Worksite Health Promotion

*Online Research*

Bettina Brunner
Through the Extending Service Delivery Project, Meridian Group International and Pathfinder International are able to build and expand on their earlier work as partners in the CATALYST Consortium (2000-2005).

The Extending Service Delivery (ESD) Project, funded by the United States Agency for International Development (USAID) Bureau for Global Health, is designed to address unmet need for family planning (FP) and increase the use of reproductive health and family planning (RH/FP) services at the community level, especially among underserved populations, in order to improve health and socioeconomic development. To accomplish its mission, ESD strengthens global learning and application of best practices; increases access to community-level RH/FP services; and improves capacity for supporting and sustaining RH/FP services. ESD works closely with USAID missions to devise tailored strategies that meet the RH/FP service delivery needs of specific countries. A five-year Leader with Associates Cooperative Agreement, ESD is managed by Pathfinder International in partnership with IntraHealth International, Management Sciences for Health, and Meridian Group International, Inc. Additional technical assistance is provided by Adventist Development and Relief Agency International, the Georgetown University Institute for Reproductive Health, and Save the Children.
# Table of Contents

## EXECUTIVE SUMMARY

- **EXECUTIVE SUMMARY** 4

## WORKSITE HEALTH PROMOTION OVERVIEWS

- **“ARE WORKSITE HEALTH PROMOTION PROGRAMS COST-EFFECTIVE?”** 5
- **“WORKPLACE HEALTH PROMOTION/WELLNESS”** 7
- **SUMMARY OF FINANCIAL IMPACT-LITERATURE REVIEW BY S. ALDANA** 10
- **2000 NATIONAL WORKSITE HEALTH PROMOTION SURVEY STATISTICS** 11
- **US** 11
- **EUROPE** 11
- **ADDITIONAL SOURCES** 12

## COMPANY EXAMPLES AND STUDIES

- **US EXAMPLES** 13
  - JOHNSON & JOHNSON 14
  - BLUE CROSS AND BLUE SHIELD 14
  - GENERAL MOTORS 16
  - TELECOMMUNICATIONS COMPANY 16
  - DALLAS SCHOOL DISTRICT 17
  - US TEXTILE INDUSTRY EXAMPLE 18
  - INTERNATIONAL EXAMPLES 18
  - GERMANY 18
  - WALES 18
  - AFRICA 19
  - TWO EXAMPLES FROM HOLLAND 19
  - ABSTRACT OF MULTI-COUNTRY SURVEY 20

## WOMEN'S HEALTH

- **"WOMEN: WORK AND HEALTH"** 21
- **WO RC - WORKSITE REPRODUCTIVE CARE** 23
- **CANADIAN EXAMPLE OF WORKPLACE HEALTH PROMOTION FOR WOMEN** 25
- **ADDITIONAL SOURCES ON WOMEN & WORKSITE HEALTH PROMOTION** 26

## LATIN AMERICA EXAMPLES

- **“PROMOTING SOCIAL RESPONSIBILITY FOR HEALTH: HEALTH IMPACT ASSESSMENT AND HEALTHY PUBLIC POLICY AT THE COMMUNITY LEVEL”** 26
- **KOPELMAN REFERENCE IN PERU** 27
EXECUTIVE SUMMARY

The following research summary consists of short articles and citations gleaned from Internet research regarding worksite health promotion. Most studies focus on financial aspects of company programs, but absenteeism, productivity, and quality of life are also discussed.

The first section provides articles which are overviews of the benefits of worksite health promotion projects. A few statistics are included in this section, along with several sources that are not available online but may be worth purchasing. The next section lists case studies of several US companies, followed by several international examples.

A few articles on women’s health and worksite health promotion are found in the next section. There is scant mention of family planning and reproductive health programs at the worksite online, even though such programs have been going on internationally for decades. There are several citations listed on women’s health at the worksite that are not available online. These may be worth purchasing.

Here is a summary of the sources listed in the Peru 2021 report and whether they are included in this document:

<table>
<thead>
<tr>
<th>Author</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapman</td>
<td>Several Chapman articles mentioned in this report</td>
</tr>
<tr>
<td>Aldana</td>
<td>Summary of article in this report</td>
</tr>
<tr>
<td>Gemignani</td>
<td>Summary of article in this report</td>
</tr>
<tr>
<td>O’Donnel</td>
<td>This book is available for $76.95</td>
</tr>
<tr>
<td>Health Management Research Ctr.</td>
<td>This book is available for $195</td>
</tr>
<tr>
<td>Goetzel</td>
<td>Abstract of paper in this report</td>
</tr>
<tr>
<td>2000 National Worksite Health Promotion Survey</td>
<td>Summarized in this report</td>
</tr>
<tr>
<td>Mittelmark</td>
<td>English version summarized in this report</td>
</tr>
<tr>
<td>Kopelman</td>
<td>Textbook out of print, available for purchase</td>
</tr>
</tbody>
</table>
“Are Worksite Health Promotion Programs Cost-Effective?”

Studies have repeatedly demonstrated that comprehensive worksite health promotion programs can lower health care and insurance costs, decrease absenteeism, and improve performance and productivity. Of 24 studies published in peer-reviewed journals from 1991-1993, "all but one evidenced positive health outcomes. Of the studies which analyzed cost-effectiveness or cost benefits, every one indicated a positive return." A 1996 review of 10 major studies reports cost/benefit ratios ranging from 1:2.05 to 1:5.96 with two very high return studies reporting ratios of 1:10.1 and 1:19.4. Other benefits demonstrated in studies include improved ability to attract and retain key personnel, greater employee allegiance, and improved public image of the company.

Health Care and Insurance Costs

A number of studies provide evidence of lower medical and insurance costs for participants in health promotion programs, particularly programs involving exercise.

For $30 per person, the Bank of America conducted a health promotion program for retirees using a risk assessment questionnaire, self-care books and other mailed materials. Insurance claims were reduced an average of $164 per year in this group while they increased $15 for the control group. Since they were able to document significant changes in risk behavior, they anticipate greater savings in future years.

Pacific Bell’s FitWorks participants claim $300 less per case for a one year savings of $700,000. Savings for conditions related to a sedentary lifestyle are $722 per case.

Coca Cola reported a reduction in health care claims with an exercise program alone, saving $500 per employee per year for the employees (60%) who joined their HealthWorks fitness program.

Prudential Insurance Company reports that the company's major medical costs dropped from $574 to $312 for each participant in its wellness program.

Decreased Absenteeism

Absenteeism has been shown to be impacted by employer health promotion programs. The evidence indicates a significant reduction in absenteeism and resultant dollars saved as a result of employee fitness programs.

Pacific Bell’s FitWorks program decreased absent days .8 percent to save $2 million in one year. FitWorks members also spent 3.3 days less on short term disability for an additional savings of $4.7 million.

Focusing health promotion efforts on high risk employees can lead to better results. A national manufacturing company reports a decrease of 12.2% in illness days for these employees.

1 http://www.jointventure.org/initiatives/health/96direct/effect.html#decreased
A 2 year study by The DuPont Corporation of the effect of its comprehensive health promotion program on absences among workers reports that blue collar employees at intervention sites had a 14% decline in disability days vs. 5.8% decline for controls. There were a total of 11,726 fewer net disability days.  

Enhanced Performance, Productivity and Morale

A number of employers with health promotion programs report documented improvement in job attitude, work performance, energy level, and/or overall morale among program participants--all critical factors in enhancing productivity.

A Johnson & Johnson study found that employee attitude changes were greater at health promotion intervention sites with significant positive attitude changes noted in the categories of organizational commitment, supervision, working conditions, job competence/security, and pay/benefits.  

In a Canadian government study, the Canada Life Assurance Company experimental group realized a 4% increase in productivity after starting an employee fitness program, compared to the control group. Further, 47% of program participants reported that they felt more alert, had better rapport with their coworkers, and generally enjoyed their work more.  

Swedish investigators found that mental performance was significantly better in physically fit workers than in non-fit workers. Fit workers committed 27% fewer errors on tasks involving concentration and short-term memory, as compared with the performance of non-fit workers.

The Bottom Line

The following sample of worksite health promotion program results have been reported by individual employers:

<table>
<thead>
<tr>
<th></th>
<th>Dollars Saved/Dollars Spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of America (Fries)</td>
<td>$5.96/$1</td>
</tr>
<tr>
<td>PacBell</td>
<td>$3.10/$1</td>
</tr>
<tr>
<td>Wisconsin School District</td>
<td>$4.47/$1</td>
</tr>
<tr>
<td>Insurance Group</td>
<td></td>
</tr>
<tr>
<td>Prudential Insurance</td>
<td>$2.90/$1</td>
</tr>
<tr>
<td>Bank of America (Leigh)</td>
<td>$4.73/$1</td>
</tr>
<tr>
<td>General Mills</td>
<td>$3.50/$1</td>
</tr>
</tbody>
</table>

Summary

There is compelling evidence that a sizable portion of the billions of dollars currently spent by employers on health-related costs, is preventable by means of health promotion programming. Well planned, comprehensive health promotion programs have been shown to be cost-effective, especially when the health promotion programming is matched to the health problems of the specific employee population.
References


3. Fries, James, et.al., “Two-Year Results of a Randomized Controlled Trial of a Health Promotion Program in a Retiree Population,” American Journal of Medicine, May 1993: 455-462.


“Workplace Health Promotion/Wellness”

Worksite health promotion refers to the systematic approach endorsed by an organization designed to enhance the health of the company and its most important asset: its employees. In order to reach the greatest health improvement and cost containment potential, programs may include initiatives based in the worksite as well as in the employee's community, clinic, and home. These efforts may take the shape of awareness education, behavior and lifestyle change, and the creation of supportive environments. The ultimate goal of worksite health promotion is to create a culture that values and meets both individual and organizational needs for health improvement. (1)

The Centers for Disease Control and Prevention estimate that over half of all premature deaths in adults in the United States are from lifestyle-related causes. Less than one-fifth of premature deaths are from problems that are treatable through traditional medical care. (2) It is predicted that health care costs will rise from 14% of the GNP in 1994 to 18% in the year 2000. Employers are instituting disease prevention/health promotion programs in order to hold down these costs. The most popular type of health promotion program is hypertension screening, followed by newsletters on nutrition; programs focusing on healthy lifestyles, smoking cessation, weight loss,

and cancer screening; health club discounts/onsite health club; and prenatal screening. (2) A number of wellness programs are also beginning to add substance abuse prevention strategies.

**Wellness at Work**

In 1987, 65% of U.S. worksites with 50 or more employees had at least one health promotion activity. Today, most large corporations have complete wellness centers, and many small- to mid-size firms offer some type of wellness program. (3) Employers are becoming more involved in promoting the health of their workers. In 1996, 89% of employers had some type of health initiative, up from 64% in 1992. The most common health promotion initiatives were: smokefree workplace (80%), education/training (78%), health risk assessment (76%), and special programs (71%). (4) A study of 8,334 employees who participated in Procter & Gamble’s health promotion program had significantly lower health care costs (29% lower total and 36% lower lifestyle-related costs) when compared with nonparticipants in the third year of the program. Similarly, in the third year of the program, participants had significantly lower inpatient costs, fewer hospital admissions, and fewer hospital days of care compared with nonparticipants. There were no differences noted in the first two years of the program. (5)

**Stress**

It has been shown that 60-90% of all visits to health professionals are for some sort of stress-related disorder. Employers invest in stress reduction programs in order to minimize these costs. Programs that have been shown to give the highest rate of return for the employer include: stress reduction, smoking cessation, and nutrition. (2)

**Successful Wellness Programs**

Individual health promotion programs work only in already healthy organizations. Such programs place all responsibility for health enhancement and risk reduction with the individual, independent of the health norms within the organization. This strategy is not designed for maximum success. In contrast, organizational health promotion programs focus primarily on improving the corporate culture and on enhancing the environment in which people work.

Differences in the effectiveness of wellness programs can be attributed to the degree to which the corporate culture supports a comprehensive productivity/wellness plan. (6) (7) MEDSTAT and the American Productivity and Quality Center identified the following effective strategies:

- Health promotion and productivity programs are aligned with business strategies
- A leader or champion is present for the program
- Team members are enthusiastic about developing and championing the health and productivity program
- Senior management buy into the program, with appropriate resources allocated
- Business operations managers are key members of the team
- Wellness and health promotion staff members are heavily involved, supporting a healthy company culture
- Research and outcomes projects are set up to demonstrate the link between productivity and health
A corporate consensus exists that improving the quality of work life will improve productivity and cost savings will result. (8)

**Employee Use of Wellness Programs**

Utilization of wellness programs has been estimated at 20-40% of employees. (3) Successful incentives to influence participation in worksite wellness programs include: (a) throwing parties; (b) increasing insurance coverage; (c) cash bonuses; and (d) days off for meeting weight and/or exercise goals. (8)

**Cost Impact of Participation**

**Johnson and Johnson** estimated savings of at least $1.9 million through decreased medical costs, reduced sick leave, and increased productivity. (8) A retrospective study of 1,325 city employees insured by the **City of Mesa, Arizona**, revealed a significantly greater decrease in health care costs of employees who participated in a mobile worksite health promotion program, as opposed to employees not participating. Health care costs decreased 16%, resulting in a $3.6 savings for every dollar spent on health promotion services. (9) The return on investment enjoyed by five large companies as a result of their health promotion activities ranged from $2.05 to $6.15. (10)

**References**

Summary of Financial Impact-Literature Review by S. Aldana

**Focus:** Peer reviewed journals (English Language) – 196 studies pared down to 72 studies meeting inclusion criteria for review

**Content Areas:**
- Health risks and health costs
- Health risks and absenteeism
- Health promotion programs and financial outcomes
  - Health care costs
  - Absenteeism

**Scoring Criteria:**
Grade
- A (experimental design)
- B (quasi-experimental – well controlled)
- C (pre-experimental, well-designed, cohort, case-controlled)
- D (trend, correlational, regression designs)
- E (expert opinion, descriptive studies, case studies)

**Health risks and financial outcomes:**
Strongest correlations
- Stress, obesity, multiple risk and increased health care costs and absenteeism

**Health promotion program on financial outcomes:**
Health care costs
- 32 evaluation studies examined – Grades: A (4), B (11), other (17)
- Average duration of intervention: 3.25 years
- Positive impact: 28 studies
- No impact: 4 studies (none with randomized designs)
- Average ROI: 3.48 to 1.00 (7 studies)

Absence costs:
- 14 evaluation studies examined – Grades: A (0), B (11), other (3)
- Positive impact: 14 studies
- Average ROI: 5.82 to 1.00 (3 studies)

**2000 National Worksite Health Promotion Survey**

1993.04.14: Survey -- Worksite Health Promotion

Office of Disease Prevention and Health Promotion
Contacts: Lisa Kanner (202) 205-9370
April 14, 1993

---

The results of the 1992 National Survey of Worksite Health Promotion Activities were released at a meeting of the National Coordinating Committee on Worksite Health Promotion in Washington, D.C. This coalition of national employer and employee groups has been convened by federal public health officials to address prevention efforts in the private sector.

Programs on the rise include those targeting physical fitness, nutrition and weight control, stress management, back care, and blood pressure and cholesterol reduction. In addition, the percentage of worksites with formal policies that prohibit or severely restrict smoking at the workplace more than doubled --increasing from 27 to 59 percent.

Improved employee health, improved employee morale and reduced health insurance costs are the benefits cited most frequently by respondents at worksites with health promotion activities. The survey showed that employers encourage participation in worksite health promotion activities in several ways: 72 percent allow employees to use "company time" to participate in health promotion activities; 12 percent adjust health insurance premiums based on smoking status; 8 percent provide annual fixed reimbursements for health promotion expenses; and several offer subsidized discounts or reduced fees for participation in community-based programs such as smoking cessation and exercise classes. Worksites with 750 or more employees, and companies that are self-insured, are more likely to offer health promotion activities. There was little or no variation reported in different parts of the country.

These results are based on responses from 1,507 private worksites that employed 50 or more individuals and spanned six industry categories. The data were collected by telephone in the winter of 1992.

(Copies of a summary report of the results of this survey may be obtained through the Government Printing Office at (202) 783-3238.)

Statistics

US5

Employers are becoming more involved in promoting the health of their workers. In 1996, 89% of employers had some type of health initiative, up from 64% in 1992. The most common health promotion initiatives were: smoke-free Workplace (80%), education/training (78%), health risk assessment (76%), and special programs (71%). (4)

Europe6

Estimates of the Aggregate Economic Cost of Occupational Injury and Disease for Selected European Countries

---

5 http://workplace.samhsa.gov/WPResearch/healthwelfare/WPHealthpromo.html
<table>
<thead>
<tr>
<th>Country</th>
<th>Base year</th>
<th>Cost as % of GDP/NI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>1995/96</td>
<td>1.2-1.4</td>
</tr>
<tr>
<td>Denmark</td>
<td>1990</td>
<td>2.5</td>
</tr>
<tr>
<td>Finland</td>
<td>1992</td>
<td>3.6</td>
</tr>
<tr>
<td>Norway</td>
<td>1990</td>
<td>10.1</td>
</tr>
<tr>
<td>Sweden</td>
<td>1990</td>
<td>5.1</td>
</tr>
<tr>
<td>Denmark</td>
<td>1992</td>
<td>2.7</td>
</tr>
<tr>
<td>Norway</td>
<td>1990</td>
<td>5.6-6.2</td>
</tr>
<tr>
<td>Australia</td>
<td>1992/93</td>
<td>3.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1995</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Source: Beatson and Coleman (1997)

**Additional Sources**

The following journal articles are available for purchase through the cited journals and are also available at the National Institute of Health’s National Medical Library in Bethesda:


Pelletier KR; ROI Research and Worksite Health Promotion. American Journal of Health Promotion 1999;14 (1):31-43  (see PowerPoint presentation)

An excellent source of documents regarding workplace & health programs is found at the Health Promotion Journal Online. Books and articles are available for purchase. It has countless examples of companies with health promotion programs.


The following link of the same periodical has several international examples of worksite health promotion: [http://www.healthpromotionjournal.com/publications/global/1999-03.htm](http://www.healthpromotionjournal.com/publications/global/1999-03.htm)

[7](http://www.healthpromotionjournal.com/publications/Journal%20Collection_5.htm)
Also available for purchase are the following two publications:

Title: Health Promotion and Workplace Productivity  
Author: Karch, Bob  
Source: Global Perspectives  
(Keego Harbor, Mich) 4(2), June/July 2001  
SIRCExpress Article No.: S-784130 (PDF format)  
Click to order:  
https://secure.sportquest.com/express/item-detail.cfm?ID=S-784130

Title: Worksite Health Promotion: Benefits and Opportunities  
Author: Hadden, Courtney et al.  
Source: Fitness Management  
(Los Angeles, CA.) 17(7), June 2001  
SIRCExpress Article No: S-781619 (PDF format)  
Click to order:  
https://secure.sportquest.com/express/item-detail.cfm?ID=S-781619

COMPANY EXAMPLES AND SURVEYS

US Examples

Proctor & Gamble

Total and lifestyle-related medical care costs for employees of a major corporation participating in a worksite health promotion (WHP) program over a three-year period were compared with the costs for non-participants in a cross-sectional study. The study population consisted of 8,334 active employees based in the Cincinnati headquarters of The Procter & Gamble Company. Adjusting for age and gender, participants (n = 3,993) had significantly lower health care costs (29% lower total and 36% lower lifestyle-related costs) when compared with non-participants (n = 4,341) in the third year of the program. Similarly, in the third year of the program, participants had significantly lower inpatient costs, fewer hospital admissions, and fewer hospital days of care when compared with non-participants. No significant differences in costs were found between participants and non-participants during the first two years of the WHP program. Conclusions drawn from this study are that long-term participation in a WHP that includes high-risk screening and intensive one-on-one counseling results in lower total and lifestyle-related health care costs, as well as lower utilization of hospital services.

Correspondence:  
Ron Z. Goetzel, PhD  
The MEDSTAT Group  
4401 Connecticut Avenue  
Suite 400  
Washington, DC 20008  
UCC: 1076-2752/98/4004-0341$3.00/0

8 Ron A. Goetzel PhD, Bert H. Jacobson EdD, Steven G. Aldana PhD, Kris Vardell MS, Leslie Yee MD MPH, JOEM 40:4 (April 1998), pp 341-346
Johnson & Johnson

The long-term impact of corporate health and wellness programs is largely unknown, because most evaluations focus on impact in just 1 or 2 years after program initiation. This project estimated the longer-term impact of the Johnson & Johnson Health & Wellness Program on medical care utilization and expenditures. Employees were followed for up to 5 years before and 4 years after Program implementation. Fixed-effects regression models were used to control for measurable and unmeasurable factors that may influence utilization and expenditures. Results indicated a large reduction in medical care expenditures (approximately $224.66 per employee per year) over the 4-year Program period. These benefits came from reduced inpatient use, fewer mental health visits, and fewer outpatient visits compared with the baseline period. Most benefits occurred in years 3 and 4 after Program initiation. We conclude that programs designed to better integrate occupational health, disability, wellness, and medical benefits may have substantial health and economic benefits in later years.

Another J & J Study

Employees of Johnson & Johnson Companies
- Experimental group got Live For Life program at 4 sites
- Control group did not get program at 5 sites
- Absenteeism was primary dependent variable
- Time Frame 1979-1981
- Sample Size: N=1,406, Comparison Group: N=487

Outcome Measures:
- Self reported sick leave hours
- Payroll based sick leave hours
- Tobacco use status

Results:
- Comparison of self-reported sick leave with payroll based reporting showed that self-report was usually under reporting by 6.5% to 14.1% when compared with payroll based sick leave
- Sick leave reductions are likely to be greater in hourly employees than salaried employees
- Sick leave hours were significantly higher for smokers

Blue Cross and Blue Shield

---

9 Ronald J.Ozminkowski, PhD, Davina Ling, PhD, Ron Z. Goetzel, PhD, Jennifer A. Bruno. BS, Kathleen R. Rutter, BA, Fikry Isaac, MD, MPH, and Saran Wang, PhD, JOEM 44:1 pp 21-29 (http://www.acoem.org/journal/results.asp?NEWS_ISSUE_ID=988)
This study presents the findings from three similar health promotion research projects conducted through the Health Services Foundation, which is the research affiliate of the National Blue Cross and Blue Shield Association, that examined traditional worksite health promotion and its impact on sick leave absenteeism. The study samples were primarily female, in their 30s, non-minority, white collar workers. All three studies include comprehensive programs addressing multiple risk reduction behaviors including the use of health risk appraisals (HRAs), a counseling session, health screening and educational interventions. The interventions were conducted for 2 years in Michigan (1980-1981), 1 year in Ohio (1985), and 8 years in Indiana (1978-1985). In Michigan and Indiana the programs were combined for analysis. In Ohio each cohort that was involved in an individual program component was examined separately. In Michigan a cohort analysis design was used. Group "A" received an HRA, screening, counseling, and the intervention programs; Group "B" received the HRA, screening and counseling; Group "C" received only the HRA and Group "D" received no treatment and completed a health and attitude survey. In Ohio each program component was examined by itself and included: physical conditioning, nutrition, weight control and recognition of stress. In Indiana used a cohort analysis and non-participants were defined as those who never had a min-exam, a second group include those who completed a min-exam but received no intervention programming and a third group that completed the exam and received the intervention programming. All three groups used ANCOVA and t-Tests to examine the significance of results. Time Frame 1978-1985. Sample Size: Michigan N=1,449; Ohio N=1,448; Indiana N=569, Comparison Groups: Michigan: Participants as controls Ohio: Controls for each intervention Indiana: N=177.

Outcome Measures:

Michigan: aggregate absenteeism including illness hours, clinic hours, tardy hours and other absence hours
Ohio: short term absenteeism, long term absenteeism and total absenteeism; measure was average monthly time lost over 1 year
Indiana: time lost due to illness absence, measurement was average yearly hours of absenteeism

Results:

Michigan: Group A consistently showed a statistically significant (P<.05) difference from the other three groups; Group A's absenteeism rate declined 30% over the three years
Ohio: An inverse relationship between intensity of exercise and absenteeism was found that the other components examined did not produce statistically significant changes in sick leave. They also found that to be sustained any positive decline in absenteeism must require continued programming and motivation for exercise compliance
Indiana: They found a statistically significant difference (P<.05) between the three group averages for the 8 years; they also found that participant groups averaged 15.3% lower average yearly hours of absenteeism than the non-participants; however, a very small difference was noted between the two intervention groups.
General Motors\textsuperscript{12}

Four General Motors automobile manufacturing plants:

- Three randomly assigned matched plants with one plant as control
- Each of the four locations had a progressively more intense program model
- Joint program between General Motors and United Auto Workers Union
- Predominant male populations (i.e., 83\% to 89\%), white (i.e., 67\% to 76\%) with an average age of 39 to 43 years
- Population was rescreened to determine impact
- Time Frame 1985-1988
- Sample Size N=5,826, Comparison Group: N=3,993

Outcome Measures:

- Relapse for one of five risk factors reviewed
- Program cost by each program model
- Extends of risk reduction by three intervention models
- Control used to derive experimental effects

Results:

The addition of follow-up counseling and menu based programming increased program effectiveness nine to ten times

- Average Annual Program Costs (average annual cost per employee): Site 1 Control $2.97; Site 2 Health Education $17.68; Site 3 Health Education and follow-up $30.96; Site 4 Plus Plant Organization $38.31
- Level of High Risk Reduction (reflects bringing the high risk into low risk categories): Site 1 Control 34\%; Site 2 Health Education 35\%; Site 3 Health Education and follow-up 44\%; Site 4 Plus Plant Organization 46\%
- Level of Moderate Risk Reduction: Site 1 Control 40\%; Site 2 Health Education 41\%; Site 3 Health Education and follow-up 51\%; Site 4 Plus Plant Organization 56\%

Telecommunications Company\textsuperscript{13}

This study examined the impact of a worksite health promotion program on short-term disability (STD) days in a large telecommunications company. The evaluation used a quasi-experimental, multiple time-series design with between-group comparison of workdays lost due to STD to determine impact. The study period was 3 years and included 1628 employees on STD leave. Self-selected program participants were compared with non-participants on net days lost at three assessment points: the year before the launch of the program, and each of 2 years post-launch. A comprehensive health promotion program was developed to reduce health care costs, improve


\textsuperscript{13} Seth Serxner, PhD, MPH, Daniel Gold, PhD, David Anderson, PhD, and David Williams, EdD, JOEM 43:1 (January 2001), pp 25-29
employee satisfaction, and enhance the employer's image. Key features of the program included reimbursement for employees participating in the Health Risk Assessment and in wellness or fitness activities. Other features included occupational health services, targeted interventions for high-risk employees, self-care materials, and a nurse advice line. Results revealed no significant differences at baseline between participants and non-participants for net days lost while on STD leave. At the post-program launch, non-participants' net days lost significantly increased from 33.2 to 38.1 when controlled for age, gender, job type, tenure, and STD category, whereas the participant group average net days lost decreased from 29.2 to 27.8. After adjusting for baseline differences, we found a 6-day difference between groups, which represented a 20% program impact. This study found that participation in a health promotion reimbursement program had a significant impact on average net days lost for employee STD absence. These findings represented potential savings in excess of $1,371,600 over a 2-year period. Future program evaluation efforts will address the impact on medical care costs related to program participation. Correspondence: Dr Seth Serxner, StayWell Company, 1100 Grundy Lane, San Bruno, CA 94066-300 e-mail seth.serxner@staywell.com

**Dallas School District**

Selected employees of the Dallas School District

- 200+ locations
- 31.6% of employees enrolled in program
- Multiple 13-14 week cycles involving pre-testing, intervention and maintenance cycles with lagged implementation
- Weekly exercise classes held during maintenance and follow-up period
- Consultations offered on smoking, weight loss, nutrition and stress reduction
- Time Frame 1982-1983
- Sample Size: N=3,846, Comparison Group: N=8,290 (Age, sex and racial composition comparable except participant group had fewer blacks than non-participant group.)

Outcome Measures:

- Average annual days of sick leave absenteeism
- Exercise participation levels
- General well being scale results
- Body weight
- Changes in treadmill time
- Blood pressure

Results:

- Participants went from 5% less absenteeism than the non-participants prior to the program to 20% less absenteeism after the program
- The non-participants experienced a 5% increase in sick leave days during the study period

---

14 Chapman LS. Proof Positive: Analysis of the Cost-Effectiveness of Worksite Wellness. Summex Corporation P.O. Box 55056, Seattle, WA 98155. Highly recommended book with quantitative comparative evaluations of the 30 best studies identified by formal meta-analytic search.
1.25 days per person per year less absenteeism among the participant group
Multiple regression analysis shows a positive correlation between increased levels of
fitness as demonstrated by increased treadmill times and reduced levels of sick leave
absenteeism

**US Textile Industry Example**\(^{15}\)

Regulating Cotton Dust Exposure: Costs and Benefits to the US Textile Industry
In 1978 the US Occupational Safety and Health Administration (OSHA) promulgated cotton
dust exposure limits for workers in the textile industry. The industry protested the regulation,
claiming that it was not economically feasible. OSHA estimated annual compliance costs at
$280M (1982), based on the expectation that the standard would be met by retrofitting existing
equipment with better ventilation and filtration devices and tighter enclosure seals. Instead, the
industry, spurred by foreign competition as well as regulation, refurbished or replaced its
productive stock. The new technologies simultaneously achieved faster speeds, better use of
space, higher productivity—and superior dust control that met the OSHA standard. In the end,
annual compliance costs were only $83M (1982). (Source: U.S. Congress, Office of Technology
Assessment, 1995)

**International Examples**

**Germany**\(^{16}\)

According to calculations made by the Munich Institute for Economic Research IFO, loss of
production due to illness amounted to 4.2% of the GDP in 2000 in Germany alone; in monetary
terms, the equivalent of 85 billion €, and the revenue lost to businesses resulting from employee
burnout, mobbing, or lack of motivation is not included in this calculation. According to
estimates from the European Agency for Safety and Health at Work in Bilbao, the cost of
workplace-related illnesses in Europe amounts from 2.6% to 3.8% of the GDP. 600 million
working days are lost per year in the European Union from work-related absenteeism.

**Wales**\(^{17}\)

**Anglesey Aluminium Ltd** is a large organisation with 553 employees based at
Holyhead. The business has invested heavily in training and development in support of a
comprehensive occupational health and safety programme. This company operates several
different shift patterns, designed to meet the needs of the business. The business benefits have
been considerable, reducing accident rates, the staff turnover is minimal, less than 1%, which is
very low for this type of industry. As a result employees are loyal and motivated. Bridgend
County Borough Council introduced a health promotion programme for its work force and state
that they have achieved a reduction in sickness absence of around 5% over four years. Other
benefits have included an improvement in performance and increased competitive advantage; a
reduction in ill-health and injuries; improved staff moral and corporate communication; and
sound industrial relations. safeguarding the well being of its staff and workplace health promotion

\(^{15}\) ibid, p. 21
\(^{16}\) From European Network for Workplace Health Promotion
\(^{17}\) http://www.hpw.wales.gov.uk/English/topics/workplace/chsguide_e.pdf
is an integral part of Agency life. Staff enjoy excellent working conditions within a supportive environment. As a result, morale is high which means that the Agency consistently delivers its demanding objectives.

**Africa**

Despite the absence of direct OSH cost studies, we can shed light on the economic consequences of occupational injury and disease by comparing them to those of other causes that have been given more scrutiny. The case of malaria is instructive. According to Murray and Lopez (1996), malaria and occupational exposure account for approximately the same share of developing country disability-adjusted life years (DALY’s) lost, 2.6% and 2.5% respectively. (As malaria diagnosis has improved, it is more likely that occupational factors are relatively undercounted.) Because Africa is home to the great majority of malaria cases, researchers have attempted to estimate the economic costs of malaria in that region. The most prominent figure cited is that the combined effect of all the costs of malaria depresses the rate of economic growth in sub-Saharan Africa by 1% per year—a remarkable impact.13 (Gallup and Sachs, 1998; McNeil, 2000)

In Africa, the level of malaria DALY’s per capita is approximately five times the level for low-income countries as a whole. If we assume that each DALY imposes the same economic cost, whatever its source, this gives us the result that occupational injury and disease deprive the developing world of .2% of its economic growth each year. (Note that this is a dynamic cost; it would presumably be in addition to the static cost corresponding to the Leigh et al. type of calculation.) While not as dramatic as the malaria figure for sub-Saharan Africa, this is still a noticeable growth effect, especially in light of its probable underestimation.14 Nevertheless, despite the evidence indicating that occupational exposure is one of the principle sources of developing country DALY’s, a recent exhaustive review of the literature on health and development made no mention of it. (Strauss and Thomas, 1998)

**Two Examples from Holland**

**Cigarette factory**

Background: A Dutch cigarette factory with 400 employees found itself in a position of decline with regard to market-shares as well as profitability. Internally the organisation was hampered by high rates of absenteeism and inefficiency. The organisation decided to address the problem, forming a steering group with employee participation, but with management responsible. In order to assess the problem, interviews as well as a questionnaire study were undertaken. This analysis revealed that workloads in general were very high, with some groups of employees particularly at risk.

Intervention: The intervention was addressed at both an organisational as well as an individual level. The organisational intervention focused on ergonomics, a reduction of noise, as well as job-redesign with the introduction of semiautonomous teams. On the individual level, management

---

18 ibid, p. 30
were trained in absenteeism management, including improved record-keeping and improved rehabilitation initiatives in connection with absenteeism.

Results: After running the intervention for 10 years the company reported a 10% reduction in absence, decreased rehabilitation costs due to disability, a better social climate with employees more motivated and committed, and an improved quality of products. Overall a 7% increase in productivity was noted. According to the authors, a cost-benefit-analysis showed that the benefits outweighed the cost four year into the projects, with increasing gains thereafter.

Pharmaceutical company

At the time of intervention the company in question employed approximately 3,200 employees. Strong external pressure for change had forced the company to make budgetary savings by for instance putting a halt to recruitment. Combined with a change in leadership styles resulting from a change in senior management positions, this had left a large part of to the workforce insecure with regard to the future. A staff survey had showed that seven in ten employees would welcome stress intervention initiatives. Medical reports of extremely high stress among part of the workforce, with some forced to leave for the same reason, motivated the organisation into action. A stress survey was undertaken which incorporated sections on work-related stressors and psycho-somatic complaints. The survey showed that a third of employees suffered alarmingly high stress levels with psychosomatic reactions such as headaches being widespread. Groups most at risk were identified.

Intervention: On an organisational level the intervention focused on ergonomics. The individual focused interventions included a stress management course for those most at risk, training of management in identification of stress symptoms, ergonomics and people management skills.

Results: Absenteeism was found to have been reduced by less than 1%. However, even with such a modest reduction in absenteeism, the programme contributed a net gain of approximately 600,000 ECU. The authors suggest that the programme succeeded in raising the profile of occupational stress and improving utilisation of the occupational health service. Further benefits were indicated by the high number of enrolments to the stress management courses as well as the positive evaluation reports of course participants. Another outcome, which also carries a monetary gain, was the positive publicity the project enjoyed at the time.

Abstract of Multi-Country Survey

We constructed a simple, flexible procedure that facilitates the pre-assessment of feasibility of workplace health promotion (WHP) programmes. It evaluates cancer hazards, workers’ need for hazard reduction, acceptability of WHP, and social context. It was tested and applied in 16 workplace communities and among 1085 employees in industry, construction, transport, services, teaching and municipal works in Costa Rica, Finland, Germany, Spain and Sweden. Social context is inseparable from WHP. It covers workers’ organizations and representatives, management, safety committees, occupational health services, health and safety enforcement

---

20 Päivi Peltomäki1, Mauri Johansson2, Wolfgang Ahrens3, Maria Sala4, Catharina Wesseling5, Freddy Brenes6, Carme Font7, Kaj Husman1, Gemma Janer8, Tarja Kallas-Tarpila1, Manolis Kogevinas8, Minna Loponen1, Maria Dolors Solé9, Jürgen Tempel10, Kaisa Vasama-Neuvonen1 and Timo Partanen5, http://heapro.oupjournals.org/cgi/content/full/18/2/115
agencies, general health services, non-government organizations, insurance systems, academic and other institutions, regulatory stipulations pertaining WHP, and material resources. Priorities, risk definitions, attitudes, hazard profiles, motivations and assessment methods were highly contextual. Management preferred passive interventions, helping cover expert costs, participating in planning and granting time. Trade unions, workers’ representatives, safety committees and occupational health services appeared to be important operational partners. Occupational health services may however be loaded with curative and screening functions or be non-existent. We advocate participatory, multifaceted WHP based on the needs and empowerment of the workers themselves, integrating occupational and lifestyle hazards. Workforce in irregular and shift work, in agriculture, in small enterprises, in the informal sector, and immigrant, seasonal and temporary workers represent groups in need of particular strategies such as community health promotion. In a more general framework, social context itself may become a target for intervention.

Address for correspondence: Päivi Peltomäki, Finnish Institute of Occupational Health (FIOH), Department of Epidemiology and Biostatistics, Topeliuksenkatu 41 A a, FIN-00250 Helsinki, Finland, E-mail: paivi.peltomaki@ttl.fi

WOMEN’S HEALTH

"Women: Work and Health"21

The Department of Health and Human Services today announced the release of the first comprehensive report on the health and well-being of America's working women. "Women: Work and Health" profiles key statistics for the more than 60 million women who are part of the American labor force, using data from the Departments of Health and Human Services, Labor, and Commerce.

"For the first time from any source, this report compiles the wide-ranging national data that are the most critical for assessing the complex relationship between employment and women's health in our society," said HHS Secretary Donna E. Shalala. "At a time when more women are in the U.S. labor force than ever before, these statistics provide an important baseline for learning more about the needs of working women and opportunities to improve their health."

Since 1950 the labor force participation rate has increased at least 170 percent, so that today more than one-half of adult women work. During that period, women as a proportion of the labor force doubled from 1 in 4 to nearly one-half of today's workers. This report describes the sociodemographics, household characteristics, and health of women according to workforce status and job conditions, with comparative data for men.

Highlights of the report

Overall, women die from work-related injuries at a substantially lower rate than men. Industries with highest fatality rates are the same for both men and women: mining, agriculture, construction, and transportation. The number of workplace homicides is higher among men than women, but proportionately they are greater among women, accounting for almost half of women's job-related fatalities.

For both women and men, job-related injuries most frequently affected the back. Among the 9 million working women who had back pain, about one-third attributed their back pain to work-related activities or injuries. More than half of the women employed in service or blue collar occupations and almost half of the working black women attributed their back pain to work.

Regarding health education in the workplace

Prenatal education was provided by 9 percent of employers in 1992. However, among the largest worksites with 750 employees and over, 40 percent of these worksites offered prenatal education. Weight control activities and education were provided by 24 percent in 1992.

With regard to cancer, 23 percent of all worksites offered cancer education. Although the proportion of women having ever had a pap test was about 90 percent, regardless of employment status, currently employed women were more likely to have had a recent pap test--within the past 3 years--(87 percent) than women not in the labor force (73 percent).

The employer is an important source of private health insurance; 73 percent of working women and 71 percent of working men cited the employer as the source of insurance, whereas only 46 percent of women not in the labor force and 47 percent of men not in the labor force cited the employer of a family member as the source of private health insurance. Three-quarters of the working women had the private insurance paid in full or in part by the employer or union.

The report includes chapters on: workplace characteristics; health effects attributed to work--such as work injuries, illnesses, and fatalities; health status as it affects work; knowledge of health risks and behaviors, and worksite health promotion programs, and health-related employee benefits.

The report was produced by the National Center for Health Statistics (NCHS) and the National Institute for Occupational Safety and Health (NIOSH) in the Centers for Disease Control and Prevention (CDC) in HHS, and the Women's Bureau in the U.S. Department of Labor, with support from the CDC Office of Women's Health, Centers for Disease Control and Prevention, HHS. It also includes data from the U.S. Bureau of the Census.

"While the report does not present information on causal factors which could explain the patterns in the data, it does provide a comprehensive, time-saving resource for additional studies to explain the patterns in such specific areas as workplace safety and health, health insurance, health promotion, and other key issues," said NCHS Director Edward J. Sondik, Ph.D.

"This report provides essential data for government, labor, industry, and the health community as we work together to develop forward-looking research for the coming decade on the factors that put women uniquely at risk for injury and illness on the job," said NIOSH Director Linda Rosenstock, M.D., M.P.H.
WoRC - Worksite Reproductive Care

WoRC represents the Wisconsin Family Planning and Reproductive Health Association’s (WFPRHA) program of “Worksite Reproductive Care” (WoRC). We believe that businesses, by implementing the WoRC program, can enhance their benefits package for employees and improve their bottom line. If families lack access to the reproductive health care they need or want, one way to reach them is through employers. Most women and men of reproductive age are in the workforce. The health care system in this country is largely delivered through employers. WoRC is a program designed specifically for improving access to reproductive health care.

As a family planning association, our objective is to promote programs that will help to improve the health of your employees, improve the health of their children, and give families greater freedom in their lives. The intent of the WoRC program is to:

- Save your health insurance premium dollars
- Reduce absenteeism in your workforce
- Improve retention rates of existing employees
- Reduce costs of family and medical leave
- Improve the health of your employees and their families and lower your personnel expenses

WFPRHA supports employers who are concerned with the costs (both direct and indirect) of unintended pregnancy. We believe that providing coverage for contraceptive benefits will reduce the rate of unintended pregnancy.

What are the costs associated with unintended pregnancy?

Higher medical and health costs due to:

- a higher risk of pregnancy complications
- a lower average birth weight
- reduced chances of receiving prenatal care
- additional risks associated with adolescent pregnancy health risks
- additional risks associated with maternal mortality and morbidity rates being higher in women over 40
- a lower rate of pre-conceptive care (smoking, diet, pre-pregnancy planning, risk assessment and health planning)

Higher social and economic costs associated with: (including risk factors of adolescent childbearing)

- a lower likelihood of high school completion
- lower graduation rates of parent and child

---

22 http://www.worcadvantage.org/Plan_Overview.htm
reduced likelihood of attending or graduating from college (parent and child)
a greater probability of living in poverty
an increased chance of requiring public economic support
a greater likelihood of being a single parent
higher divorce rates among couples who marry following an unintended pregnancy
higher divorce rates among married couples who experience unintended pregnancy
increased difficulties keeping a job (parent and child)
the child is more likely to have encounters with the criminal justice system
lost productivity and capacity to contribute to the workforce
absence from the workforce
employment issues associated with child care

Why is unintended pregnancy my problem?

Today there’s an employee shortage. It’s a struggle to retain productive employees. The unintended pregnancy rate in the United States is estimated to be 50%. Here are some of the immediate impacts of unintended pregnancy on the workforce:

- a reduction in the number of employees on-the-job
- an increase in health care costs
- higher levels of turnover, replacement, substitution
- lost productivity due to absenteeism, rescheduling, retraining, rehiring, reposting . . .
- higher health insurance premiums
- higher federal and state Medicaid expenditures.

"Unintended pregnancy" - What about "intended pregnancies?"

Family planning improves women’s health and the health of their families and reduces your costs. Women, who have access to high quality confidential reproductive health care, including contraceptive benefits, tend to plan their pregnancies. Their baby is healthier, the birth is less likely to be complicated and the family is ready to provide for the child. From the employer’s point-of-view, the family can think about careers, plan for child care arrangements, reach educational goals . . . the kinds of things that make for more productive employees and a more efficient work force.

What can you do about it?

In your day-to-day business, though, there are some things you can do immediately:

Review your own coverage: find out if you’re providing contraceptive benefits right now. Include subsidized family planning providers in your existing plan: If you are providing contraceptive or other reproductive health benefits, ask your insurance plan to include local non-profit family planning providers in your coverage. You’ll get high quality, accessible services for less!
Expand coverage to provide and promote free contraceptive coverage: Consider expanding contraceptive benefits coverage to more part-time employees . . . You can do it because it’s the right thing to do and it improves your efficiency.

Implement a Worksite Reproductive Care (WoRC) agreement: WFPRHA and your local Family Planning and Reproductive Health Association member would like to work with you to provide your employees with the most comprehensive and affordable reproductive health care package possible.

**Canadian Example of Workplace Health Promotion for Women**

Few employers recognize how simple and inexpensive changes in health policy can be. For example, a sign designating preferred parking for pregnant employees is almost cost free. It conveys a corporate value that the organization cares about the employees and their families. In reviews of the literature, there is evidence of harmful and beneficial effects of work on pregnancy outcome (Gabbe & Main, 1988; Joffe, 1986; Kramer, 1987). It is probable that certain types of work increase the risk of low birthweight from intrauterine growth restriction (IUGR) and preterm birth, mostly in developed countries. The greatest risk lies with occupations that involve prolonged standing and exertion, such as sales, service, medicine, nursing, social service and labour jobs. Also implicated are jobs that require more than 40 hours of work per week or require commuting more than an hour per day (Chenier, 1982). Adverse effects have been attributed to a presumed decrease in uterine and gastrointestinal blood flow which results in reduced nutrient absorption and fetal growth and associated psychological stress (Gabbe & Main, 1988; Kramer, 1987).

Jobs that require much physical effort, standing for prolonged periods, heavy lifting, long work weeks and working after 28 weeks of gestation may affect birthweight, especially when combined with mental stress, working on an industrial machine (Mamelle, Laumon & Lazar, 1984; Mamelle & Munoz, 1987; McDonald et al., 1988; Saurel-Cubizolles & Kaminski, 1987) or heavy work at home (Saurel-Cubizolles et al., 1985).

Studieds that report a relationship between work and low birthweight in various populations conclude:

- Non-black, married women may face a risk of having low birthweight babies if they work 40 or more hours each week (Peoples-Sheps, Siegel, Suchindran, Origasa & Barakat, 1991).
- There is a significant association between prolonged standing on the job for more than three hours and preterm birth, even when adjustments are made for confounding factors (Teitelman, Welch, Hellenbrand & Bracken, 1990). Women working in jobs characterized by high levels of physical exertion experience a greatly increased risk of giving birth to a preterm, low birthweight infant (Homer, Beresford, James, Siegel & Wilcox, 1990).
- Heavy lifting and shift work can retard fetal growth and increase the risk of preterm birth (Armstrong, Nolin & McDonald, 1989).
- Work that involves strenuous activity, prolonged working weeks and shift work may be associated with modest increases in low birthweight or prematurity (Culpepper & Thompson, 1990).
- Certain jobs involve exposure to other hazards, such as chemical solvents, ionizing radiation and machines which vibrate (Chenier, 1982). Safe exposure levels have not been adequately determined.

---

Additional Sources on Women & Worksite Health Promotion

These sources may be worth paying for:


Collins J. Health care of women in the workplace. Health Care Women Int 1990;11(1):21-32 (available at NIH, but being bound until Aug. 4)

LATIN AMERICA EXAMPLES

“Promoting social responsibility for health: health impact assessment and healthy public policy at the community level” 24

Maurice B. Mittelmark

Address for correspondence: Address for Professor Maurice B. Mittelmark Christiesgt. 13 5015 Bergen Norway

Summary

The 1997 Jakarta Declaration on Health Promotion into the 21st Century called for new responses to address the emerging threats to health. The declaration placed a high priority on promoting social responsibility for health, and it identified equity-focused health impact assessment as a high priority for action. This theme was among the foci at the 2000 Fifth Global Conference on Health Promotion held in Mexico. This paper, which is an abbreviation of a technical report prepared for the Mexico conference, advances arguments for focusing on health impact assessment at the local level. Health impact assessment identifies negative health impacts that call for policy responses, and identifies and encourages practices and policies that promote health. Health impact assessment may be highly technical and require sophisticated technology and expertise. But it can also be a simple, highly practical process, accessible to ordinary people, and one that helps a community come to grips with local circumstances that need changing for better health. To illustrate the possibilities, this paper presents a case study, the People Assessing Their Health (PATH) project from Eastern Nova Scotia, Canada. It places ordinary citizens, rather than

24 Full text of this article is available for purchase through Health Professionals Online journals at http://heapro.oupjournals.org/cgi/content/abstract/16/3/269
community elites, at the very heart of local decision-making. Evidence from PATH demonstrates that low technology health impact assessment, done by and for local people, can shift thinking beyond the illness problems of individuals. It can bring into consideration, instead, how programmes and policies support or weaken community health, and illuminate a community's capacity to improve local circumstances for better health. This stands in contrast to evidence that highly technological approaches to community-level health impact assessment can be self-defeating. Further development of simple, people-centred, low technology approaches to health impact assessment at the local level is called for.

**Kopelman Reference in Peru 2021**


This book is out of print, but is available online for $1.99 to $18.99 at [http://isbn.nu/0070353298/price/2.html](http://isbn.nu/0070353298/price/2.html).