

Implementation and Outcomes of a Comprehensive Worksite Health Promotion Program

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ABSTRACT

Background: This paper reports on the implementation and results of a three-year comprehensive worksite health promotion program called *Take care of your health!*, delivered at a single branch of a large financial organization with 656 employees at the beginning of the implementation period and 905 at the end. The program included six educational modules delivered over a three-year period. A global health profile was part of the first and last modules. The decision to implement the program coincided with an overall program of organizational renewal.

Methods: The data for this evaluation come from four sources: analysis of changes in employee health profiles between the first and last program sessions (n=270); questionnaires completed by participating employees at the end of the program (n=169); organizational data on employee absenteeism and turnover; and qualitative interviews with company managers (n=9).

Results: Employee participation rates in the six modules varied between 39% and 76%. The assessment of health profile changes showed a significant increase in the Global Health Score. Participants were significantly more likely to report more frequent physical activity and better nutritional practices. The proportion of smokers among participants was significantly reduced (p=0.0147). Also reduced significantly between the two measurements were self-assessment of high stress inside and outside the workplace, stress signs, and feelings of depression. Employees were highly satisfied with the program and felt that it had impacts on their knowledge and capacities to manage their health behaviour. During the same period, absenteeism in the organization declined by 28% and turnover by 54%. From the organization's perspective, program implementation was very successful.

Conclusions: This study's results are in line with previous findings of significant benefits to organizations and employees from worksite health promotion. The close relationship between the program outcomes and the overall process of organizational renewal that it accompanied supports previous arguments that worksite health promotion will be most effective when it promotes overall organizational health.

Key words: Health behaviour; health promotion; workplace

La traduction du résumé se trouve à la fin de l'article.

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Several reviews of worksite health promotion programs suggest that they improve risk factor control and health benefits among employees¹⁻⁸ while reducing absenteeism and health care costs.⁹⁻¹³ Programs that incorporate environmental modifications^{14,15} are more effective, as are longer-term, comprehensive interventions.¹⁶⁻¹⁸ Moreover, several studies have shown that programs conducted on the worksite in accessible locations, on company time and taking employees' schedules into account, improve employee participation^{19,20} and have the potential of reducing morbidity and health care costs.^{11,21,22}

This paper reports on the implementation and results of a three-year comprehensive worksite health promotion program called *Take care of your health!* delivered in a financial organization based mainly in Québec. Overall, this organization employs approximately 40,000 people, of whom approximately 8,000 have participated in the program to date. The current study reports on an evaluation conducted within the first branch of the organization to participate in the first phase of the program. This branch employed 656 employees at the beginning of the program and 905 employees at the end of three years.

The overall aim of the program was to provide employees with information and support for risk factor reduction, using a personalized approach and involving the organization's management as both program participants and promoters. The program consisted of six modules on the following five themes: global health (first and last modules), stress management, heart health (including physiological measurements: blood pressure and cholesterol screening), healthy eating and physical activity. Each module had the following components: 1) a 1.5 to 2-hour educational session, delivered by an external health professional (physician, nurse or nutritionist). At these sessions, participating employees completed a self-administered health assessment on the session theme. Employees participated during their regular working hours (including evenings and weekends), with replacements being organized by their managers so as to encourage participation; 2) a personalized health status profile based on the self-administered health assessments and sent to employees

approximately four weeks after the educational session; 3) for those employees who wished it, a telephone follow-up interview with a nurse to discuss their risk profile, approximately four weeks after receipt of the profile. The program was delivered at the worksite over a three-year period, beginning in 2001. Participation was voluntary, but strongly encouraged by managers. Employee participation rates in the six modules varied between 39% and 76% (taking into account growth in the organization size over the implementation period).

During the three-year implementation period, smokers also had the opportunity to voluntarily participate in an annual tobacco cessation challenge contest. In the last year of the program, a physical activity challenge program was also implemented.

The *Take care of your health!* program, as well as the tobacco cessation and physical activity challenges were developed and delivered by ACTI-MENU, a health promotion organization. The evaluation of the *Take care of your health!* program was funded by a private foundation, la Fondation André et Lucie Chagnon, and carried out by researchers from the Université du Québec à Montréal and the Montreal Heart Institute.

METHODS

The data for this evaluation come from four sources: analysis of changes in the self-assessed health status of employees who participated in at least three modules including the first and the last (i.e., who could be considered to have had at least moderate exposure to the program) (n=270); satisfaction and perceived impact questionnaires administered to these same 270 employees at the end of the program; qualitative interviews with company managers; and organizational data on employee absenteeism and turnover.

Changes in employees' self-assessed health status

The self-administered health assessment completed at the first and last sessions asked employees to report their levels of the health-related behaviours and conditions covered in the educational sessions, including: physical activity; fruit, veg-

TABLE I

Changes in Employees' Self-reported Health Status: Health Profile Scores (n=270 program participants)

	Pre (Module 1)	Post (Module 6)	Significance
Global Health Score* Mean ± std	62.2 ± 14.5 %	69.6 ± 13.6 %	p<0.0001
Physical activity On average, how many days a week do you spend at least 30 minutes engaged in physical activity?			
≥5 days	16.7	28.2	p<0.0001
3-4 days	25.2	35.6	
1-2 days	39.6	27.4	
<1 day	18.5	8.9	
Fruit consumption How many servings of fruit or fruit juice do you consume per day?			
≥3 servings	20.7	29.3	p<0.0001
2 servings	36.3	37.0	
1 serving	31.5	28.5	
<1 serving	11.5	5.2	
Vegetable consumption How many servings of vegetables or vegetable juice do you consume per day?			
≥3 servings	17.0	30.0	p<0.0001
2 servings	36.7	44.4	
1 serving	35.2	21.1	
<1 serving	11.1	4.4	
Whole-grain cereal products consumption Do you eat whole-grain cereal products?			
Yes, every day	48.9	57.0	p=0.0016
Sometimes	34.1	34.1	
Rarely/never	17.0	8.9	
Fat consumption Do you limit the amount of fat in your diet? (examples of fatty foods were given)			
Often	44.1	59.6	p<0.0001
Sometimes	35.6	33.3	
Rarely/never	20.4	7.0	
Smoking Do you smoke?			
I don't smoke, but I regularly breathe in cigarette smoke at home or at work	8.2	7.4	p=0.0147
I don't smoke	64.8	72.6	
I smoke regularly (every day)	19.6	13.7	
I smoke occasionally (not every day)	7.4	6.3	
Non-smokers	73.0	80.0	p=0.0046
Smokers	27.0	20.0	
Stress level How would you describe your stress level <i>at work</i> ?			
Low or very low	11.5	17.8	p=0.0006
Moderate	70.0	55.9	
High or very high	18.5	26.3	
How would you describe your stress level <i>away from work</i> ?			
Low or very low	27.4	41.5	p<0.0001
Moderate	45.6	41.5	
High or very high	27.0	17.0	
Stress symptoms Do you display any of the following signs that may be attributable to excessive stress? (list of signs)			
Rarely or never	25.9	37.8	p<0.0001
Occasionally	48.9	45.2	
Often	25.2	17.0	
Feelings of depression Do you ever feel depressed?			
Rarely or never	38.5	54.8	p<0.0001
Occasionally	55.2	43.3	
Most of the time	6.3	1.9	

* A composite of items following it in the table and others, this score ranges from 0 to 100. Scoring of this tool is proprietary. Please contact the authors for further information.

etable, whole-grain cereal product, fat and alcohol consumption; sleeping habits; smoking; stress level and stress symptoms; feelings of depression; back problems; medication compliance, and body weight. These items and a summary Global Health

Score, presented on a scale from 0 to 100, where 100 equaled optimal health, were used to assess changes in self-reported health status. Global Health Score results were individually matched to undertake a paired t-test.

TABLE II
Perceived Impact of the Program on Health Behaviours, Employee Questionnaire
(n=169 respondents)

Item	% Agree or Strongly Agree
I now know more about my health.	86.1
The program motivated me to think of me and my health.	87.1
The program encouraged me to make changes in my lifestyle habits.	79.1
Thanks to this program, I feel more able to take charge of my own health.	80.1
During the program, I made changes to become more active.*	80.1
During the program, I made changes to improve my eating habits.†	75.1
During the program, I made changes to better manage my stress.	51.8
During the program, I lost weight.‡	33.7 (% yes)
The program helped to create an environment that is more favourable to employee health.	87.3
Company management has implemented activities to support my physical and psychological health.	89.3

* Among those who did not indicate that they were already active enough.

† Among those who did not indicate that their eating habits were already healthy enough.

‡ Scored as "yes" or "no".

TABLE III
Annual Absenteeism and Turnover

	Turnover rate*	Absenteeism rate†
2001: intervention start	13.06	3.43
2002	10.97	2.34
2003	6.88	2.40
2004	6.19	2.46

* Voluntary departures or transfers among permanent employees, % of employees, annualized from monthly totals.

† Percent of absent days over total expected working days.

Employee satisfaction and perceived impacts: Employee questionnaire

A self-administered questionnaire containing 50 items assessing satisfaction with and perceived impacts of the program was administered approximately four months after the last module. The questionnaires were individually addressed and returned to the external evaluator. A prize incentive was offered to the employees who completed the questionnaire. One hundred and sixty-nine employee questionnaires were completed, for a participation rate of 63%. Respondents and non-respondents were the same age (mean age 40.7 years), but females were marginally more likely to complete the questionnaire than males (64% of females responded, versus 51% of males) (Chi-squared (1) = 3.28, $p=0.07$).

Managers' views of program implementation

Qualitative key informant interviews were conducted by an external evaluator with eight senior managers and the union steward. These interviews assessed the perceived impacts of the program on employees and the work environment, as well as direct and indirect benefits accruing to the organization.

Organizational data: Absenteeism and turnover

The organization supplied data on annual turnover and absenteeism rates before and during the study period.

Analyses

McNemar's test and t-tests were used to compare response levels for dichotomous and continuous variables respectively in the employees' health profile score variables at the beginning and end of the program. For categorical variables having three or more categories, marginal homogeneity was used to test changes in health profile score variables, using log-linear models. These analyses were conducted using SAS version 8.02. Descriptive statistics summarizing the results of the employee satisfaction questionnaire were calculated using SPSS version 11.5. Qualitative interview data were analyzed using standard qualitative analysis techniques.

RESULTS

Changes in employees' self-assessed health status: Health profile scores

Table I shows the changes in self-assessed health status between the first and last

modules for the 270 employees having completed at least three modules, including the first and last. The mean Global Health Score increased significantly ($p<0.0001$). Participants were significantly more likely to report engaging in physical activity ≥ 5 days per week ($p<0.0001$). Better nutritional practices were also reported, including: eating ≥ 3 servings of fruits or fruit juices per day; eating ≥ 3 servings of vegetables and vegetable juice per day; eating whole-grain cereal products every day; and limiting the amount of fat in the diet (all p -values <0.01). The proportion of smokers among program participants was significantly reduced, from 27.0% to 20.0% ($p=0.0046$). The proportion of regular smokers also declined ($p=0.0147$). Also reduced significantly between the two measurements were experience of high stress levels outside the workplace, stress signs, and feelings of depression (all p 's <0.0001). Assessment of stress at the workplace also changed significantly, with the proportion of employees reporting high or very high levels increasing from 18.5% to 26.3%, and the proportion reporting low or very low levels also increasing, from 11.5% to 17.8%.

Employee satisfaction and perceived impacts: Employee questionnaire results

Exposure to Program Components

This questionnaire was completed by 169 employees who had participated in the first and last program modules as well as at least one of the other four modules. In the questionnaire, respondents were asked to indicate in which of the modules they had participated. Ninety-one percent (91.1%) indicated they had participated in the stress module, 88.8% in the heart health module, 88.2% in the healthy eating module and 90.5% in the physical activity module. Participation in the voluntary telephone follow-up declined over time, with 81.1% of questionnaire respondents receiving counselling after the first module and 46.7% after the sixth.

Satisfaction with Program Components

Satisfaction was high with the education sessions and documentation, with over 90% of questionnaire respondents agreeing or strongly agreeing that they were clear

and useful. Satisfaction with the telephone follow-ups was somewhat lower, with 61% of questionnaire respondents stating they were helpful (although it was higher (73%) among respondents who had received all six telephone follow-ups).

Perceived Impact of the Program on Health Behaviours

As Table II shows, most respondents indicated that the program had had positive impacts on various aspects of their health knowledge and capacity to manage their health, including: knowing more about their health; motivating them to think more about their health; making changes to become more active; and improving their eating habits. A surprisingly large proportion of respondents (33.7%) stated that they had lost weight. The questionnaire data also indicated that employees perceived the program to have had positive impacts on the work environment, and that management had implemented activities supportive of employee health.

Organizational data: Absenteeism and turnover

Table III shows the annual turnover and absenteeism rates for the entire branch of this organization for the period immediately before and during the study period. The average annual turnover rate declined by 54% over the entire intervention period, while absenteeism dropped by 28% initially and then remained constant.

Managers' views of program implementation

The key informant interview data showed that, from the organization's perspective, program implementation had been very successful. The decision to implement the program coincided with the arrival of a new vice president who adopted the program as part of an overall program of organizational renewal. Participation targets were included in managers' business plans. From their perspective, the participation rates attained were at or slightly below the targets. Managers became visibly engaged in the program, and activities and environmental modifications were introduced that went beyond the educational component offered by ACTI-MENU. These included staff-organized physical activity and relaxation sessions (including installation of a

space for in-chair massage), a Weight Watchers group, modifications to stairwells to encourage their use, and promotion of bicycle use through improved and more secure bicycle racks and access to lockers and showers for bicycle users. According to the key informants interviewed, the reductions in absenteeism and turnover observed during the program implementation period helped the organization reverse a worrisome negative trend and better position itself in a marketplace where retention of human resources is a key productivity driver. However, these gains were not universally attributed to the health promotion program, as some interviewees noted that these changes had not been seen in all departments. Other interviewees felt that they resulted both from the overall organization renewal and the health promotion program.

DISCUSSION

This study's results are in line with previous findings of significant benefits to organizations and employees from worksite health promotion. Moreover, the close relationship between the program outcomes and the overall process of organizational renewal that it accompanied supports previous data showing that worksite health promotion is most effective when it promotes overall organizational health.²³ The positive changes observed in employee behaviour and the organizational environment should be understood as resulting from a comprehensive organizational health intervention, with joint and inseparable contributions made by the health promotion program and other organizational interventions designed to increase productivity and retention and improve organizational climate.

This study is limited by its lack of a controlled design, as are many others in the literature due to the complexity of establishing equivalent control groups. However, future evaluations within this multi-branch organization should incorporate control groups or time-series designs with longer post-intervention follow-ups.

In addition, future evaluation work for this program could focus on establishing the effectiveness of the various program components. In this context, a better understanding about the decreasing inter-

est in the telephone counselling component would be valuable. The evaluation could also, for example, include an analysis in which data are stratified by number of modules completed to allow for a dose-response relationship to be examined. Or, it could analyze employees participating in the program absenteeism and turnover rates instead of all the branch's employees. Finally, it could examine how respondents compare to non-respondents in terms of age and sex.

Positive results from this branch have led the organization to continue efforts to promote employee health beyond the initial three-year implementation period, carrying into a new three-year Phase 2 of the program designed to ensure continuity and respond to employee and organizational needs.

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RÉSUMÉ

Contexte : Cet article présente un compte rendu de l'implantation et des résultats d'un programme de promotion de la santé intitulé *Ma santé, je m'en occupe!* au sein du premier groupe à s'en prévaloir. Le programme a initialement été mis en œuvre dans l'un des services d'une grande entreprise financière. Ce service comptait 656 employés au début de la période d'implantation et 905 à la fin. Le programme comportait six modules éducatifs offerts sur une période de trois ans. Le premier et le dernier modules comprenaient un bilan de santé globale. La décision d'implanter ce programme a coïncidé avec un projet global de renouvellement organisationnel.

Méthode : Les données de notre évaluation proviennent de quatre sources : l'analyse des profils de santé globale des employés qui ont participé au premier et au dernier modules du programme (n=270); les questionnaires remplis par ces mêmes employés à la fin du programme (n=169); les données organisationnelles sur l'absentéisme et le roulement du personnel, ainsi que des entrevues qualitatives auprès de gestionnaires de l'entreprise (n=9).

Résultats : Les taux de participation des employés aux six modules ont varié entre 39 % et 76 %. L'analyse des profils de santé a montré une augmentation significative du score de santé globale. Les participants étaient, de façon significative, plus nombreux à déclarer une fréquence d'activité physique accrue ainsi que de meilleures habitudes alimentaires. Le pourcentage de fumeurs parmi les participants a diminué de façon significative (p=0,0147). Les niveaux de stress élevés au travail ou à l'extérieur, les symptômes de stress et les sentiments de déprime autodéclarés ont aussi diminué significativement entre les deux mesures. Les employés se sont montrés très satisfaits du programme et ont senti qu'il avait eu des impacts sur leurs connaissances et leurs capacités de prendre leur santé en main. Au cours de la même période, l'absentéisme a diminué de 28 % et le roulement du personnel de 54 % dans l'organisation. Du point de vue de gestionnaires interviewés, l'implantation du programme a été une réussite.

Conclusions : Les résultats de cette étude sont conformes aux résultats antérieurs ayant démontré les avantages considérables des programmes de promotion de la santé en milieu de travail pour les organisations et les employés. Le lien étroit entre les résultats du programme et le projet global de renouvellement organisationnel qu'il a accompagné confirme les observations antérieures selon lesquelles les programmes de promotion de la santé en milieu de travail sont plus efficaces lorsqu'ils encouragent la santé organisationnelle de façon globale.

Mots clés : habitudes de vie; promotion de la santé; milieu de travail