

WORKPLACE WELLNESS PROGRAMS: PROVEN STRATEGY OR FALSE POSITIVE?

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The cost of health care and the rate of uninsurance in the United States continue to rise as American firms struggle to contain the cost of health coverage. Workplace Wellness programs may be a way to mitigate the rising cost of insurance by improving employee health, reducing demand for medical services, lowering the cost of insurance for firms, and by decreasing the cash firms lose to unhealthy employees by increasing productivity and reducing absenteeism. This paper assesses the potential benefits of Workplace Wellness Programs by presenting the shortcomings as well as the potential impact of current evaluation literature given programs such as Healthy Workforce 2010, and gives recommendations for producing statistically rigorous research to make HHS advice more applicable to a broader range of firms.

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INTRODUCTION

The cost of health care and the rate of uninsurance in the United States continue to rise as American firms struggle to contain the cost of health coverage. While many employers do not offer health insurance, those who do are in search of a way to make it more affordable. The proportion of employees insured by an employer's health plan fell from 65 percent in 2001 to 61 percent in 2004, as the employee premium charges rose 59 percent over the same period (Gable, et al 2004, 1). Workplace Wellness programs may be a way to mitigate the rising cost of insurance by improving employee health, reducing demand for medical services, lowering the cost of insurance for firms, and by decreasing the cash firms lose to unhealthy employees by increasing productivity and reducing absenteeism.

Workforce wellness programs represent a significant investment for many corporations and are a federal recommendation included in the Department of Health and Human Services' (HHS) Health Workforce 2010 Plan. However, Workforce Wellness programs have not been rigorously evaluated. HHS has an obligation to recommend or commission appropriate studies and to formally recognize in their literature the shortcomings of current research. In this paper I will assess the potential benefits of Workplace Wellness Programs, present the shortcomings as well as the potential impact of current evaluation literature given programs such as Healthy Workforce 2010, and give recommendations for producing statistically rigorous research to make HHS advice more applicable to a broader range of firms.

Nearly ninety percent of firms in the United States offer some form of employee health promotion program and some sixty-one percent of American employees over eighteen participate in an employer based health promotion activity (Trudeau et al 2002, 62) (Healthy Workforce 2010, 2001, 14). The Department of Health and Human Services (HHS) has embraced Workplace Wellness programs as a way to address rising insurance costs in the private sector and outlined the advantages of such programs in the 2010 Healthy Workforce Initiative, complete with targets for number of participating firms, and guides for establishing such programs.

Workplace Wellness Programs are an extremely appealing solution to the health care crisis for HHS, since the government bears none of the cost. Yet, while scholarly articles generally concur that preventative programs are cost-effective for voluntary participants, many literature reviews report pervasive methodological flaws (Goetzel, et al 1998, 341). Most studies of Workplace Wellness Programs are quasi-experimental, measuring the effects of voluntary participation, and thus unable to control for selection bias.

Moreover, while the Healthy Workforce Initiative's model preventative programs have multiple components, research has not determined which components are most cost saving or effective. HHS provides no guidance for small businesses as to which components to implement, or in what order. In fact there is little consensus about which combination of elements is cost-effective.

WORKFORCE WELLNESS PROGRAMS

Workplace Wellness programs are built of comprehensive, long-term and preventative health promotion activities. To be considered comprehensive, programs must provide health education, supportive social and physical environments, integration of the worksite's program into organizational culture, and screening programs. While programs vary in intensity, length, and breadth, components are generally related to ancillary health support, high-risk identification and management, or demand management (Goetzel, et al 1998, 539). Ancillary health support programs include weight management assistance and smoking cessation; health risk identification concerns developing health improvement plans with professional support; while demand management consists of consumer health education about where and when to seek professional care. Most model programs include several activities from each category. (Goetzel, et al 1998, 342).

How Firms Benefit from Workplace Wellness Initiatives

The health care costs of preventable disease are generally connected to high-risk behaviors like smoking, substance abuse, drunk driving, and obesity. Adults with multiple risk factors generally incur higher healthcare costs, more sick days, and lower productivity, raising the cost firms must pay for coverage (Healthy Workforce 2010, 2001, 1). Firms may theoretically benefit from Workforce Wellness Programs by cutting insurance costs, and improving the health of employees, which results in greater productivity and lower absenteeism.

Research suggests that most returns on program investment (ROI) come from improved employee productivity as opposed to lower healthcare utilization rates. A 1998 meta-analysis of five studies on absenteeism found that health promotion programs had a productivity return on investment of five dollars for every one dollar spent (Healthy Workforce 2010, 2001, 5). This is a turnkey issue since, while larger firms self-insure, smaller firms often have more difficulty providing insurance, and rely more heavily on cost-cutting measures to provide coverage to employees.

Healthy People 2010

The Healthy People 2010 Initiative devised by the DHHS aims to increase American life expectancy and eliminate health disparities between different ethnic, gender, regional, and socio-economic populations (Healthy Workforce 2010, 2001, 10). Healthy People 2010 Worksite objectives outline two targets crucial to ensuring progress towards a healthy America:

1. Seventy-five percent of employers will offer comprehensive employee health promotion programs that include health education, program integration into organizational culture, and health screening opportunities. Follow-up intervention and an evaluation are also recommended.
2. Seventy-five percent of employees will participate in employer-sponsored health promotion activities (Healthy Workforce 2010, 2001, 11).

These targets are presented in an HHS publication encouraging firms to establish wellness programs in the workplace by demonstrating their bottom-line benefits. The evidence supporting these recommendations, however, relies heavily on statistically limited quasi-experimental studies. While HHS staff capacity and logistics dictate reliance on existing studies to support the move toward preventative wellness programs in the workplace, the government may solicit more comprehensive studies that better demonstrate the effectiveness of workplace wellness for all populations. Clearly defining research need and channeling HHS funding to interested academics would allow the government to collect the needed evidence without attempting to conduct the work themselves.

THE LITERATURE

Studies are generally highly optimistic about the short and long term cost cutting capacity of Workplace Wellness Programs. (Goetzel, et al 2002, 417). A comprehensive literature review of seventy-two studies published in *The American Journal of Health Promotion*, for example, found that in three to five years, Workplace health promotion activities may expect to realize approximately \$4 in lower health care expenses and \$5 in improved productivity for every dollar spent. (Aldana 2001, 296-320). The federal government uses these reported successes as the foundation for its Healthy Workforce 2010 campaign. The methodologies of these studies, however, are troublesome. As long as statistically rigorous proof of program effectiveness for broad populations is lacking, federal recommendations advising Worksite Wellness Programs may be misguided.

Study Design

A number of studies reviewed for this paper are non-experimental, do not control for selection bias, and are therefore less statistically reliable. These studies compare the outcome of voluntary participants to those choosing to abstain, which cannot account for possible endogenous factors driving both the decision not to participate and higher medical costs. For example, some people may opt out of Workplace Wellness because program offerings such as free gym memberships and fitness flextime are not compelling to them. Perhaps those abstaining would not experience results comparable to those that enroll. People likely to benefit most from the program may be more apt to sign-up, making the impact appear larger than if the program were broadly implemented.

Kenneth Warner, a professor of Public Health at the University of Michigan, argues that selection bias is a serious flaw in Workplace Wellness studies:

...[T]he observational and quasi-experimental studies that dominate this literature confront serious challenges to the validity and reliability of their findings. These include nonrandom selection of the intervention sites, the associated difficulty of finding comparable comparison (nonintervention) sites, the potential for “noise” in the system to obscure true causal relationships, and inability to control developments in the firm or society that may affect outcomes of interest¹ (Warner, et al 1996, 981).

Ron Goetzel (Founding Director of Cornell’s Institute for Health and Productivity Studies) et al. come to similar conclusions concerning evaluation:

Few studies (e.g., Breslow, et al; Burton and Conti; and Knight, et al) use standard research methods in retrospective program evaluation; most studies do not even control for confounding variables such as age and sex (Goetzel, et al 1998, 538).

While econometric methods such as matching and instrumental variable techniques can control for the selection bias introduced by quasi-experimental designs, only one of the studies reviewed for this paper utilized such techniques.

Statistical Solutions

Certain statistical methods may provide a solution to selection biases that plague other study designs. Statistical matching allows researchers to define an individual's propensity to volunteer for a program given parameters associated participation like age, sex, obesity, health history, education, and fitness level. Given these propensities, researchers collect pre- and post-test information on all employees, regardless of program participation. The treatment effect for each participant is then compared with the change in outcome experienced by non-participants with comparable propensity scores.

Still, propensity score matching to control for selection bias comes with its own liabilities. While finding good matches between treated and untreated subjects can be difficult, the use of multiple variables to determine propensity ensures that matches are reliable.

Though quasi-experimental designs are most common in program studies of Workforce Wellness Programs, experimental approaches are also possible. Researchers could randomly place employees or volunteers in treatment and control groups and model outcome differences between groups using a Regression-Discontinuity model. This method controls for selection bias since both control and treatment groups are composed of individuals with equal propensity to participate, allowing random assignment to eliminate the endogenous variables associated with selection.

The problem with Workplace Wellness studies is that they are often quasi-experimental and quasi-experimental studies are generally considered less reliable and less valid than randomized studies. Researchers should make such potential biases clear. Yet, Workplace Wellness literature generally does not fully disclose this information, particularly in case studies examining the program outcomes of large firms such as Johnson & Johnson, Proctor & Gamble, Citibank, and Motorola. Instead, researchers skim over the effect of participant self-selection on conclusions that can be drawn. Meanwhile DHHS uses these studies as evidence that Wellness Programs should be implemented in workplaces across the country without conceding that their results will not necessarily apply to all employees.

What Conclusions CAN be Drawn?

While quasi-experimental designs may not demonstrate how program impacts affect all employees, they do demonstrate how programs impact participating employees. If programs can demonstrate cost savings for self-selected employees, firms stand to benefit from wellness programs, if only for this population. Firms must be careful, however, about which Workplace Wellness models they choose to adopt. If businesses lack employees with a similar propensity to participate as individuals in successful programs, the firm may not experience the same savings. To truly confirm that Worksite Health Promotion Programs are cost-effective tools, rigorous statistical studies must confirm that results will apply to all employees, not just those inclined to participate.

Attribution: Which Program Components Cause What?

Current research has not identified the most effective and cost saving program components. While many large corporate Wellness Programs integrate many levels of care, each varies in the services it includes. Programs generally recognized as best are run by large corporations that have money to invest in broad programs and extensive evaluation. Yet Healthy People 2010 contends that small businesses can enjoy similar savings by implementing scaled back programs with fewer components. Because it is unclear which components drive success, this recommendation may be misleading. A scaled down version containing the *right* components may help cut costs, but since no one is sure exactly which components these are, the guidance may be misplaced.

Further Study

Despite these reservations, the findings of quasi-experimental studies can be applied to voluntary Workplace Wellness participants. To make the findings as helpful to businesses as possible, DHHS should help firms predict how many employees are likely to volunteer for Workplace Wellness Programs, so these firms may weigh particular costs and benefits of initiating such a program.

General Motor's experience in Flint, Michigan demonstrates how useful the ability to predict employee enrollment in wellness programs could be. General Motors (GM) faces exorbitant health care costs in Flint because the health status of its employees, as well as the residents of Flint in general, is poor. Flint residents access inpatient medical services nearly sixty-two percent more than other benchmark communities and a disproportionate number of deaths in Flint are associated with preventable illness like heart disease or diabetes (Healthy Workforce 2010, 2001, 7). While Healthy Workplace 2010 contends that GM could realize significant cost savings by implementing a comprehensive Workplace Wellness Program, GM must first determine whether its employees are likely to participate. The corporation could be confident that a Wellness Program would be effective if its employees had characteristics similar to those of employees who participated and showed improved health in Wellness Programs run by other firms. Systematic study of what characteristics predict participation permits firms to determine whether such programs might be cost effective. If demographic and health survey information can be made available on both participant and non-participant employees, researchers could make the findings of current studies more useful to businesses by helping them predict employee response to such programs given specific characteristics.

RECOMMENDATIONS

The observations outlined in this paper lead to several specific suggestions that HHS should implement to enhance the guidelines and recommendations they offer employers in their 2010 Healthy People Plan.

- HHS should commission statistically rigorous studies of model programs by collecting data on participant and non-participant outcomes, using matching techniques to control for selection bias associated with voluntary participation. Researchers could also use regression discontinuity designs to identify the impact of programs on participants versus non-participants. While both approaches improve the statistical rigor of the findings, they necessitate collecting health data on non-participating employees, which could cause confidentiality concerns.
- HHS should help firms determine whether their employees would be likely to enroll in a Workplace Wellness Program by commissioning quantitative studies to define characteristics common among program participants.
- HHS should commission studies to identify both individual and combinations of wellness program components that reduce cost most. This will permit small businesses that cannot afford comprehensive wellness programs to make educated decisions about which components to choose.
- HHS should be candid about the limitations of using current findings to predict a broader population's response to Workplace Wellness programs, and clarify how current results should be interpreted until more rigorous study has been implemented.

CONCLUSION

In the end, optimism regarding the power of Workplace Wellness Programs is probably more right than wrong. While there is significant expense in designing comprehensive programs and measuring the outcomes, many of these programs are fairly inexpensive and appear to be cost effective. Still, the jury is out and existing research remains inconclusive until selection bias is addressed. Because only the eager are counted, the impacts of wellness programs can be easily oversold. The federal government, as long as it promotes Workplace Wellness Programs, has a responsibility to lobby the research community for more compelling evidence.

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