

Obesity and the Built Environment

Worksites, Employers and Employees

Prepared by

David Chenoweth, Ph.D., FAWHP

President

Health Management Associates

New Bern, North Carolina

&

Professor and Director, Worksite Health Promotion

Department of Health Education & Promotion

College of Health & Human Performance

East Carolina University

Greenville, North Carolina

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Burden of Obesity

Obesity, defined as Body Mass Index (BMI) greater than or equal to 30.0, is a serious health problem in the United States. Approximately 97 million adults are obese (BMI 30+) or overweight (BMI 25.0 –29.9).¹ According to the National Center of Health Statistics, the incidence of obesity in U.S. adults has increased from 19.4% in 1997 to 24% in 2003.² Moreover, in the last 20 years, obesity rates have increased by more than 60 percent in adults resulting in today's epidemic.³

Obesity is a major public health problem with both genetic and environmental causes. A major environmental factor that contributes to obesity risk is the amount of physical inactivity. Technological improvements at home and in the workplace – through use of energy saving devices such as remote control switches, automatic doors, electric dishwashers, escalators, e-mails, and the universal access to public transportation have reduced physical activity among the population and made many workers sedentary .⁴

In particular, the burden placed on our society by obesity and related chronic diseases is enormous. The prevalence of obesity and its related conditions have a major negative impact on industries in the United States due to increased use of health services by employees. Moreover, obesity and its complications cost the nation \$117 billion annually.⁵ By way of comparison, obesity has roughly the same association with chronic health conditions as does 20 years of aging, and the costs of obesity were recently estimated to exceed the health care costs of smoking and problem drinking.³ Yet, even a modicum weight loss can mitigate some of these unhealthy consequences. For example, using a dynamic model of the relationship between BMI and the risks and costs of five diseases, Oster and colleagues found that a sustained 10% weight loss would make significant reductions in the incidence of chronic obesity-related illness. For a man or woman aged 45-64 years, the lifetime savings of treatment costs for such a reduction ranged from \$2,500 to \$5,300, depending on the level of severity of the initial obesity.⁶

In addition to the preceding medical care cost liabilities, employees and employers alike incur additional cost from the impact of obesity on absenteeism, which inextricably results in lost employees' income and lower corporate profits. For example, Tucker and Freidman's epidemiological study found that obese employees were 1.74

times more likely to experience high-level of absenteeism (seven or more absences due to illness during the past 6 months), and 1.61 times more likely to report moderate absenteeism (defined as three to six absences due to illness during the past 6 months).⁷ Moreover, obese workers also tend to incur greater productivity losses than non-obese employees.⁸

A number of leading health authorities and researchers agree that in order to reverse the weight gain trend, collective national action and commitment is necessary to support healthy lifestyles.⁹ Others agree and propose that the main factors responsible for obesity in industrialized nations are environmental and assert, “there is strong evidence that the environment contributes to obesity by promoting problematic dietary and activity patterns.”¹⁰ For example, negative perceptions of the physical environment and the absence of enabling infrastructure were found in one study to be associated with overweight status, in comparison with other risk factors.¹¹

Nationally, the overweight and obese population that need to be reached is too large for actions that rely solely upon individual interventions, which target one person at a time. Instead, preventing obesity will require coordinated policy and environmental changes that affect large populations simultaneously.³

Worksite Interventions

Worksites can be receptive settings for health promotion (i.e., weight control) programs because they provide access to specific populations that have unique and professional identities in an established organization.¹² In addition, worksite interventions provide opportunity for change since communication channels have been created and can reach large numbers of people at a relatively low cost.¹³ In particular, changes in policies, work structure, benefits, incentives, healthy food offerings, and physical activity opportunities can deliver healthy options for employees to choose from at their worksites.¹⁴

. The *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* identified action steps to prevent and/or decrease obesity as well as to modify inappropriate dietary behaviors. Some of these action steps include the developing more opportunities for physical activity at work sites. Yet, in reality, many worksites are not

environmentally conducive for workers to be physically active or eat healthy foods in their quest for good health and weight control. Unfortunately, many worksites were built without sidewalks or bike trails to support obesity prevention strategies such as physical activity. And, many office buildings where millions of Americans work, tend to have inaccessible and uninviting stairwells that are seldom used. Yet, point-of-decision prompts that encourage workers to use the stairs instead of elevators or escalators can be effective in getting people to be more physically active. For example, a longitudinal study of four sequential environmental interventions (installing new carpet and painting the walls; adding framed art work on the stair landings; displaying motivational signs throughout the worksite; and, adding a stereo system and playing various types of music) showed that motivational signs and music significantly increased stair use nearly 9% over baseline usage.¹⁵ Point of decision prompts are signs that encourage people to use nearby stairs for health benefits or weight loss. In addition, efforts made in worksite settings to provide social support for weight loss via exercise can be effective. These interventions focus on building, strengthening, and maintaining social networks that provide supportive relationships for behavior change (e.g., setting up a buddy system, making contracts with others to comply with dietary modifications, and setting up walking groups to provide friendship and support. For example, employees participating in three weight loss competitions in business and industrial settings lost an average of 12 pounds.¹⁶ One competition was between three banks; the other two were within industries, either between employee teams selected at random or between divisions of each worksite. All employees attended an orientation session and weekly educational sessions and paid \$5 into a monetary pool that was dispensed to the winning teams at the end of the competition. Each team's weekly weight loss performance was displayed weekly on a large board at each of the respective worksites. Attrition in the competition was less than 1 percent. Both employees and management reported positive changes in morale and employee/management relations, and both considered the element of competition important to the success of the program. The cost-effectiveness ratio (\$2.93 per 1 percent reduction in percentage overweight) is reportedly one of the best.

The work site treatment of obesity has now been studied more thoroughly than any other form of worksite treatment. For example, three consecutive studies of weight

reduction at the worksite were conducted with 172 female union members, who participated in 16-week behavioral group programs may reveal some strategic implications for decision-makers.¹⁷ There was a high rate of attrition and a striking consistency in the very high dropout rates over very short periods of time. This phenomenon occurred in programs that varied widely in setting and in the nature of the populations under treatment. The attrition rates were more than four times higher than those in clinical programs that employ precisely the same program. There were several factors responsible for this attrition rate. The first one is the work site programs are usually offered at no cost and the participation is convenient. Second, social pressures from management or from fellow employees may induce some persons to enroll in programs that would otherwise not attract them. Third, participants in clinical program are more often of a higher socioeconomic status than those in worksite program. The notable finding was that non-professional group leaders performed as well as experienced professional groups. The availability of non-professional leaders in the work site and in self-help groups makes these two very important vehicles for the delivery of interventional programs. A surprising finding was the degree of acceptance of the program by both leaders and union members. Not only did the union request continuing help in establishing programs but also it paid future program costs. Future worksite programs will doubtless pay attention to these other outcomes as well as to the health benefits. Finally, using today's computerized technology may also be a viable way to promote better eating habits as a means to reduce obesity. For example, weekly communication for 6 months via a totally automated, computer-based voice system increased dietary fiber intake and decreased saturated fat intake, as a proportion of energy intake, among adults who were sedentary and had an unhealthy diet.¹⁸

Call to Action

Published research shows that environmental and policy interventions promoting opportunities for employees to be physically active and eat right can reduce the prevalence of overweight and obesity. Yet, we have to expand the scope of these opportunities by helping worksite personnel throughout the nation identify safe, affordable, and environmentally-suitable strategies for their respective workforces. In particular, linking environmental change strategies with social marketing techniques may

offer the greatest potential for future impact.³ Although most worksites do not have an on-site fitness center, there are many other strategies that employers can adopt such as on-site walking trails, stair climbing prompts, heart healthy entrées, healthy vending machine choices, healthy food discounts in the cafeteria, providing stationary bikes and treadmills in break areas, offering incentives for distance parking, extending lunch times for noon-time walkers, collaborating with local organizations (e.g., schools) that have recreational facilities, offering health premium discounts for obesity prevention actions, and requiring all health plan providers prescribe exercise and dietary modifications to employees and dependents, when appropriate.

The current media publicity on the perils of obesity may provide a good “teachable moment” for employers to take action against this troubling dilemma. Simultaneously, we need to strengthen our research efforts to identify best practices for obesity prevention and intervention that can be tailored to worksites of all sizes, demographic constituencies, and on-site resource capabilities. Given the multidimensional causation of today’s obese culture – from genetic predisposition and environmental barriers to automation and technological advances and – well crafted worksite strategies represent an important *part* of an overall comprehensive effort that will be necessary if we are to successfully mitigate the troubling trend of obesity in our nation.

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