Published in final edited form as:

J Occup Environ Med. 2011 July ; 53(7): 751–757. doi:10.1097/JOM.0b013e318223d42f.

Exploring the role of co-worker social support on health care utilization and sickness absence

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Abstract

Objectives—To explore the association of baseline co-worker social support with follow-up measures of health care use and sickness absence.

Methods—Data were obtained on 1,240 employees from 33 worksites, through Promoting Activity and Changes in Eating, a group randomized weight maintenance trial. Co-worker social support, health care utilization, and absenteeism were assessed via a self-reported questionnaire. Generalized Estimating Equations were employed using STATA version 10.

Results—Higher baseline co-worker social support was significantly associated with a greater number of doctors' visits ($p = 0.015$). Co-worker social support was unrelated to number of hospitalizations, emergency room visits, or absenteeism.

Conclusions—The relationship between co-worker social support and health care utilization and absenteeism is complex and uncertain. Future studies should measure more specific outcomes, incorporate important mediating variables, and distill how social networks influence these outcomes.

INTRODUCTION

The United States leads the world in per capita health care expenditures.⁽¹⁾ Several factors contribute to the high and rising level of direct and indirect costs, including an aging and increasingly unhealthy population^(2–3), technological and pharmaceutical innovations^(4–5), and increased health care utilization and productivity loss as a result of sickness

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absence.^(6–7) More specifically, the rise in health care use and sickness absence is partly attributable to a combination of several risk factors.⁽⁸⁾ Both lifestyle and psychosocial factors—found to have a reciprocal relationship⁽⁹⁾—may increase the likelihood of developing disease precursors, as well as more latent widespread diseases, such as congestive heart failure, cancer, diabetes, and obesity.^(2–3) In turn, these outcomes account for increased health care usage⁽³⁾, an estimated 31% of all health care costs⁽³⁾, and sickness absence, which has become increasingly expensive for employers.^(6, 10–12)

In an effort to improve and sustain health and shrink health-related spending, a number of intervention strategies have been suggested. One proposed approach includes introducing more health promotion programs and health behavior change policies at the worksite-level.^(13–14) Worksite wellness interventions have been linked to decreased sickness absence and increased employment productivity⁽⁶⁾, decreased use of health services^(3, 11), and reduced costs.⁽¹⁵⁾ Consequently, several federal and state agencies have contemplated using financial incentives to encourage employers and their employees to participate in worksite wellness programs that focus on disease prevention and health promotion.^(14, 16)

One potential worksite intervention approach to more successfully promote health behavior change is to foster a more supportive social context.^(14, 17–18) Improving the social context by increasing social support has become ever more important at the worksite⁽¹⁴⁾, given that 60% of adults are currently employed and spend roughly one-third of their waking hours at work.⁽¹⁹⁾ Indeed, several studies have proposed that a lack of social support at the worksite may be linked to the uptake of a greater number of risk behaviors⁽²⁰⁾ and poor psychosocial factors.⁽²¹⁾ As a result, a less supported and thus unhealthier employee (psychosocially and physically) may then require more health services and experience more sickness absence and reduced productivity^(12, 22)—increasing both employees and employers' health care costs. Conversely, while some studies suggest that higher co-worker social support may result in less health care use and sickness absence^(12, 23–24), others have shown that increased support may actually translate into increased use of health care resources and absenteeism.^(25–26)

A handful of studies have examined the association between co-worker social support and sickness absence^(23–24, 26–29), but none, to our knowledge, has evaluated the relationship between co-worker social support and key health care utilization variables or assessed these associations in a U.S. population. Moreover, given mixed results found in extant literature, the direction of these relationships is unclear and requires further investigation. Hence, the goal of this study is to explore the temporal association between co-worker social support and health care use and sickness absence. In doing so, we seek to inform the development of more successful worksite wellness programs designed to create a healthier workforce and decrease health care spending.

Socio-environmental model for influencing health care utilization and sickness absence

To illustrate the role of the socio-environmental context in health care utilization and sickness absence, we developed a conceptual framework (Figure 1) to guide our study, based on our own research and theoretical underpinnings^(30–31) as well as the Andersen behavioral model.⁽³²⁾ While this study seeks solely to explore the relationship between co-worker support and health care utilization and sickness absence, we present this diagram to highlight the important direct, indirect, reciprocal, and cyclical relationships that may exist in the pathway between co-worker social support and our study's outcomes of interest.

In this framework, we include four levels influencing our study's outcomes of interest (three measures of health care utilization and one measure of sickness absence). These four levels include the environment, such as the health care system and the worksite environment;

population characteristics such as predisposing, enabling, and need factors (e.g., co-worker social support); risk factors, which encompass health behaviors, as well as psychosocial factors, and finally health outcomes, including alterable disease precursors and more latent disease states.

More specifically, there are both upstream (macro) and downstream (micro) factors that intermingle with these associations. The macro-level (environment) conditions the degree, form, and nature of social networks, providing opportunities for social support.⁽³³⁾ The micro-level (co-worker social support) impacts health through various pathways such as psychosocial risk factors.⁽³¹⁾ Indeed, support has been widely shown to have an impact on an individual's emotional well-being as highlighted in the Social Learning Theory.^(21, 30) In turn, these psychosocial factors may then influence health behavior adoption, maintenance, and change.^(18, 30) Risk factors—influenced by co-worker social support⁽²⁰⁾—directly impact health outcomes⁽³⁴⁾ and therefore indirectly impact the triadic relationship that exists across time between co-worker social support and health care utilization and sickness absence.⁽³⁾ Through these pathways, co-worker social support may influence health care use and absenteeism.

METHODS

Data Source

To examine the relationship between co-worker social support and health care utilization and sickness absence, we employed data obtained by the Promoting Activity and Changes in Eating (PACE) worksite wellness program.⁽³⁵⁾ This research was approved by the institutional review board of the Fred Hutchinson Cancer Research Center. PACE's aim was to design and implement a comprehensive worksite randomized controlled trial that would offer goal-setting, skill-building, and other important resources critical to behavior change. Baseline and two-year follow-up data from PACE provided a unique opportunity to study our exposure and outcomes of interest. Baseline surveys were collected from 100% of employees for worksites with 40–125 employees and from a random sample of 100 employees for worksites with 126–350 employees. Survey questions assessed areas such as demographics, health behaviors, work type, health care utilization, sickness absence, and social support. The PACE study is explained in further detail elsewhere.⁽³⁵⁾

Study Population

At baseline, the study population in PACE consisted of employees from 34 worksites. One worksite dropped out of the study after baseline survey administration, producing a final study population from 33 worksites (baseline and follow-up) that were recruited and randomized to a two-year weight gain maintenance/prevention intervention. These worksites were recruited from companies in the greater Seattle Metropolitan area. U.S. Standard Industrial Classification two-digit codes were employed to identify companies with predominantly sedentary employees and without wellness programs or cafeterias. Additional study population exclusion/inclusion criteria are described in detail elsewhere.⁽³⁵⁾

Baseline surveys were collected from 2,878 employees and follow-up surveys were collected from 2,126 employees; only a subset (nested cohort) of employees filled out both a baseline and follow-up survey. To perform our analyses, we used the nested cohort, which captured all employees from both the intervention and control arm with complete baseline and follow-up data, totaling 1,240 employees.

Assessment of Co-Worker Social Support

The self-administered questionnaire⁽³⁵⁾ included five employee workgroup questions relating to the worksite social context. These questions were adapted based on the survey included in the Promoting Healthy Living: Assessing More Effects study⁽³⁶⁾ and were deemed to be particularly suitable at measuring facets of the support context experienced at the worksite, among co-workers. These questions evaluated the level of support or unity co-workers experienced with one another: (1) I look forward to being with those on my shift or in my work group; (2) People take a personal interest in each other on my shift or in my work group; (3) Members of my shift or work group really help and support one another; (4) I feel it would make a difference in my work shift or work group's performance if I wasn't there; (5) There are set ways of doing things on my shift or in my work group.

To develop our social support score, we performed a principal components analysis⁽³⁷⁾ on the five employee workgroup questions. We did this to examine whether these items constituted a cohesive general co-worker social support scale. This approach allowed us to condense the number of items into one score, reducing the number of models run and increasing interpretability of results. After reviewing the questions, we posited that there was one type of social support characterized within the five questions. The resulting principal component loaded highly on three of the five questions (questions 1–3), explaining 45% of the total variation, with an eigenvalue of 2.04. These three questions, which made up our co-worker social support scale, had a Cronbach's alpha of 0.77. The co-worker social support measure was continuous, ranging from one to four (one indicated a low level of support and four indicated a high level of support). The remaining two questions (questions 4–5) were removed from further consideration.

Assessment of Health Care Utilization and Sickness Absence

Health care use was assessed via three questions⁽¹¹⁾ often used to assess utilization of health care resources. These questions included annual number of doctors' visits, hospitalizations, and emergency room visits experienced over the course of the previous year. Sickness absence was evaluated using one question.⁽¹¹⁾ This question gauged work days missed due to illness or medical reasons over the past year—a frequent measure used to assess worker productivity.⁽³⁸⁾ We computed the number of times (health care utilization) or days (sickness absence) reported to measure the frequency of our outcomes.

Results are presented for health care utilization and absenteeism during a two-year follow-up after the baseline self-administered survey for subjects still employed during this time. Using self-reported data as opposed to administrative records to determine the extent of these outcomes is an approach that has been used elsewhere.⁽²⁵⁾

Our analytic process attempted to establish temporal sequence by examining co-worker social support (exposure) collected in baseline surveys and measures of health care utilization and sickness absence (outcomes) collected in follow-up surveys. This approach of using two repeated self-reported measures for some of the key variables included in this study has been used previously.⁽²⁷⁾ While follow-up surveys were administered at two years, the outcome measures reflect usage and absenteeism in the year prior to survey administration; thus, they correspond to one year after exposure collection. Hence, the study design is prospective, in which we assess a potential predictor of consequent health care utilization and absenteeism, and each individual contributes only one observation.

Statistical Procedures

We had a total of four outcomes of interest and thus needed to specify appropriate models for each. The PACE study design involved participants clustered within the same worksite.

To account for the multi-level nature of the data, as well as right-skewed outcomes, we performed Generalized Estimating Equations, with a negative binomial link.

Given that prior health care use and absenteeism often predict future health care utilization and sickness absence⁽³⁹⁾, we controlled for outcome measures at baseline. Because these data were derived from a randomized, controlled trial targeting health behaviors, which could impact our study's outcomes, we adjusted for intervention status.

We analyzed a nested cohort of individuals with baseline and follow-up data on all questions included in the survey, totaling 1,240 participants. To improve statistical power, multivariate regression models were used to analyze PACE participants with complete data for at least one health care utilization and sickness absence outcome, thus producing a different sample size for each model. Of the original sample of 1,240 participants, final regression models included at least 991 (80%) and as many as 1,055 (85%) individuals, depending on the outcome analyzed. We subsequently performed analyses on a single sample with complete information on all included factors for all models. The results did not significantly differ between these two approaches; this paper reports estimates from the former method.

Analyses were executed in STATA version 10. To test our hypotheses, we modeled the association between baseline co-worker social support and each outcome variable measured at follow-up, adjusted for confounders, baseline outcome, and intervention status, for the entire nested sample. Each person contributed one observation to the model. Worksites were specified as the clustering mechanism. Additional covariates included in the final analyses were gender, age, education, and race/ethnicity. We regarded possible confounders based on existing data and present-day evidence. In addition, over 99% of our nested sample reported having health insurance coverage at baseline; thus, we did not include health insurance status as a covariate. To display our results, we report model-predicted means and 95% confidence intervals. All p-values reported for hypothesis tests are Wald tests.

Sensitivity Analysis

Given that health status may impact health care utilization and sickness absence, we also ran a sensitivity analysis using behavioral characteristics as proxies for health status. These characteristics incorporated in the PACE questionnaire⁽³⁵⁾ included lifestyle risk factors such as smoking, diet, physical activity, and outcomes such as body mass index (BMI). We defined smoking as current consumption of cigarettes⁽⁴⁰⁾. Dietary behaviors included fruit and vegetable intake⁽⁴¹⁾, fast food⁽⁴²⁾ and soda⁽⁴³⁾ consumption, and frequency of eating while doing other activities.⁽³⁴⁾ Physical activity measures included a computed metabolic equivalent score that gauges regularity of free-time physical activity and a question that measures the intensity of workout.⁽⁴⁴⁾ BMI was computed using self-reported height (m) and weight (kg). Since results from models including health behaviors did not significantly differ from the more parsimonious, reduced models, we report results excluding behavioral characteristics as covariates.

RESULTS

Table 1 shows the demographic characteristics of employees at the PACE worksites for the baseline sample and nested cohort, combining intervention and control groups. Forty-one percent (1,181 of 2,878) of our baseline sample, or 95% (1,181 of 1,240) of our nested cohort, had follow-up measures. Thirteen people with baseline data only were excluded due to erroneous records, and 59 individuals within the nested cohort were excluded due to missing data. Significant differences between the baseline sample and the nested cohort were found for age ($p < 0.001$), education ($p = 0.018$), and race/ethnicity ($p = 0.012$). The nested cohort, as compared to the baseline sample, had the same gender composition

(roughly an equal representation of men and women), was slightly older (44 versus 41 years), was somewhat less educated (48% versus 44% high school graduate or less), and had small variations in race/ethnicity categories other than White which was identical in both samples (75%). While we observed some statistical differences, we noted similar characteristics between the baseline only sample and nested cohort.

Table 2 displays baseline co-worker social support questions for the nested cohort. The majority of employees agreed (range: 30–33%) or strongly agreed (range: 59–61%) with each of the questions included in the co-worker social support measure indicating a generally high level of co-worker social support. Even so, 8–11% of participants reported low levels of support.

Table 3 provides descriptive statistics for baseline and follow-up questions related to health care utilization and sickness absence for the nested cohort. Mean number of doctors' visits at both time points was roughly 3 times in the previous year, followed by a mean of 0.1 times for hospitalizations, and a mean of 0.15 times for emergency room visits. Mean sickness absence was approximately 3 days in the past year at both baseline and follow-up. No statistically significant differences at baseline compared to follow-up were observed in any of the four outcome measures.

Table 4 reports results from multivariable models testing for associations between co-worker social support and health care utilization and sickness absence. In model 1, we present worksite adjusted results (only adjusted for baseline outcome and worksites). In model 2, we present intervention adjusted results (adjusted for baseline outcome, worksites, and intervention status). In model 3, we present fully adjusted results (adjusted for baseline outcome, worksites, intervention status, gender, age, education, and race/ethnicity).

Our results reveal that higher baseline co-worker social support was associated with a greater number of doctors' visits in the previous year. No additional significant associations were observed between baseline co-worker social support and hospitalizations, emergency room visits, and/or sickness absence. Additionally, all results, whether statistically significant or insignificant, were in a positive direction.

To help explain our findings, we performed exploratory post-hoc analyses (results not shown), looking at predictors of change in health care utilization and absenteeism. To do so, we identified individuals who increased their outcomes by one standard deviation from their baseline outcome levels. Our results showed that co-worker social support was not associated with higher odds of increased doctors' visits. We also found that higher baseline co-worker social support was associated with lower odds of increased emergency room visits (OR: 0.13, 95% CI: 0.05, 0.38).

The post-hoc analysis also looked at demographic predictors of change in our outcomes. We found that women had greater odds of increased doctors' visits compared to men (OR: 1.44, 95% CI: 1.01, 2.07). Hispanics had greater odds of increased doctors' visits (OR: 2.18, 95% CI: 1.09, 4.33), hospitalizations (OR: 3.17, 95% CI: 2.05, 4.95), emergency room visits (OR: 2.16, 95% CI: 1.42, 3.31), and sickness absence (OR: 2.68, 95% CI: 1.66, 4.31) compared to Whites. More formally educated employees (college graduate-post graduate) had lower odds of increased hospitalizations (OR: 0.61, 95% CI: 0.39, 0.95), emergency room visits (OR: 0.45, 95% CI: 0.29, 0.69), and sickness absence (OR: 0.58, 95% CI: 0.35, 0.95) compared to those less formally educated (eighth grade-high school graduate). Of note, for all models, previous health care use or absenteeism was highly predictive of future outcomes.

DISCUSSION

In this study, we explored the relationship between co-worker social support and health care utilization and sickness absence. While several studies found that higher co-worker social support resulted in less health care use and sickness absence^(12, 23–24), our findings more closely aligned with those studies revealing contrary results^(25–26): higher baseline co-worker social support was significantly associated with a greater number of doctors' visits. There were no observed significant associations between co-worker social support and hospitalizations, emergency room visits, and sickness absence. Of note, the analyses presented in this paper were exploratory, and results should be interpreted with caution. These findings should be used to guide the design and evaluation of future worksite wellness programs. In the paragraphs below, we attempt to explain our findings and offer future research areas and hypotheses to be tested.

Our results showed that higher co-worker social support was associated with a higher number of doctors' visits. One possible explanation for this finding could be that individuals who experience a more supportive social work climate through increased co-worker support may feel less precarious about taking time off from work^(25, 45) to seek medical attention when needed, for instance. Indeed, they may have a greater number of empathetic and accommodating colleagues willing to share in the responsibility of additional labor.⁽²⁵⁾ Thus, we could speculate that co-worker social support may be a determinant of realized health care. It is important to note that greater use does not necessarily imply overuse. Post-hoc analyses revealed that higher co-worker social support was not associated with large increases in utilization or absenteeism. In fact, we found that, in some cases, higher co-worker social support was protective.

We found no statistical significance between co-worker social support and emergency room visits, hospitalizations, or sickness absence. One explanation for these null findings could be that the relationship between our exposure and outcomes may be too weak to detect with our data, given all the factors that may influence both utilization and absenteeism. There may be additional confounders, unmeasured in this study that may be important adjustment variables necessary to uncover the true relationship between our measures. Moreover, instruments used to assess these factors, especially our co-worker social support measure, could be insufficiently sensitive to reveal a significant association.

While the results of our study revealed a positive relationship between co-worker social support and number of doctors' visits, some contend that a more supportive work climate (e.g., positive support between and among management and employees⁽¹⁴⁾, flexible work policies and regulations⁽⁴⁶⁾, and generous sick-leave coverage⁽²²⁾) may result in healthier psychosocial factors and related health outcomes^(21, 28) leading to reduced use of health services and missed work.^(12, 23–24) However, a healthier social work environment may actually contribute to utilization and absenteeism⁽²⁶⁾, by enabling employees to feel less guilty and stressed about missing work. While this may initially appear counterintuitive, several studies have expressed a similar connection.^(25–26, 45) Indeed, a study examining absences from work during residency training found that implemented measures that supported residents by providing coverage from unexpected absences reduced residents' feelings of apprehension about missing work due to illness by minimizing colleagues' extra workload burden, thus creating a more collegial atmosphere.⁽²⁵⁾ Moreover, a qualitative study seeking to determine why registered nurses attend work when they are ill found that tension and a lack of support from unsympathetic supervisors and other nurses made them feel culpable about missing work and therefore contributed to their presenteeism.⁽⁴⁵⁾

Consequently, a more supportive worksite ambiance may in fact favor healthier employees (both psychosocially and physically), despite the fact that higher health care use and absenteeism may be evident. In doing so, one might hypothesize that long-term health benefits and lower associated direct and indirect health care costs may justify short-term health care use (possibly preventive instead of reactive) and absenteeism (rather than presenteeism). Studies with a longer-term follow-up period are needed to test such a hypothesis.

Given that there are conflicting and unexplained associations between co-worker social support and health care utilization and sickness absence, the results from this study should be used to motivate and improve future research on these relationships. First, a better understanding of the differential impact that a socially healthier work ambiance and co-worker social support, in particular, may have on various types of health care (i.e., preventive versus reactive) would prove useful. Our post-hoc analysis suggests (but by no means confirms) that co-worker social support may protect against catastrophic changes in emergency care. Second, additional mediating variables such as self-reported health/disease status displayed in the pathways presented in this study would be critical to examine in future studies. Third, a more thorough and critical comprehension of the role that network structure and worksite climate have on employees' decision-making regarding sickness absence must be undertaken.

Limitations and Strengths

The primary limitation to this study is the two-year duration of the PACE intervention. Outcome measures represented one-year follow-up, which may have been insufficiently long to observe any changes in important health outcomes that might influence health care utilization or worker productivity. It is also possible that previous health care utilization and absenteeism may have influenced our baseline measure of co-worker social support; however, we accounted for this in our multivariate analyses by controlling for baseline outcomes. In addition, data were collected through self-reported questionnaires and were not cross-validated with any other records.

One of the greatest strengths of this study is that relatively few studies have looked at the relationship between co-worker social support and sickness absence,^(23–24, 26–29) and none, to our knowledge, has examined the association between co-worker social support and health care utilization or evaluated these in a U.S. population. Additionally, results from previous research are conflicting at times and unclear. Thus, this study adds to existing evidence and provides a useful platform for future studies examining these relationships. Finally, given PACE's study design, we were able to ascertain the temporal sequence between the measures assessed, since our exposure and outcomes were collected at different time points.

CONCLUSIONS

Measures must be taken to reduce current health care expenditures associated with increased health care use and sickness absence,⁽⁴⁾ and impacting these outcomes through worksite health promotion programs is a potentially beneficial mechanism.⁽¹⁴⁾ In an era when achieving a work-life balance for better health and well-being has never been more underscored⁽⁴⁶⁾, one promising tactic may be to enhance the worksite social context by increasing social support. Our findings highlight that the relationship between co-worker social support and health care utilization and absenteeism is complex and not fully understood. Future studies should measure more specific outcomes (e.g., preventive vs. reactive care instead of use), incorporate important mediating variables (e.g., health

behaviors or health status), and further distill how complex social networks influence these outcomes and behaviors.

Acknowledgments

The author wishes to acknowledge the training and support of the University of Washington's Department of Health Services, the NCI's Biobehavioral Cancer Prevention and Control Fellowship Grant (R25 CA92408; PI: Donald Patrick, PhD), the National Heart, Lung, and Blood Institute Grant (R01 HL079491; PI: Shirley Beresford, PhD), and the NIH/NCI Harvard Education Program in Cancer Prevention and Control (R25 CA057713; PI: Glorian Sorensen, PhD).

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Figure 1.
Socio-environmental model for influencing health care utilization and sickness absence

Table 1

Baseline sample and nested cohort demographic characteristics of employees at PACE workites

	Baseline Only		Nested Cohort		<i>p</i> ^d
	(N = 34 Worksites) ^a (n = 1,684 Individuals) ^b	(N = 33 Worksites) (n = 1,181 Individuals) ^c	n	mean, (s.d.)	
Gender					
Female	830	50	617	52	0.275
Age					
	mean, (s.d.)				
	41.1 (12.2)		44 (10.9)		<0.001
Education					0.018
Less than high school	69	4	46	4	
High school graduate or GED	660	40	522	44	
Technical college	126	8	87	8	
College	545	33	374	32	
Postgraduate or professional degree	252	15	146	12	
Race/Ethnicity					0.012
White	1,203	75	851	75	
Black or African American	58	4	35	3	
Asian	172	11	153	14	
Hispanic	93	6	54	5	
Pacific Islander/Native American ^e	65	4	38	3	

^aOne worksite dropped out after baseline survey administration.^bNumber of individuals who only completed the baseline survey.^cNumber of individuals who completed the baseline and follow-up survey.^dP-value for difference between baseline sample only and nested cohort (t-test for means and chi-square for proportions).^eIncludes Hawaiian, Alaskan Native

Table 2

Baseline co-worker social support for nested cohort

	Strongly Agree	Agree	Disagree	Strongly Disagree
n = 1,143^a	%	%	%	%
I look forward to being with those on my shift or in my work group.	33	59	7	1
People take a personal interest in each other on my shift or in my work group.	30	59	10	1
Members of my shift or work group really help and support one another.	30	61	7	2

^a"n" varies from 1,139–1,143.

Table 3

Baseline and follow-up health care utilization and sickness absence of nested cohort

<u>Descriptive Statistics of Outcome Variables</u>						
(N = 33 Worksites) (n = 1,163 Individuals) ^a						
	Baseline			Follow-up		
	mean, (s.d.)	median	min, max	mean, (s.d.)	median	min, max
Doctors' visits	3.20 (4.80)	2	0, 78	3.20 (4.90)	2	0, 75
Hospitalizations	0.12 (0.41)	0	0, 4	0.10 (0.40)	0	0, 5
Emergency room visits	0.15 (0.47)	0	0, 4	0.15 (0.43)	0	0, 4
Sickness absence	2.90 (6.30)	1	0, 90	3.0 (7.70)	1	0, 120

^a,"n" varies from 1,098 to 1,163.

^b p-value for difference in mean between baseline and follow-up samples, using log-transformed outcomes.

Predicted effect of baseline co-worker social support on health care utilization and sickness absence in nested cohort

Table 4

(N = 33 Worksites) (n = 1,055 Individuals) ^a									
For one unit difference in co-worker social support:									
Model 1: Worksite Adjusted ^b			Model 2: Intervention Adjusted ^c			Model 3: Fully Adjusted ^d			
Predicted Mean	95% C.I.	p ^e	Predicted Mean	95% C.I.	p ^e	Predicted Mean	95% C.I.	p ^e	
Doctors' visits	1.19 (1.05, 1.34)	0.005	1.19 (1.06, 1.35)	0.005		1.16 (1.03, 1.30)		0.015	
Hospitalizations	1.63 (0.86, 3.09)	0.134	1.62 (0.85, 3.06)	0.139		1.57 (0.76, 3.25)		0.223	
Emergency room visits	1.09 (0.71, 1.69)	0.692	1.10 (0.71, 1.71)	0.662		1.11 (0.71, 1.72)		0.651	
Sickness absence	1.42 (0.97, 2.07)	0.070	1.42 (0.97, 2.06)	0.068		1.39 (0.92, 2.10)		0.119	

Note. Predicted mean represents the regression coefficient for co-worker social support.

^a,"n" varies from 991 to 1,055 depending on outcome.

^b Generalized Estimating Equations with negative binomial family and log link were used, adjusted for baseline outcome and worksites.

^c Generalized Estimating Equations with negative binomial family and log link were used, adjusted for baseline outcome, worksites, and intervention.

^d Generalized Estimating Equations with negative binomial family and log link were used, adjusted for baseline outcome, worksites, intervention, gender, age, education, race/ethnicity.

^e p-value for test of no association between co-worker social support and each outcome.