decreased from 71.5 (SD=9.1) to 71.1 (SD=8.).
In the 276 people for whom pre- and post-fitness level data were available, 148 (53.6%, 95%CL=47.7, 59.5) improved their fitness by 1 or more levels (Figure 1). There was a significant increase in the percent of people with good or excellent fitness levels from baseline (46.4%, 95%CL=40.5, 52.3) to follow-up (70.7%, 95%CL=65.3, 76.0). At follow-up, fitness level was significantly inversely associated with age group (Mantel-Haenszel chi-squared=4.68, \( P \)-value=0.03). People who had a fitness partner were more likely to improve their fitness level (59.4% versus 52.9%) but this finding was not statistically significant due to small numbers (chi-squared=0.48, \( P \)-value=0.49).

Change in BMI differed significantly between those who did and did not change their fitness level (-0.58 and 0.48, respectively; \( t =-2.65, P=0.01 \)). There were several significant differences in self-reported benefits of participation in the program when analyses were stratified by whether people improved their fitness level, did not improve their fitness level, or had an excellent fitness level at both time points, including feeling better overall, feeling more productive at work, and sleeping better (Table 1).

### 12-Week Program

Six hundred ten employees participated in the 12-week program (9% of employees). Evaluations were completed by 261 participants (42.8%). The mean age of participants was 43.6 years (range 20 to 68) and almost all (n=258) were female. Thirty-three percent (n=199) met the program goal of eating 5 or more servings of fruits or vegetables at least 5 days per week, and 31% (n=190) met their self-identified activity goal. The percent of participants who met none, 1, or both program goals, was, respectively, 64%, 8%, and 24%. Less than half of the participants who completed the evaluation

<table>
<thead>
<tr>
<th>Benefit</th>
<th>% of Group That Did Not Meet Goal</th>
<th>% of Group Who Met Either Activity or Food Goal</th>
<th>% of Group That Met Both Program Goals</th>
<th>Test For Linear Trend, ( P )-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have increased energy</td>
<td>46.3</td>
<td>61.7</td>
<td>70.8</td>
<td>8.83, 0.003</td>
</tr>
<tr>
<td>I have better control over my weight</td>
<td>24.2</td>
<td>29.8</td>
<td>43.4</td>
<td>6.33, 0.012</td>
</tr>
<tr>
<td>I am able to handle stress more effectively</td>
<td>34.1</td>
<td>51.1</td>
<td>38.6</td>
<td>.001, 0.973</td>
</tr>
<tr>
<td>I feel better overall</td>
<td>43.9</td>
<td>68.1</td>
<td>73.1</td>
<td>11.37, 0.001</td>
</tr>
<tr>
<td>I sleep better</td>
<td>14.6</td>
<td>34.0</td>
<td>29.8</td>
<td>2.34, 0.126</td>
</tr>
<tr>
<td>I feel better about my body image</td>
<td>14.6</td>
<td>17.0</td>
<td>28.7</td>
<td>4.77, 0.029</td>
</tr>
<tr>
<td>I feel more productive at work</td>
<td>17.1</td>
<td>17.0</td>
<td>19.9</td>
<td>0.256, 0.613</td>
</tr>
<tr>
<td>I have better working relationships with peers</td>
<td>7.3</td>
<td>4.3</td>
<td>7.0</td>
<td>0.024, 0.876</td>
</tr>
</tbody>
</table>

Significant linear trends are highlighted in bold.

### Table 1. Self-Reported Benefits of Participation in Program by Improvement in Physical Fitness Level

<table>
<thead>
<tr>
<th>Benefit</th>
<th>No./(%) of People with Excellent Fitness Level at Both Time Points Who Reported Benefit</th>
<th>No./(%) of People with Improved Fitness Level Who Reported Benefit</th>
<th>No./(%) of People without Improved Fitness Level Who Reported Benefit</th>
<th>( P )-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Energy</td>
<td>34 (70.8%)</td>
<td>86 (58.1%)</td>
<td>42 (52.5%)</td>
<td>0.122</td>
</tr>
<tr>
<td>Feel Better Overall</td>
<td>32 (66.7%)</td>
<td>98 (66.2%)</td>
<td>40 (50.0%)</td>
<td>0.041</td>
</tr>
<tr>
<td>Maintained Bodyweight</td>
<td>21 (43.8%)</td>
<td>40 (27.0%)</td>
<td>27 (33.8%)</td>
<td>0.089</td>
</tr>
<tr>
<td>Lost Bodyweight</td>
<td>18 (37.5%)</td>
<td>47 (31.8%)</td>
<td>18 (22.5%)</td>
<td>0.162</td>
</tr>
<tr>
<td>Feel Better About Body Image</td>
<td>18 (37.5%)</td>
<td>45 (30.4%)</td>
<td>19 (23.8%)</td>
<td>0.248</td>
</tr>
<tr>
<td>Able to Handle Stress Levels</td>
<td>22 (45.8%)</td>
<td>54 (36.5%)</td>
<td>25 (31.3%)</td>
<td>0.253</td>
</tr>
</tbody>
</table>

Significant results are highlighted in bold.
provided information about body mass index, blood pressure, or blood cholesterol, thus no meaningful statistical analyses could be undertaken with these data.

Table 2 includes comparisons of the percent of participants who indicated that the statement reflected one of the top 3 ways they benefited from the program. Statistically significant associations are highlighted. There was a significant linear trend between the number of program goals met and self-report of having increased energy, better weight control, and feeling better overall and about body image.

Table 3 includes comparisons of the percent of people who did or did not meet their program activity goal who listed an item as one of their top 3 barriers during the program. The list of potential barriers related to activity, not to the goal of eating 5 or more fruits or vegetables per day. Statistically significant associations are highlighted. For everyone, busy work and home/family schedules were listed as the most important barriers during the program. People who did not meet their activity goal were almost twice as likely as people who met their activity goal to list lack of internal motivation as 1 of their 3 top barriers. They were also more likely to indicate that they lost interest in keeping records and could not set an attainable goal. In general, participants who met their goals were more likely to list external barriers (weather, work, home) and participants who did not meet their goals were more likely to list internal barriers (motivation, loss of interest in keeping records, could not set attainable goal).

**DISCUSSION**

The majority (85%) of US adults do not engage in the recommended 30 minutes of moderate physical activity 5 or more days per week. Worksites offer the potential to reach many adults with health promotion messages and activities because the majority of adults spend nearly half their waking hours at their workplace. The results of our study should be applicable to similar health care organizations but may or may not be applicable to other employee groups.

The percentage of employees that participated in the Marshfield Clinic Work/Life Fitness Around the World program (20%) and Active for Life program (9%) was less than the Healthy People 2010 goal of 75% employee participation in employer-sponsored health promotion activities and was especially low for males. Several factors could have been involved in the relatively low participation rate. The first program ran into summer, and the second program began at the end of the summer, when many employees take vacation. We will track participation in wellness programs in the future to see if there is seasonal variation and query employees to determine if their program needs vary throughout the year. If there is large seasonal variation in program participation and need, the program dates and offerings could be changed to better suit the needs of employees. A preliminary study of non-participants in worksite-based health promotion activities at a large Midwestern university found that lack of time was the most commonly cited reason for non-participation.

Anecdotally, a number of employees indicated that it was difficult to meet the externally-set physical activity goal and that they would have preferred to set their own goal. This may have been a deterrent for some people to participate and may also have discouraged completion of the program evaluation. In the future, we will monitor the participation rate in relation to whether program...
goals are externally or individually set and also monitor successful completion of program goals by how the goals were set. Another option would be to set the program goal based on the 1-mile walk test, where successful completion of the program requires either improving individual fitness at least 1 level and/or having “good” or “excellent” fitness level.

A common criticism of wellness programs is that more motivated individuals participate. The distribution of BMI and physical fitness levels at baseline in the first program, as well as the increased physical activity level observed through the program, suggest that this program did not attract only those people who were already physically active. Also of importance, even those people who had excellent fitness levels before and after the program reported feeling better and more productive and sleeping better as a result of participating in the program.

In conclusion, the majority of participants in these physical activity programs increased their physical activity level and this increase in physical activity level was associated with feeling better overall. Many of the lessons that we have learned and future challenges that we face may be applicable to other large employers (Table 4). Emphasis in future programs needs to be placed on increasing the percentage of employees who participate in the program, particularly males. Different approaches to goal setting should also be explored to assess affect on participation and individual success. Program evaluation could be expanded to include health care costs and employee absenteeism.

Table 4. Lessons Learned and Future Challenges at the Marshfield Clinic with Employee Activity Programs that May Be Relevant to Other Large Employers

<table>
<thead>
<tr>
<th>Lessons Learned</th>
<th>Future Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employees prefer to set their own fitness goals</td>
<td>• Strategies to increase employee participation, especially men</td>
</tr>
<tr>
<td>• Successful attainment of goals is associated with improved health and well-being</td>
<td>• Methods to track progress toward goals without being an undue burden on participants</td>
</tr>
<tr>
<td>• The summer months may not be the best time to initiate programs due to vacations</td>
<td>• Explore additional evaluation measures, e.g. absenteeism, health care costs, affect on employee recruitment and retention</td>
</tr>
</tbody>
</table>

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REFERENCES

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