

Organizational Wellness Programs: A Meta-Analysis

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Organizational wellness programs are on or off-site services sponsored by organizations which attempt to promote good health or to identify and correct potential health related problems (Wolfe, Parker, & Napier, 1994). The authors conducted a meta-analysis on studies that examined the effects of participation in an organizational wellness program (fitness or comprehensive) on absenteeism and job satisfaction. The results revealed that participation in an organizational wellness program was associated with decreased absenteeism and increased job satisfaction. The type of wellness program (fitness only or comprehensive) and the methodological rigor of the primary studies were examined as moderators; however, no moderating effects were found. These results provide some empirical support for the effectiveness of organizational wellness programs.

Keywords: organizational wellness, fitness, absenteeism, job satisfaction and exercise

Over the past 25 years wellness programs have been adopted by organizations in an attempt to develop high functioning employees. Wellness programs are on or off-site services sponsored by organizations which attempt to promote good health or to identify and correct potential health-related problems (Wolfe, Parker, & Napier, 1994). It has been estimated that 90% of companies provide at least one subset of a wellness program for their employees (Aldana, Merrill, Price, Hardy, & Hager, 2005). A growing number of companies have committed to providing organizational wellness programs to help improve the health of employees, control health care, absence and absenteeism costs, and to provide an additional benefit to employees (Bly, Jones, & Richardson, 1986).

For the purposes of this study, organizational wellness programs were classified into two types: fitness only and comprehensive. Fitness-oriented programs provide on or off-site membership to health clubs in which participants enjoy aerobic and nonaerobic activities, as well as weight training. Comprehensive wellness programs include both a fitness component and an educational component such as nutrition or

stress reduction classes. Organizations may also offer education-only wellness programs that provide workshops as well as other types of services such as identifying hypertension and occupational health risks (Sperry, 1984). However, education-only wellness programs were not included in the current study due to a lack of evaluation data for these programs.

Although the assumption exists that employees who participate in wellness programs are more physically and psychologically fit and constitute less organizational cost (Altchiler & Motta, 1994), there appears to be little consistent empirical evidence that demonstrates these relationships. The inconsistencies among the results of the research contribute to the larger controversy as to whether or not wellness programs affect important organizational variables such as absenteeism and job satisfaction (Bell & Blanke, 1989). Hence, primary studies on wellness programs have not been able to provide conclusive evidence of the utility of organizational wellness programs. The majority of organizational wellness research was conducted during the 1980s-1990s and typically an entire wellness program that consisted of several components was evaluated (Wolfe et al., 1994). The emergent literature was unable to determine the extent to which various components of a wellness program contribute to financial and psychological variables. Although several previous studies suggest that changes in employee-related variables are attributed to the participation in wellness programs, other research reports inconclusive results.

The need for a wellness review was especially evident because wellness initiatives have become an accepted part of the workplace (Guerra, 1989). Organizations frequently implement wellness programs

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to reduce organizational costs and improve morale. However, organizations rarely evaluate the effectiveness of the programs in meeting these goals. This warrants a comprehensive evaluation to determine if the benefits of wellness programs justify the expense of their implementation and maintenance. In an attempt to resolve the controversy, a meta-analysis comparing the differences between participation and nonparticipation (control group) in wellness programs was conducted and data was examined across two dependent variables: absenteeism and job satisfaction.

Absenteeism

A key reason behind the implementation of wellness programs has been to improve employee health and thus lower illness-related absenteeism rates. It has been estimated that absenteeism costs organizations more than 26 million dollars each year (Althiler & Motta, 1994) and accounts for 10.4 million workdays lost each year (Ho, 1997). These astronomical costs associated with absenteeism are a main reason that organizations have traditionally resorted to the implementation of wellness programs. Although it has been suggested that an individual's overall level of fitness is associated with involuntary absenteeism, the empirical results have been mixed (Althiler & Motta, 1994).

These conflicting results are best illustrated in a study conducted by Bell and Blanke (1989) involving employees from a U.S. transportation company. The study investigated the relationship between fitness center participants versus nonparticipants in relation to absentee rates. Absenteeism was tabulated from employee records for 16 months, eight months prior to the implementation of the fitness program and eight months following. Of the participants, 106 employees were active members of the fitness center. Additionally, the active members were offered the opportunity to receive the following educational and preventative services: a stress test, nutrition education, and cholesterol screening. Thus, this constituted a comprehensive wellness program.

The results illustrated that female participants had fewer absences than female nonparticipants, but surprisingly the male participants actually had a significantly greater number of absences than the male nonparticipant group. The rationale given for the greater number of absence hours for the male participants was that prior to the study, the male participants also had a greater number of absences than the

nonparticipants, which was never controlled for (Bell & Blanke, 1989).

Alternatively, a study by Lynch, Golaszewski, Clearie, Snow, and Vickery (1990) investigated the relationship between participation in a fitness program and the number of absences from work. The study utilized a total of 8095 employees from the Travelers Insurance Company located in Hartford, Connecticut. A comparison was made between employees who had joined the fitness center opposed to those who had not. After three years of collecting data the researchers found that members experienced a 1.2 day decrease in the number of absences (Lynch et al., 1990). However, the studies neglected to report whether they examined or controlled for any group differences.

Another study which demonstrates the relationship between wellness and absenteeism is a quasi-experiment that was conducted with participants from a police force, as well as chemical and banking industries in the Netherlands (Lechner, de Vries, Adriaansen, & Drabbels, 1997). This study was conducted with 884 participants who were assigned to one of three groups based on frequency of exercise per week. The three groups consisted of high participation (exercised once a week), low participation (exercised less than once a week), and the control group (no participation). The outcome variable, absenteeism, was measured a year before and a year after the study. It was concluded that the high participation group had fewer absences than the other groups (Lechner et al., 1997).

Improving employee health and thus reducing absenteeism is one reason why organizations implement wellness programs. However, the program evaluation evidence to date is mixed regarding the actual relationship between wellness initiatives and absenteeism rates. One purpose of this meta-analysis was therefore to synthesize the research on the relationship between wellness program participation and absenteeism.

Job Satisfaction

Job satisfaction is typically defined as an employee's level of positive affect toward his or her job (Locke, 1976; Spector, 1997) and is often thought to develop in response to the characteristics of the employees' jobs or by the characteristics of the organizations in which they work (Hackman & Oldham, 1980). One organizational factor that may impact job satisfaction is the presence of a wellness program.

One perspective is that employers who provide wellness programs are viewed as having more con-

cern for their employees and as a result enhance employees' attitudes toward the organization. A theory developed by Eisenberger and colleagues may be one explanation for this phenomenon. Perceived organizational support (POS) is the extent to which employees believe the organization values their contribution and cares about their personal well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). POS is influenced by various aspects of organizational treatment including rewards, benefits, and job conditions (Guzzo, Noonan, & Elron, 1994) and in turn has been shown to impact job satisfaction (Rhoades & Eisenberger, 2002).

It has been suggested that providing a work site wellness program will engender a positive attitude, making employees happier with the organization and therefore more satisfied with their jobs (Gronningsaeter, Hytten, Skauli, Christensen, & Ursin, 1992). For instance, Ho (1997) found that organizations which offer wellness programs are perceived more positively by their employees in terms of their attitudes toward the organization, job satisfaction, and satisfaction with benefits. Others suggest that the mere presence of a wellness program may help to demonstrate to employees that the organization cares about them and thus improve employee job satisfaction (Zoller, 2004). Relatedly, Patterson, Warr, and West (2004) describe a process in which organizational climate (concern for employee welfare being one characteristic) may influence employees' affective states and thus their job satisfaction.

An alternative explanation suggests that participation in an organizational wellness program makes employees feel better physically. Physical well-being has been shown to impact affect, general happiness, and job satisfaction. Kirkcaldy, Cooper, Shephard, and Brown (1994) supported this notion in a study that examined the effects of fitness on police officers from the United Kingdom on well-being and job satisfaction. It was concluded that police officers who were more physically fit felt better about themselves and thus were more satisfied with their job. General Motors also found that employees who participated in fitness activities had higher levels of job satisfaction than did those who did not participate (Baun, Bernacki & Tsai, 1986).

A study by Norvell and Belles (1993) examined the relationship between exercise, circuit weight training, and job satisfaction. A group of 33 U.S. law enforcement personnel participated in an experimental three-phase study. During phase one, the participants received a health screening that consisted of a blood pressure check, assessment questionnaires,

such as the Perceived Stress Scale and the Job Descriptive Index, and pulse ratings. The experimental condition was comprised of a 16-week circuit weight-training program that involved three sessions a week that lasted for 20 minutes. The control group received no treatment. The last phase, a posttreatment evaluation, reassessed each participant on the assessment questionnaires and health screening. The results indicated that the experimental group had increased levels of job satisfaction, but the control group did not (Norvell & Belles, 1993).

Organizations also may use wellness programs as a recruitment tool, but no evidence has demonstrated that it works. Recruitment and retention have never been more important to organizations. It has been estimated that by 2010, over 40% of public sector employees will be eligible for retirement (Cowan, 2002). As a result, organizations must be competitive when selecting and retaining talented workers. In order to attract and retain employees, organizations have turned toward the implementation of wellness programs to create a healthy work environment and as an additional employee benefit (Bachmann, 2002). The Families and Work Institute surveyed over 1,000 U.S. organizations about their practices, programs, and benefits for the 2005 National Study of Employers (NSE; Bond, Galinsky, Kim, & Brownfield, 2005). It was determined that 47% of organizations reported that recruitment and retention were the main reasons for the implementation of work life programs such as wellness (Bond et al., 2005). Thus, organizations, as well as employees and potential employees, view organizational wellness programs as an employee benefit contributing to the attraction of potential employees to an organization and the job satisfaction, and ultimately, retention of current employees.

The literature indicates that organizations that strive to promote a "caring" climate and thus improve employee job satisfaction and retention fund wellness programs (Burton, 2004; Griffiths, 1996). To examine the empirical evidence for this proposition, job satisfaction was also examined in the current meta-analysis.

Method

Literature Search

The literature search involved three steps. First, we searched four electronic databases: Info Trac, ProQuest, PsycINFO, and Dissertation Abstracts International to find published and unpublished studies that evaluated organizational wellness programs. Multiple search terms were utilized including: wellness, organizational

health, job satisfaction, and absenteeism. Second, we examined the reference sections of retrieved studies to identify additional studies. Third, we consulted organizational publications and websites to identify any missed studies. The complete search yielded less than two hundred articles and dissertations that focused on wellness programs. However, only a small fraction of the articles examined the variables of interest: absenteeism and job satisfaction.

Inclusion Criteria

Studies that were considered for inclusion in this meta-analysis were any empirical published or unpublished articles and dissertations from 1980 to 2005 that evaluated on or offsite organizational wellness programs and provided data on absenteeism and/or job satisfaction. The rationale for the decision to exclude articles earlier than 1980 is twofold. First, organizations that implemented wellness programs did so primarily during the 1970s in which the duration of the programs usually carried over until the 1980s (Wolfe et al., 1994). As a result, the accompanying studies were published in the 1980s. Second, many organizations did not adopt wellness programs that examined our variables of interest until the late 1970s (Wolfe et al., 1994).

We identified 98 published research reports and four dissertations in which an organizational wellness initiative was evaluated relative to absenteeism and/or job satisfaction. The relevant studies consisted of two themes, large corporate intervention studies, and controlled studies. The large corporate studies involved large-scale wellness programs that were implemented to contain a cost, typically because of work lost. These programs usually involved several areas of wellness comprised of physical, psychological, and informational components. The goal of these studies was a large-scale assessment of the overall success of the wellness initiative. The controlled studies differed in that they involved fewer subjects, mostly fewer than 75. These studies primarily had an experimental focus in which participants were randomly placed into an exercise or a control group, and the findings were compared across time and against groups.

An article was included in the meta-analysis if (a) the study was conducted during the years of 1980–2005, (b) it compared participation versus nonparticipation in an organizational wellness program, (c) the outcome variables examined included absenteeism and/or job satisfaction, and (d) the study reported the necessary empirical data, (i.e., subject totals, means, standard deviations, *t* test, *t*-values, or *p* values).

A total of 17 studies met the inclusion criteria for the meta-analysis (15 published studies and 2 dissertations) yielding 7,705 individuals with absenteeism data and 2,480 individuals with job satisfaction data. Studies were excluded because job satisfaction or absenteeism were not measured, there was no control (nonparticipant) group, data necessary to compute effect size was not reported, and/or the sample was a subset of, or overlapped with, a larger sample used in another study that was included.

Study Coding

Information such as the type of wellness program (comprehensive or fitness only), sample size, research method (quasi experiment, experiment), type of control group (self selection into participant group, control group allowed to participate after study was completed), group equivalence tested with pretest, physician oversight of program, location of program (on site, off site, both), and whether the program was tailored for the organization were all coded. For the outcome variables the following were coded: type of absenteeism measure (involuntary, voluntary plus involuntary, or not reported), type of job satisfaction measure, and reliabilities. Studies were also coded for their level of methodological rigor. A study was deemed to have high rigor if it controlled for pretest differences, reported the reliability of the job satisfaction measure or the method in which absenteeism was calculated. A study was coded as having low rigor if it did not utilize any of these aspects. Data from all studies was coded by at least two coders. After independently coding all studies, the coders discussed discrepancies and came to 100% agreement on all codes. The characteristics of studies included in the meta-analysis are found in Table 1.

Meta-Analytic Procedures

The meta-analytic procedures outlined by Lipsey and Wilson (2001) were followed. For each study that passed the review criteria, a standardized mean difference effect size was calculated. The effect size is a measure of the overall effect of the intervention and is calculated from various statistical data: means, *t* test, correlations, and *F* values. In this case, the effect size provided an estimate of the size of the treatment effect (participation in a wellness program) as compared to the control group (non participation in a wellness program) and was calculated using the *d* statistic. To reduce the effect of sampling error, the effect size was weighted by sample size which re-

Table 1
Characteristics of Studies Included in the Meta-Analysis

Study characteristics	Number of studies with the characteristic ^a	Percentage of studies with the characteristic (%)
<i>N</i> size minimum/maximum		
<i>N</i> minimum = 41		
<i>N</i> maximum = 3,751		
Assignment to conditions		
Random	2	13
Based on pre-screening	1	7
Volunteer	9	60
Not reported	3	20
Research method		
Quasi-experiment	8	53
Experiment	1	7
Longitudinal	4	27
Other	2	13
Type of control group		
No treatment due to experimental design	3	20
No treatment for study, allowed subsequent participation	2	13
No treatment due to quasi design or self select	8	53
Other	2	13
Group equivalence tested with pre-test		
Some pre-test differences	4	27
No pre-test differences	6	40
Did not report	5	33
Type of wellness program		
Educational only	2	13
Fitness only	8	53
Comprehensive	5	33
Physician oversight		
Yes	3	20
No	10	67
Did not report	2	13
Location of wellness program		
On site	7	47
Off site	4	27
Both	1	7
Did not report	3	20
Program was tailored for organization		
Yes	5	33
No	7	47
Did not report	3	20
Measures		
Type of absenteeism		
Involuntary	5	33
Voluntary and involuntary (combination)	2	13
Not reported	3	20
Type of job satisfaction measure		
Validated scale	7	47
Reliability reported	3	20
Methodological rigor		
Job satisfaction studies		
High rigor	3	43
Low rigor	4	57
Absenteeism studies		
High rigor	5	50
Low rigor	5	50

Note. ^a Max = 15 (some studies examined more than one variable of interest).

sulted in the adjusted effect size presented in Table 2 for each study (Lipsey & Wilson, 2001). This procedure gives more weight to effect sizes derived from larger samples and thus least susceptible to sampling error. Although Hunter and Schmidt (2004) recommend making adjustments for artifacts such as unreliability of variables and range restriction, we did not correct for these artifacts since the information needed to make these adjustments were not available in most of the studies. We also computed 95% confidence intervals for the sample weighted mean d to assess the accuracy of the estimate of the mean effect size. The confidence interval gives the range of values that the mean effect size is expected to fall within if other sets of studies were taken from the population. If a nonzero relationship is expected, a desirable confidence interval does not contain zero.

We attempted to examine whether type of wellness program and methodological rigor of the study contributed to the variability of effect sizes of the impact of wellness programs on absenteeism and job satisfaction. Because many studies did not provide complete infor-

mation, these were the only two moderators examined in the current study. There are two rules of thumb which can be utilized to determine if moderators should be examined. A wide confidence interval around the sample-weighted mean would suggest the presence of moderators. In addition, the homogeneity analysis test or Q-statistic was examined for both absenteeism and job satisfaction. The Q-statistic determines if the effect sizes are estimating the same population mean (Lipsey & Wilson, 2001). To examine the moderators, the studies were partitioned into subsets representing the categories of the moderator variable chosen (e.g., high vs. low methodological rigor). The relative size of the effect sizes for the two categories was examined.

Results

Fail-Safe Analyses

The fail-safe N calculation was applied in order to combat the file drawer problem. The file drawer problem is the notion that meta-analyses may be

Table 2
Effect Sizes and Other Study Detail for Studies Included in Meta-Analysis

Author	N	Industry	Absenteeism/job satisfaction measure	Effect size (adjusted for sampling error)
Absenteeism				
Lechner et al. (1997)	530	Police, chemical, banking	Involuntary	.29
Baun et al. (1986)	517	Automotive	Both	-.20
Horowitz (1987)	41	Federal Highway Administration	Involuntary	.24
Bell & Blanke (1989)	216	Transportation	Not available	.09
Daley & Parfitt (1996)	209	Food	Not available	-.80
Kerr & Vos (1993)	76	Banking	Voluntary	-.50
Tucker et al. (1990)	3,751	Unknown	Involuntary	-.30
Guerra (1989)	102	Education	Both	-.51
Reed et al. (1986)	1,237	Medical	Not available	-.66
Wood et al. (1987)	1,026	Food	Involuntary	-.33
Total	7,705			-.30
Job satisfaction				
Daley & Parfitt (1996)	209	Food	1 item, Warr, Cook, & Wall (1979)	.58
Guerra (1989)	102	Education	Brayfield-Rothe Index	.09
Bonner (1991)	45	Insurance	Minnesota Satisfaction Questionnaire—Short Form, 5-point Likert scale	.41
Nurminen et al. (2002)	260	Laundry	Job in general scale	.16
Peterson & Dunnagan (1998)	1,272	Education	(Balzer, et al., 1990)	.11
Groningsaeter et al. (1992)	52	Insurance	Facet-specific satisfaction (Quinn and Staines)	.81
Halfon et al. (1990)	540	Pharmaceutical	Scale unknown	.24
Total	2,480			.42

biased because of the overuse of published literature (Orwin, 1983). Normally, unpublished data is overlooked, and this may result in sampling bias since unpublished literature may contain nonsignificant or inconclusive findings. To combat the problem, a calculation can be computed to determine the number of studies needed to achieve a specified effect size. For this fail-safe *N* estimate, a small effect size $d = .20$ was used (Cohen, 1969). It was determined that a $d = .20$ is met with an *N* of 4 for absenteeism and 7 for job satisfaction (Orwin, 1983). Fortunately, this meta-analysis had an *N* of 10 for absenteeism and an *N* of 7 for job satisfaction, thus meeting the fail-safe *N* requirement.

In regards to the moderator variables, wellness program type and methodological rigor, the fail-safe *N* for a small effect size $d = .20$ was again used (Cohen, 1969). For absenteeism a $d = .20$ is met for type of wellness program with an *N* of 4 and for methodological rigor with an *N* of 5. However, for job satisfaction the fail-safe *N* for methodological rigor was 6 and therefore did not meet the fail safe criteria of 7 for job satisfaction. Although we conducted a moderator analysis for methodological rigor, we do urge caution when interpreting these results.

Absenteeism

The first objective of the present meta-analysis was to assess whether there were differences in absenteeism for wellness program participants versus nonparticipants. Sample sizes and effect sizes adjusted for sampling error for the studies included in this meta-analysis can be found in Table 2. The mean effect size was $-.30$ ($p < .00$) with a confidence interval of $-.48$ to $-.22$. Through the use of the effect size variable and the inverse variance weight variable a SPSS macro was used to calculate the *p* value. The results indicate that participation in an organizational

wellness program was associated with lower absenteeism. This effect size is considered low to moderate based on Cohen's "rule of thumb" (Cohen, 1969). The *Q* statistic was significant ($Q = 16.94, p < .05$), so a potential moderator was examined.

The type of wellness program, fitness-only versus comprehensive, was examined as a moderator. Although there was a notable difference in effect size for fitness-only versus comprehensive wellness programs, both confidence intervals contained zero. Therefore, we cannot conclude that the type of wellness program was a moderator (see Table 3). Methodological rigor was also investigated as a moderator of the wellness program participation-absenteeism relationship. Once again, both confidence intervals contained zero suggesting that methodological rigor is not a moderator. Other potential moderating relationships were not examined because of a lack of consistent data across the studies.

Job Satisfaction

The second objective of the present meta-analysis was to examine the impact of wellness program participation on job satisfaction. For job satisfaction, the mean effect size was moderate (Cohen, 1969; $d = .42, p < .03$) with a confidence interval of .05 to .80, indicating those participating in wellness programs tended to report higher job satisfaction. The *Q* statistic was significant ($Q = 16.52, p < .01$), suggesting the presence of moderators. Therefore, methodological rigor was examined as a moderator. The effect sizes for studies with low rigor versus studies with high rigor are very similar, and the confidence interval contains zero for high rigor studies, indicating high methodological rigor is not a moderator of the relationship between wellness program participation and job satisfaction (see Table 4). However, the confidence interval for low rigor studies did not include zero suggesting a possible affect, but the fail-

Table 3
Moderator Analysis for Absenteeism, Type of Wellness Program and Methodological Rigor

Variables	Effect size (adjusted for sampling error)	Confidence interval lower bound	Confidence interval upper bound	<i>p</i> -value
Type of program				
Fitness only	-.14	-.52	.25	.50
Comprehensive	-.50	-1.00	.02	.06
Methodological rigor				
High rigor	-.28	-.66	.10	.15
Low rigor	-.07	-1.50	1.40	.92

Table 4
Moderator Analysis for Job Satisfaction, Methodological Rigor

Methodological rigor	Effect size (adjusted for sampling error)	Confidence interval lower bound	Confidence interval upper bound	p-value
High rigor	.44	-.22	1.00	.19
Low rigor	.40	.09	.70	.01

safe *N* was not met for this moderator, thus the results must be taken with caution. Other potential moderating relationships were not examined because of a lack of consistent data across the studies.

Discussion

The primary objective of this study was to examine the relationship between participation in organizational wellness programs and the outcomes of absenteeism and job satisfaction. According to the American Institute of Stress, organizations lose roughly \$300 billion dollars a year because of absenteeism, turnover, workplace stress, and health care costs (Stambor, 2006). To combat these costs, organizations have resorted to the implementation of organizational wellness programs. Although organizational wellness programs have been proposed to produce benefits such as decreased absenteeism and increased job satisfaction (Conrad, 1987), some previous research has produced conflicting or nonsignificant findings (Donaldson, 1993; Rudman & Steinhardt, 1988). The results of this meta-analysis indicated that participation in an organizational wellness program overall was associated with lower absenteeism rates and higher job satisfaction.

Our results indicated that those who participated in organizational wellness programs tended to have lower absenteeism rates than those who did not participate. These results support the general assumption that employees who participate in wellness programs are healthier and thus less likely to incur sickness-related absences. This assumption, however, only relates to those individuals who stay away from work for medical reasons. Type of wellness program was not a moderator of this relationship. This result is reassuring in that we expect fitness programs to improve health and thus reduce absenteeism, and we also expect comprehensive programs to not only improve health but offer educational programs to prevent employee health issues, also reducing absenteeism.

We also found that participation in wellness programs was associated with higher job satisfaction.

Three lines of reasoning support these findings. First, the existence of a wellness program may indicate to employees that their employer values them and cares about them, thus impacting employees' views of POS. POS has been linked to improved affective reaction to the job and job satisfaction (Rhoades & Eisenberger, 2002). Organizational support has been shown to be positively related to job satisfaction perhaps because it meets the socioemotional needs of employees and indicates the organization supports employees (Rhoades & Eisenberger, 2002). For instance, Rudman and Steinhardt (1998) conducted a study using employees of Continental Oil Company located in the United States. Through the use of questionnaires it was concluded that 85% of the participants found that the wellness program signified organizational commitment on the part of Continental Oil Company toward the employees. Further, employees indicated that the presence of the organizational wellness center was associated with a more favorable work culture. Several employees noted that the center improved the overall attitudes of the employees and even made them think more highly of the organization (Rudman & Steinhardt, 1998).

Second is the assumption that wellness programs are attractive to employees and thus useful as recruiting and retention tools. In particular, employees who value physical fitness may be more likely to be happy with an organization that provides wellness opportunities and thus more satisfied with their job and less likely to leave the organization (Falkenberg, 1987). Employees considering comparable job opportunities often evaluate characteristics of the work condition in order to make their decision. We suspect an employee who values physical fitness and good health may be more likely to choose a company offering a wellness program over one that does not. This is an area that would benefit from additional research.

Third, exercise and physical fitness have been shown to be related to reduced stress levels (Iwasaki, Zuzanek, & Mannell, 2001) which in turn impact personal well-being and job satisfaction (Wood, Olmstead, & Craig, 1989). Organizations have been

concerned with employee stress because research has shown that stress can impact work performance, productivity, turnover, job satisfaction, and absenteeism (Falkenberg, 1987). Organizational wellness programs are thought to reduce stress by improving the health of employees and providing educational programs to help employees cope with stress at work (Aldana et al., 2005).

Given the lack of data reported in many of the primary studies in this area, we decided to examine methodological rigor as a moderator. However, rigor was not a moderator for absenteeism or job satisfaction. Our review of the literature suggests that although the impact of wellness programs has been studied empirically, more research could be done in this area. We urge researchers to adhere to the guidelines for high quality evaluation research, as well as to report key study details such as scale reliabilities, means, standard deviations, and whether or not participant and nonparticipant groups differed on characteristics such as gender, previous physical activity, previous absenteeism, and prior health screen results.

Our results, suggesting that wellness programs reduce absenteeism and improve employee job satisfaction, support their use in organizations. However, organizations incur substantial cost when implementing and running wellness programs. Are the costs worth the benefits, particularly when other strategies might achieve the same results with less cost? For instance, organizations frequently use flexible hours, job rotation and enrichment, and education as solutions to curb the financial costs associated with high absenteeism and low job satisfaction (Mahoney, Gallina, & Jeffrey, 1982). Despite the cost associated, many organizations are drawn to wellness programs because they help to eliminate the underlying problem which is that poor health leads to higher absenteeism and lower job satisfaction (Faragher, Cass, & Cooper, 2005). Wellness programs, particularly comprehensive wellness programs encompass prevention, education, and personal responsibility. Other less expensive interventions do not address these underlying issues. For instance, GlaxoSmithKline implemented a comprehensive wellness program as a preventative measure. After the implementation of the program, GlaxoSmithKline saved \$5.5 million dollars over a four-year period making the program costs worth the long-term financial savings (Stave, Muchmore, & Gardner, 2003). Given the wide confidence intervals in the current meta-analysis, practitioners should be conservative in their estimate of the amount of gain associated with organizational well-

ness programs as interventions aimed at reducing absenteeism and improving job satisfaction.

Organizations are able to reap the benefits associated with wellness programs without having to install an onsite fitness facility (Kossek, Ozeki, & Kosier, 2001). As a way to reduce costs, organizations can offer discounts to local fitness centers or even offer online wellness courses. The Washoe County School District located in Nevada offered 11 different wellness programs online (Aldana et al., 2005). The program resulted in Washoe County School District saving \$15 for every dollar spent on the program (Aldana et al., 2005).

In terms of limitations, only a small number of studies reported sufficient statistics such as subject totals, means, standard deviations, *t* test, *r*-values, or *p* values necessary to be included in the meta-analysis. Therefore, several relevant studies were excluded simply because they did not report the necessary data. Another potential limitation was the majority of the studies used a quasi-experiment design, 8 (53%) of the 15 studies evaluated volunteers who participated in wellness programs. Therefore, the studies may have investigated individuals who otherwise are physically active, and as mentioned previously many primary studies did not discuss the equivalence of their participant and nonparticipant groups.

We believe that a more comprehensive model of wellness program implementation and participation would be useful to guide subsequent research in this area. Of particular interest is participation in such programs. Researchers need to begin to answer the questions why do employees participate in wellness programs and why do employees not participate. Both individual factors (motivation to exercise, past experience with wellness programs, dispositional characteristics) and organizational factors (supervisor support, coworker perceptions, organizational climate) play a role and should be investigated to better understand participation and what steps organizations can take to encourage participation. We suggest that future research examine variables such as incentives for participating in wellness programs, perceived organizational support, and work-life balance.

The results of this meta-analysis help to clarify the relationship between organizational wellness programs and absenteeism and job satisfaction. The findings of this study indicate that participation in an organizational wellness program was associated with lower absenteeism and higher job satisfaction. Although the effect sizes are moderate, there is some

evidence to support the continued use of wellness programs in organizations.

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