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The effect of using a workplace fitness center on employees' nutrition and fitness behaviors

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THE EFFECT OF USING A WORKPLACE FITNESS CENTER ON EMPLOYEES' NUTRITION AND FITNESS BEHAVIORS

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MASTER OF SCIENCE
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Abstract

In an increasingly difficult environment to eat right and exercise and in light of various studies conducted concerning the benefits of workplace wellness programs, this study focuses on fitness and nutrition behaviors demonstrated by employees at an energy company. It researches whether users of a workplace fitness center (WFC) tend to demonstrate healthier behaviors than those of non-WFC users. Data were collected via online surveys and in-person interviews. The findings generated from this research project did not show differences in fitness or nutrition behaviors for the two groups, with one minor exception whereby WFC users tend to walk to speak to colleagues more frequently as compared to non-WFC users. Employees also discussed a variety of fitness and nutrition interventions. These interventions were provided by the company in the form of policies and benefits or resulted from an environment where colleagues influenced each other's fitness and nutrition behaviors.

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The author wishes to express sincere appreciation to Dr. Ann Feyerherm for her assistance in the preparation and feedback of this manuscript. Thanks also to Dale for your encouragement and support on behalf of the Company. I wish you all the best in retirement.

Thank you Dave for your unending encouragement and helping me put things into perspective. Thank you Mimi for loads of laughs.

I dedicate this work to Ashton Hollis, who I lost while writing this paper. Although I never met you, I will always love you.

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Chapter 1

Introduction

In the World Health Organization's report, *Healthy Workplaces: A Model for Action*, Dr. Maria Neira, the Director of the Department of Public Health and Environment states, "The wealth of business depends on the health of its workers" (2010, p. ii). Studies suggest that healthier employees tend to be more productive employees with lower absenteeism rates (Falkenberg, 1987). Physical activity in particular is an important factor in overall health enhancement (Schwetschenau, O'Brien, Cunningham, & Jex, 2008). It can produce long-term health benefits and regular physical activity reduces the risk of many adverse health outcomes (U.S. Department of Health and Human Services, 2008). In the workplace, fitness programs can have positive effects for both the employee and the employer (Voit, 2000). Amenities like a workplace fitness center (WFC) have also been shown to help attract and retain employees by enhancing the overall employee value proposition (Falkenberg, 1987).

In 2009–2010, 35.7% of U.S. adults were obese (Ogden, Carroll, Kit, & Flegal, 2012). Dietary intake is one side of the calorie balance equation that factors into the obesity epidemic while the other is physical activity. Many people today need to make a special effort to be physically active because of the obesogenic environment in which they live (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). This obesogenic environment is characterized by promotion of overconsumption of calories and discouragement of physical activity and calorie expenditure (Jyothi, 2012). Furthermore, medical costs for people who are obese are $1,429 higher than those of

normal weight (Finkelstein, Trogdon, Cohen, & Dietz, 2009). In light of obesity trends, U.S. companies offering medical insurance are concerned about rising health care costs.

Workplaces are an ideal setting for fitness opportunities given that American adults are estimated to spend up to 30% of their time at work. The convenience and availability of a WFC virtually eliminates all the barriers to exercise discussed in related studies (Schwetschenau et al., 2008). We might expect that the employees who use the WFC make other healthy decisions throughout the workday. These employees' healthy behaviors could weave into the fabric of the organization, leading towards a healthier overall culture within the workplace.

Purpose of Research

This research study explores the impacts of WFCs in an Oil and Gas Company at three of its offices in Houston, Texas, U.S. Specifically, it asks the question:

RQ1. Does an employee who uses the worksite fitness center tend to demonstrate healthier behaviors throughout the workday than a non-fitness-center user?

Since employees have exercise options outside of the WFC, the study also examined several related questions:

RQ2. Do employees find other nutrition or fitness interventions in the workplace beyond the WFC to make a difference in their health factors?

RQ3. Do employees' fitness and nutrition behaviors influence their colleagues' behavior?

Importance and Significance of Research

Many companies, particularly high technology companies, started featuring WFCs at their facilities over a decade ago as part of their overall employee value proposition.

Rather than offering perks such as WFCs, large oil and gas companies tend to offer very strong compensation packages. The unique aspect of this study is the focus on employee fitness and nutrition behaviors as a result of having access to a WFC in a global energy company.

Not only will this study help the Company understand whether employees make healthier choices and demonstrate healthier behaviors as a result of using the WFC but it will also help the Company understand whether a WFC is a factor in creating behavior changes for all employees. The results of this study could provide insight into whether the Company should maintain WFCs at all of its locations in the U.S. or even globally based on its impacts to employees and the Company culture. The study could also be replicated to see if other activities impact employees' health and wellness outcomes as well as encourage a culture of health within the work environment. Finally this study could benefit other companies looking to enhance their employees' health and well-being.

Research Setting and Methodology

This study consisted of a mixed qualitative/quantitative methodology involving an online survey and individual in-person interviews. The 47 participants who completed the survey and the 11 who were interviewed were employees at a major oil and gas company. All participants work at one of three Company locations in Houston, Texas in the Human Resource skill pool. Participants' gender, age range, and work location were captured as basic demographics.

The surveys gathered data about WFC use as well as other fitness and nutrition behaviors chosen throughout the workday. Interview questions further assessed and gave

context to employees' workplace fitness and nutrition behaviors. The interviews also queried the influence of work colleagues' fitness and nutrition behaviors on each other.

Thesis Outline

Chapter 1 provides background on and introduces the topic. It highlights the research question as well as several related questions that the survey and interviews encompassed. Chapter 2 reviews existing literature that defines characteristics of healthy workplaces, benefits to employers and employees using workplace health interventions, features that influence success of workplace health interventions, and the role of social influence in the work setting. Chapter 3 introduces the research methodology. It outlines the research design and describes the measurements used. It also discusses the data analysis process. Chapter 4 presents the findings of the study. Chapter 5 discusses what the research findings may mean in a broader context for both other companies and how it adds to research on workplace fitness and nutrition.

Chapter 2

Review of Literature

The following chapter discusses the broad characteristics that comprise a healthy workplace. It then reviews the benefits achieved by employees and their employers when health interventions are employed in the workplace. Next, it examines numerous findings on barriers to workplace health interventions and recommendations on how to improve utilization of programs. Finally, the chapter describes the role of social influence in health-related behaviors in the workplace.

Characteristics of a Healthy Workplace

The World Health Organization (2010) provides a robust definition of a healthy workplace as one in which

> workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of the workplace by considering the following, based on identified needs: health and safety concerns in the physical work environment; health, safety and well-being concerns in the psychosocial work environment, including organization of work and workplace culture; personal health resources in the workplace; and ways of participating in the community to improve the health of workers, their families and other members of the community. (p. 6)

Often, companies with low rates of absenteeism are viewed as healthy workplaces (Arwedson, Roos, & Bjorklund, 2007). Companies that experience low health care costs could be considered as healthy workplaces as highlighted in the Wellness & Prevention, Inc. (2011) study. High workability rates or low workplace injury rates are also considered when evaluating the health of the workplace (Vingard et al., 2009). Royal Dutch Shell was awarded a Global Healthy Workplace Award in 2013 for its resilience program, a course aimed at enhancing employees' ability to cope with stress (Fraser & Lillington, 2013).

More closely related to this study, in Gallup Healthway's Well-Being Index, the Healthy Behavior domain measures lifestyle habits that have established relationships to health outcomes. The index includes smoking, eating healthy, weekly consumption of fruits and vegetables, and weekly exercise frequency (Gallup, 2009).

Although prevailing literature defines healthy workplaces differently, common characteristics can be identified. For example, a healthy workplace study of four different companies in Sweden presents results under four main categories: good work environment, active keep-fit measures, functional leadership, and individual responsibility (Arwedson et al., 2007). A study carried out for Shell Oil, Wellness & Prevention, Inc. recommended that in order to achieve a "Culture of Health" the following "benchmark pillars" would need to be included: Leadership and Commitment, Programming and Environment, Policy and Practices, Communications and Engagement, and Measurements and Outcomes (2012). Similarly, WHO identifies five key underlying principles of a healthy workplace initiative including leadership commitment and engagement; involvement of workers and their representatives; adhering to business ethics and legality; use of a systematic, comprehensive process to ensure effectiveness and continual improvement and sustainability and integration (Burton, 2010).

Benefits of Worksite Wellness Programs

Multiple studies suggest that worksite wellness programs can have positive effects on both employees and employers. In a study aimed at improving musculoskeletal fitness through use of a Tai Chi workplace physical exercise program, female computer workers achieved improved resting heart rates, decreased waist circumference and improved hand-grip strength (Tamim et al., 2008). In a 3-year study conducted in the Swedish social care

sector, results suggest that physical activities during paid working hours are effective investments to attain and maintain health and workability (Vingard et al., 2008). A further study conducted in Finland draws the conclusion that workplace fitness programs can support a company's intellectual capital. The authors used human capital, structural capital, and relational capital as components of intellectual capital, thereby using a "human" perspective of intellectual capital, rather than using a financial perspective. The authors continue by stating that a good workplace fitness program increases positive contacts between employees and customers and that a solid workplace fitness program brand will also support the image a company wants to create. Their data suggested that the role of a worksite fitness program was a way "to get to know people better." The authors explained, "Joint worksite fitness program events in connection with, for instance, project kick-offs will offer a good opportunity to develop personal relationships with customers and thus strengthen customer loyalty and the fluency of process type co-operation" (Aura, Ahonen, & Sveiby, 2008, p. 80). In another study whereby employees participated in 6-week outdoor exercise intervention, significant anthropometric, fitness, and psychological results were found (Christiansen, 2011). However, the author cautions the "time frame of this exercise intervention was not long enough for participants to intrinsically identify themselves as being physically active" (Christiansen, 2011, p. 40).

In Voit's review of 15 studies of employers' health and fitness programs, she concludes that employees participating in WFP have experienced positive changes including decreases in body fat, decreased pulse rates, heart rate, and blood pressure, weight loss, and general improvements in physical and emotional well-being. In addition to personal benefits, Voit (2000) found that participants also experienced increased job

satisfaction, decreased absenteeism, increased productivity, morale, and commitment to their company. Conversely, following a systematic review of literature on the effectiveness of physical activity programs at worksites, other authors found a limited effect on absenteeism, inconclusive effects on job satisfaction, job stress and employee turnover, and no effect on productivity (Proper, Staal, Hildebrandt, van der Beek, & van Mechelen, 2002).

Factors Influencing Participation in Workplace Health Interventions

Much research suggests how to enhance healthy behaviors of employees in the workplace. The results of a study on Thai female hospital nurses indicated that increased exercise participation is dependent on the nurses' perceptions of exercise, self-efficacy and social support as well as their motivation to participate in exercise (Kaewthummanukul, Brown, Weaver, & Thomas, 2006). Weight efficacy and exercise confidence were found to have a positive association with physical activity participation in the workplace in another study of African American women (Harris, 2010).

Similarly when the Guide to Community Preventive Service's methods were used for a systematic review of the various approaches to increasing physical activity, informational, behavioral, social, environmental, and policy interventions were found to be effective (Kahn et al., 2002). A 1998 study concurred that interventions such as supervised exercise, provision of equipment, and behavioral approaches in health care settings can increase physical activity (Simons-Morton, Calfas, Oldenburg, & Burton, 1998).

However, other studies debate the effectiveness of worksite interventions on healthy behaviors. One study cautioned that the typical worksite intervention had yet to demonstrate a statistically significant increase in physical activity or fitness (Dishman,

Oldenburg, O'Neal, & Shephard, 1998). In a paper that reviewed 19 studies concerned with changing the environment to promote health-enhancing physical activity, the authors again found that studies were insufficient in concluding the effectiveness of environmental changes in the workplace on healthy behaviors (Foster & Hillsdon, 2004).

Incorporating stair climbing in the daily work routine can be an easy way to expend more calories during the workday. Researchers have studied point-of-choice prompts, such as posters encouraging stair use that are located between the stairwell and an elevator or escalator. Eves and Webb (2006) caution that point-of-choice prompts to use stairs in the workplace may not be as effective as those used in public access areas, such as shopping malls. The authors reason that despite the location of the stairwell, in a worksite the choice is between the stairs and an elevator whereas in a public area, the choice is between stairs and an escalator. However, the same authors conclude in a later study that point-of-choice prompts encourage stair-climbing behaviors in the workplace (Eves, Webb, Griffin, & Chambers, 2012). Further, the most cost-effective strategies for physical activity were point-of-choice prompts (Wu, Cohen, Shi, Pearson, & Sturm, 2011).

Additional studies concluded that workplace wellness programs could achieve the maximum benefit by targeting high-risk populations. For example, one study found that detailed e-mail health messages may be an effective approach to assist employees who are at risk for chronic disease (Anenson, Brunt, Terbizan, & Christensen, 2012).

Another study affirms that the combination of different physical activities, namely Tai Chi and walking, may optimize and maximize exercise effects, especially for those who are physically active (Guo, 2010). Jyothi (2012) recommends in her study of environmental

physical activity and nutrition support of hospital worksites that cost effective policy changes that can increase environmental support to healthy eating and active living.

Dick and Lovelace (2012) find in their study that applying intentional change theory in worksite wellness programs can result in healthier workplace behaviors. Targeted specifically at obesity prevention, CDC's LEAN Works! Web-based tool showed that it can serve as a useful resource in the workplace. However, statistical data is not available concerning the results achieved by using the tool (Roemer et al., 2013)

Despite the literature suggesting multiple ways to encourage employees to participate in wellness activities in the workplace, barriers exist. In one systematic review of health interventions in the workplace, participation levels were less than 50 percent. The 23 health interventions studied varied from e-mails encouraging physical activity and a healthy diet to pedometer use, exercise competitions, health fairs, WFCs and more (Robroek, van Lenth, van Empelen, & Burdorf, 2009). At the three office buildings in Houston, Texas where this study took place, 45.3% of eligible employees chose to become members of the WFC in 2013. (Membership is free and requires only a brief safety orientation.) Furthermore, the average 2013 active participation rate of members was 56.7%. Active participation rate was defined as using the WFC at least once per month (Mark Poindexter, personal communication, February 8, 2014). Therefore only 25.6% of eligible employees actively use the WFC at the study organization.

Another study looking particularly at the use of a WFC finds that external environmental barriers and internal psychological barriers account for low utilization rates (Schwetschenau et al., 2008). The study, which used the Corporate Exercise Barriers Scale (C-EBS) to measure the impediments to fitness center use, indicated that internal barriers

such as embarrassment while exercising at the fitness center accounted for a variance in the number of visits to the fitness center, but not the duration of exercise or membership. External barriers, such as the inadequate facilities accounted for a variance in the duration of the visits, but not the frequency of the visits (Schwetschenau et al., 2008). Another study that also used C-EBS, concluded that time/motivation was the most common barrier participants encountered when using WFCs at their worksite (Wolfe, 2011).

In a 2010 study, barriers related to mental health, physical health and those related to time, stress, and social motivation were confirmed to influence the studied population of African American women (Harris, 2010). Another study identified that detailed action planning, perceived self-efficacy, and self-regulatory strategies may address the intention-behavior gap in the adoption and maintenance of physical exercise (Sniehotta, Scholz, & Schwarzer, 2005). Related to the action planning discussed in the Sniehotta et al. study, Harrison and Liska (2004) provide evidence that in order for goal setting to succeed as a program intervention, managers must concentrate on reducing the perceived work and health-related barriers to exercise participation and goal attainment.

Social Influence

As discussed in the previous section, motivation is a key factor affecting the use of on-site fitness centers (Wolfe, 2011). Furthermore, motivating individual employees to change health-related behaviors in a health promotion program is necessary for ensuring the program's organizational-level success (Terborg, 1986). Harrison and Liska (1994) state, "it is critical to identify how the basic components of fitness motivation vary in strength across individuals" (p. 48). Their study concludes that motivational principles applied in work performance contexts can also be applied in the context of organizational

fitness programs (Harrison & Liska, 1994). The authors specifically look to the fitness program manager to provide this motivation.

Various studies have found that social support was also a statistically significant predictor of exercise participation (Sternfeld, Ainsworth, & Quesenberry, 1999). Kaewthummanukul et al. (2006) reinforce this finding with their study on female Thai nurses. Kaewthummanukul et al. found that increased exercise participation is dependent on the nurses' perceptions of social support, among other variables.

In another study whose purpose was to understand the influence of the motivational climate perceived in peers and basic psychological needs (competence, autonomy, and relatedness) on self-determined motivation and enjoyment in exercise, Moreno Murcia, López de San Román, Martínez Galindo, Alonso, and González-Cutre (2008), found that a task-involving peer motivational climate positively predicted the three basic psychological needs. Moreno Murcia et al. (2008) summarized,

> In this environment [where the three basic psychological needs are satisfied], the subject will feel intrinsically motivated by the activity and he will do it for the sensation of enjoyment and well being it brings. Furthermore, knowledge of the peer group will enable parents, teachers and trainers to guide their actions to either strengthen the perceived climate…and thus increase self-determined motivation and the positive sensations felt during exercise and sport. (p. 29)

Summary

The literature review suggests that there are a wide variety of ways to define a healthy workplace. It generally concludes that workplace wellness programs, and more specifically, WFCs can have positive health impacts on employees and can lead to benefits for the company. Multiple recommendations have been explored concerning how to increase motivation and decrease barriers for employees' participation in workplace health interventions. Social influence plays a role in both motivation to exercise and enjoyment of

the activity. This study explores the healthy behaviors demonstrated throughout the workday as a result of using and not using a WFC. In addition, the study extends the existing research on healthy workplaces.

Chapter 3

Methodology

This chapter describes the methodology used for the research project. It begins by restating the research purpose, followed by a description of the study method.

Research Purpose

The purpose of this research was to explore whether use of a WFC influences other healthy behaviors during the workday. Extensive research has been conducted concerning effectiveness of workplace wellness programs, including a worksite fitness center. However, does an employee who uses the worksite fitness center tend to demonstrate healthier behaviors throughout the workday than a non-fitness-center user?

Research Design

Quantitative and qualitative data collection and analysis methods were used to test the study's hypothesis questions as well as draw conclusions about the related research questions. A quasi-experimental design was used for this research whereby two groups naturally occurring in the workplace were surveyed and interviewed; defined as employees who use the WFC and those who do not to test the study's hypotheses.

H1. Users of the WFC demonstrate healthier fitness and nutrition behaviors throughout the workday.

The survey data were collected via self-administered online questionnaires. The surveys gathered data about fitness center use as well as other fitness and nutrition behaviors chosen throughout the workday (see Appendix A). In-person interviews further assessed and gave context to employees' workplace fitness and nutrition behaviors (see

Appendix B). Both the survey and interview responses gave insight to another of the study's hypothesis.

H2. Employees find other nutrition or fitness interventions in the workplace beyond the WFC to make a difference in their health factors.

The interviews also queried the influence of work colleagues' fitness and nutrition behaviors on each other. The interview specifically asked the question related to the study's third hypothesis.

H3. Employees' fitness and nutrition behaviors influence those of colleagues.

Research Sample and Setting

The participants in the study were employees at a global group of energy and petrochemical companies. The participants were employed as Human Resource (HR) professionals and were located at offices in three different locations within Houston, Texas, U.S. All participants have equal access to a WFC at their location and have similar sedentary office jobs.

Table 1

Listing of Participant Locations and Number of Participants Surveyed and Interviewed

	No. of survey respondents = 47		No. of staff interviewed = 11	
Work location	Users of fitness center	Nonusers of fitness center	Users of fitness center	Nonusers of fitness center
Location A	16	11	2	2
Location B	3	2	3	0
Location C	7	8	1	3
Total	26	21	6	5

Administration

An email request was sent by the HR Managers of the HR teams located at the three work locations with WFCs to complete the online survey. The request outlined the purpose

of the study and provided the link for the online *Fitness and Nutrition in the Workplace* study. A total of 83 employees received the survey. Forty-eight members of the HR staff participated in the survey, yet one did not complete the survey and was therefore removed from the analysis for a final participant count of 47 or a 56.6% survey response rate.

Upon conclusion of the survey, participants were asked to volunteer to be interviewed for the study. Of the 47 employees who completed the survey, 28 agreed to participate in an interview. A purposive sample of a group of 15 employees were selected by the researcher to be interviewed based on diversity of their work location, gender, age group and fitness center usage. Four employees cancelled their interviews and a resulting 11 employees were interviewed for this study.

Data Analysis Procedures

The researcher began by analyzing the survey data, calculating mean scores. Data were reviewed based on demographics of the participants, including work location, gender, age group and use of WFC. SPSS software was then employed for more robust quantitative data analysis. For correlation analysis, the Spearman rho correlation was used given the nominal and ordinal nature of the data as well as the lesser restriction on assumptions (e.g. distribution, variance). For regression analysis and quasi-experimental group comparisons, the primary predictor variable of Use of the WFC and the outcome variables of Participation in the Be Well Program and Improved Health Behaviors were recoded to binary (0 = No, 1 = Yes). The secondary predictor variable of Age was recoded to binary as well (0 = age 35 or younger, 1 = age 36 or older). For regression analysis, Chi Square was used given the categorical nature of the variables. Where the expected value was less than 5, the Fisher's exact significance value was used as the final statistical significance result.

For analysis of variance, Mann Whitney or Kruskal-Wallis was used, depending on whether there were two groups or more than two groups being analyzed, given the data is generally nonparametric (i.e. does not assume normal distribution). Analysis of variance tests the fit of certain models. Therefore, the analysis of variance tests (i.e. Mann Whitney or Kruskal Wallis) are testing for a good fit of juxtaposing two variables. Therefore, when tests show a significant variance, although a causal relationship is not shown, the analysis illustrates that one variable was significantly affected by the other.

The interview data allowed for a richer data set in addition to the quantitative data collected in the survey phase. Findings provided insight as to the influences of workplace fitness and nutrition behaviors on employees. In addition, the survey results suggested the influence of employees' fitness and nutrition behaviors on each other.

Themes emerged from the interview data through content analysis, which were then analyzed. A second reader was used to review the data analysis for select interviews to determine reliability of the coding. The researcher compared the interview themes identified by the researcher and the second reader determining approximately 90% interrater reliability.

Research Methodology Summary

This chapter provided an overview of the research methodology consisting of the research design, purpose, and sample and setting. It then discussed the administration and the data analysis procedures. Chapter 4 provides an analysis of the collected data.

Chapter 4

Results

This research project explored whether users of the WFC tend to demonstrate healthier fitness and nutrition behaviors throughout the workday than non-WFC users. This chapter describes the data collection results and presents the findings of the study. The first section presents the quantitative data collected by an online survey. The second section presents the qualitative data collected during face-to-face interviews.

Quantitative Data Survey Findings

For the 47 employees who completed the survey, the descriptive statistics are shown in Table 2. Over half of those surveyed (57.6%) reported use of the WFC. Females represented 78.7% of the survey respondents. Just under half (46.8%) of the respondents were under age 35 and over half (57.4%) of the survey respondents worked at Location A.

Table 3 provides the gender demographics of the population that received the survey invitation. In the analysis of the survey data the primary predictor variable was defined as the Use of the WFC. The secondary predictor variables included location, age, and gender. The primary outcome variables were defined as Participation in Be Well Program, Improved Health Factors, Fitness Behaviors, and Nutrition Behaviors. The means by population of survey respondents (i.e., WFC user/nonuser, location, gender, and age) are illustrated in Figures 1-4. For each survey question, the higher the score the more frequently the employee practices healthy behaviors.

Table 2

Descriptive Statistics

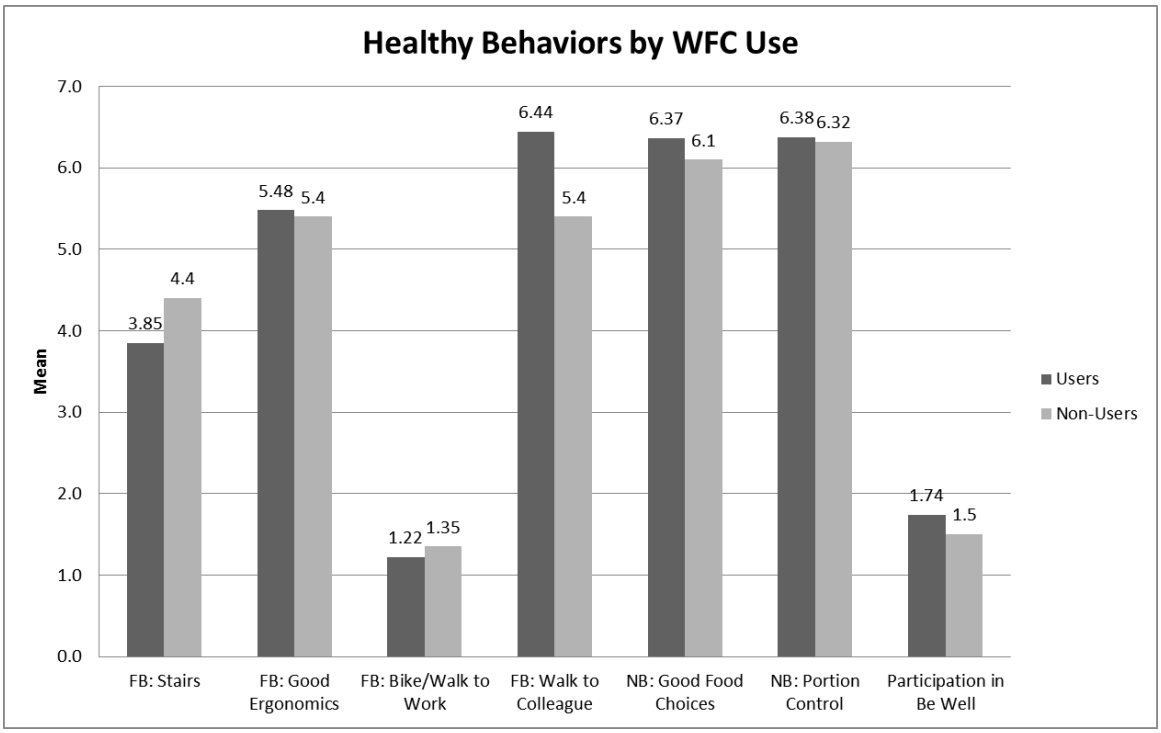
Variable category	*n*	% of sample
Gender		
Male (0)	10	21.3
Female (1)	37	78.7
Age		
25 or Under (0)	3	6.4
26 - 35 (1)	19	40.4
36 - 45 (2)	6	12.8
46 - 55 (3)	14	29.8
Over 55 (4)	5	10.6
Location		
Location A (0)	27	57.4
Location B (1)	5	10.6
Location C (2)	15	31.9
Use of WFC		
Never (0)	20	42.6
<1x / month (1)	9	19.1
1x / month (2)	0	0.0
2 – 3x / month (3)	7	14.9
1x / week (4)	4	8.5
2 – 3x / week (5)	6	12.8
Daily (6)	1	2.1
Health Factors Improved		
No (0)	5	10.6
Maintained (1)	21	44.7
Yes (2)	21	44.7
Participation in Be Well		
No (0)	5	10.6
Yes, but not every year (1)	7	14.9
Yes, annually (2)	35	74.5

Note. $n = 47$

Table 3

Survey Invitee Demographics

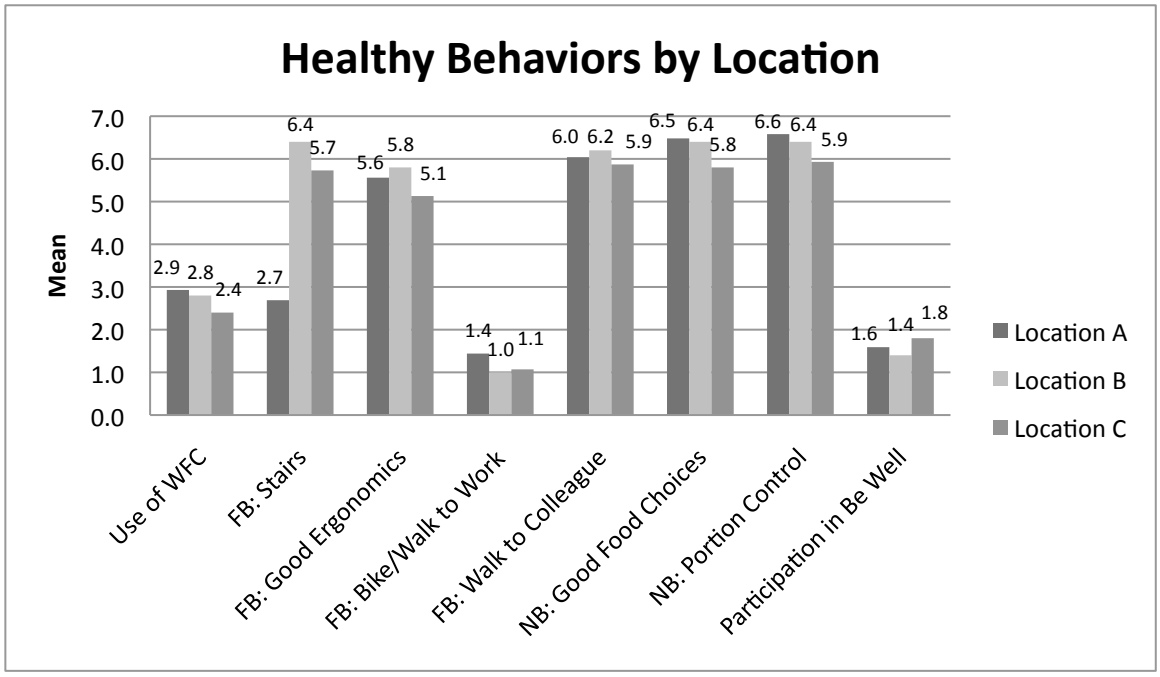
Gender	Location			Total
	A	B	C	
Male	12	4	7	23
Female	26	9	25	60
Total	38	13	32	83



n = 26 for WFC users, *n* = 21for non-WFC users. FB and NB mean scale: 1.0 = never, 2.0 = less than once a month, 3.0 = once a month, 4.0 = 2-3 times a month, 5.0 = once a week, 6.0 = 2-3 times a week, 7.0 = daily. Participation in Be Well Mean Scale: 1.0 = no, 2.0 = yes, but not every year, 3.0 = yes, annually.

Figure 1

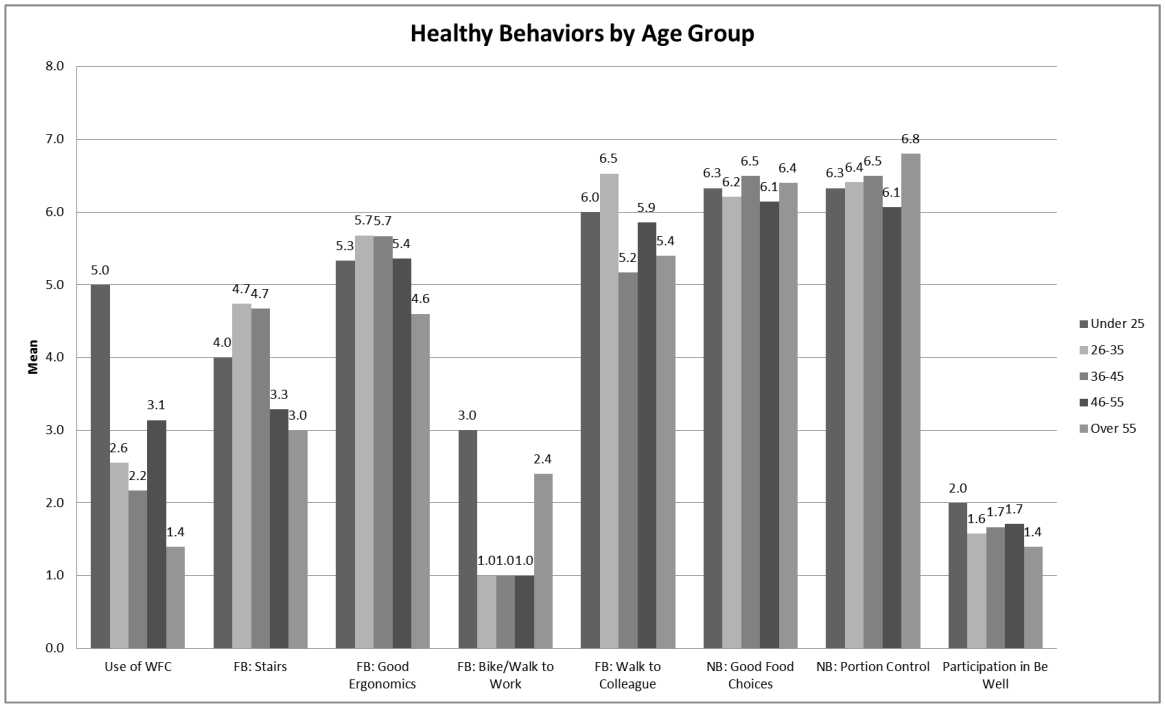
Healthy Behaviors by WFC Use



n = 27 for Location A, n = 5 for Location B, *n* = 15 for Location C002E. Use of WFC, FB and NB Mean Scale: 1.0 = never, 2.0 = less than once a month, 3.0 = once a month, 4.0 = 2-3 times a month, 5.0 = once a week, 6.0 = 2-3 times a week, 7.0 = daily. Participation in Be Well Mean Scale: 1.0 = no, 2.0 = yes, but not every year, 3.0 = yes, annually.

Figure 2

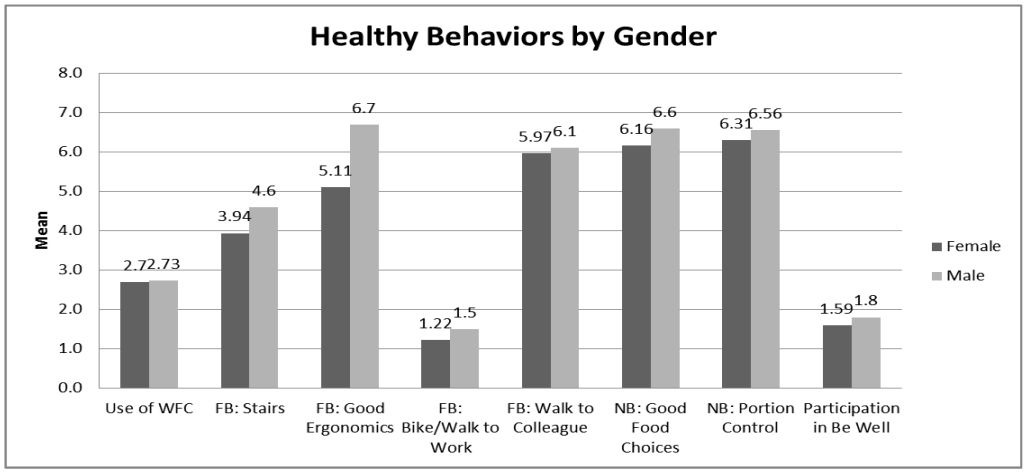
Healthy Behaviors by Work Location



n =3 for age under 25, *n* = 19 for age 26-35, *n* = 6 for age 36-45, *n* = 14 for age 46-55, *n* = 5 for age over 55. Use of WFC, FB, and NB Mean Scale: 1.0 = never, 2.0 = less than once a month, 3.0 = once a month, 4.0 = 2-3 times a month, 5.0 = once a week, 6.0 = 2-3 times a week, 7.0 = daily. Participation in Be Well Mean Scale: 1.0 = no, 2.0 = yes, but not every year, 3.0 = yes, annually.

Figure 3

Healthy Behaviors by Age Group



n=37 for female, *n* = 10 for male. Use of WFC, FB and NB Mean Scale: 1.0 = never, 2.0 = less than once a month, 3.0 = once a month, 4.0 = 2-3 times a month, 5.0 = once a week, 6.0 = 2-3 times a week, 7.0 = Daily. Participation in Be Well Mean Scale: 1.0 = no, 2.0 = yes, but not every year, 3.0 = yes, annually.

Figure 4

Healthy Behaviors by Gender

In order to test the hypothesis that users of the WFC demonstrate healthier fitness and nutrition behaviors throughout the workday, the researcher used chi square as a regression model. This test illustrated that there were no statistically significant dependent relationships between whether or not someone used the WFC (0 = No, 1 = Yes) and their fitness and nutrition behaviors. (χ^2 range from 1.333 to 7.132 with *p* values ranging from .261 to .668). Examining those who chose that they do have a health regime outside of work (i.e., of those who do not use the WFC) and those who do use the WFC, there was no statistically significant dependent relationship between whether or not someone used the WFC and their fitness and nutrition behaviors. (χ^2 range from 0.623 to 6.779 with *p* values ranging from .135 to 1.0). When looking at the population who did not use the WFC (i.e.,

responded “Never”), there were no statistically significant correlations between Fitness and Nutrition Behaviors and Improved Health Factors (*p* values ranged from .132 to .997). See Table 4.

Table 4

Healthy Behaviors of Non-WFC Users

Variable Category	Health factors improved
Health Factors Improved	
Correlation coefficient	1.000
Sig. (2-tailed)	
N	20
Fit Behvr_Stairs	
Correlation coefficient	-.348
Sig. (2-tailed)	.132
N	20
Fit Behvr_Ergonomics	
Correlation coefficient	.203
Sig. (2-tailed)	.390
N	20
Fit Behvr_Bike/Walk to Work	
Correlation coefficient	-.001
Sig. (2-tailed)	.997
N	20
Fit Behvr_Walk to Coworker	
Correlation coefficient	-.023
Sig. (2-tailed)	.924
N	20
Fit Behvr_Other	
Correlation coefficient	
Sig. (2-tailed)	
N	3
Nut Behvr_Food Choices	
Correlation coefficient	-.037
Sig. (2-tailed)	.878
N	20
Nut Behvr_Portion Ctrl	
Correlation coefficient	-.041
Sig. (2-tailed)	.868
N	19
Nut Behvr_Other	
Correlation coefficient	
Sig. (2-tailed)	
N	3

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

When Use of WFC was recoded to binary (0 = No, 1 = Yes) a correlation was found between Use of WFC and Fitness Behavior: walking to speak with colleagues (.290, p = .048). See Table 5.

Table 5

Healthy Behaviors of WFC Users (Where Use of WFC Is Binary: 0 = No, 1 = Yes)

Variable Category	Use Workplace Fitness Ctr
Use Workplace Fitness Ctr	
Correlation coefficient	1.000
Sig. (2-tailed)	
N	47
Age	
Correlation coefficient	-.053
Sig. (2-tailed)	.722
N	47
Gender	
Correlation coefficient	-.027
Sig. (2-tailed)	.858
N	47
Health Factors Improved	
Correlation coefficient	-.203
Sig. (2-tailed)	.171
N	47
Fit Behvr_Stairs	
Correlation coefficient	-.113
Sig. (2-tailed)	.454
N	46
Fit Behvr_Ergonomics	
Correlation coefficient	.007
Sig. (2-tailed)	.965
N	47
Fit Behvr_Bike/Walk to Work	
Correlation coefficient	-.049
Sig. (2-tailed)	.743
N	47
Fit Behvr_Walk to Coworker	
Correlation coefficient	.290*
Sig. (2-tailed)	.048
N	47
Fit Behvr_Other	
Correlation coefficient	.804
Sig. (2-tailed)	.054
N	6
Nut Behvr_Food Choices	
Correlation coefficient	.097
Sig. (2-tailed)	.516
N	47
Nut Behvr_Portion Ctrl	
Correlation coefficient	-.031
Sig. (2-tailed)	.839
N	45
Nut Behvr_Other	

Correlation coefficient	.544
Sig. (2-tailed)	.456
N	4
Participate in BeWell	
Correlation coefficient	.187
Sig. (2-tailed)	.208
N	47

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Location B also had a statistically significant correlation between Use of WFC and Participation in Be Well Program (.968, $p = .007$). However, the small sample size of Location B ($n = 5$) must be considered. See Table 6.

Table 6

Location B Correlations Between WFC Use and Healthy Behaviors

Variable Category	Use Workplace Fitness Ctr
Use Workplace Fitness Ctr	
Correlation coefficient	1.000
Sig. (2-tailed)	
N	5
Health Factors Improved	
Correlation coefficient	.323
Sig. (2-tailed)	.596
N	5
Fit Behvr_Stairs	
Correlation coefficient	0.000
Sig. (2-tailed)	1.000
N	5
Fit Behvr_Ergonomics	
Correlation coefficient	.304
Sig. (2-tailed)	.619
N	5
Fit Behvr_Bike/Walk to Work	
Correlation coefficient	
Sig. (2-tailed)	
N	5
Fit Behvr_Walk to Coworker	
Correlation coefficient	-.913*
Sig. (2-tailed)	.030
N	5
Fit Behvr_Other	
Correlation coefficient	
Sig. (2-tailed)	
N	0
Nut Behvr_Food Choices	
Correlation coefficient	-.167
Sig. (2-tailed)	.789
N	5
Nut Behvr_Portion Ctrl	
Correlation coefficient	-.167
Sig. (2-tailed)	.789
N	5
Nut Behvr_Other	

Correlation coefficient	
Sig. (2-tailed)	
N	0
Participate in BeWell	
Correlation coefficient	.968**
Sig. (2-tailed)	.007
N	5

* Correlation is significant at the 0.05 level (2-tailed).** Correlation is significant at the 0.01 level (2-tailed).

Continuing the analysis using the original categories of participating in the Be Well Program (i.e., No; Yes, but not every year; Yes, annually), there was no statistically significant dependent relationship between whether or not someone used the WFC and whether they participated in the Be Well Program ($\chi^2 = 1.651$, $p = .438$).

To test the second research question of whether employees find other nutrition or fitness interventions in the workplace beyond the WFC to make a difference in their health factors, a Mann-Whitney test was run between Use of WFC and Fitness/Nutrition Behaviors. The test surfaced one statistically significant difference between groups with respect to the Fitness Behavior: walking to speak with colleagues (.305, $p = .037$) as shown in Table 7. In other words, as the use of the WFC increased, the occurrence of walking to speak to colleagues increased.

Table 7

Intercorrelations of Key Predictor Variables and Primary Outcome Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Use of WFC	--											
2 Age	-.131	--										
3 Gender	-.044	.034	--									
4 Participation in Be Well	.136	-.158	-.166	--								
5 Improved Health Factors	-.073	-.051	-.017	.092	--							
6 FB: Stairs	-.103	-.154	-.107	.184	-.179	--						
7 FB: Good Ergonomics	.002	-.025	-.451**	.098	.014	.133	--					
8 FB: Bike/Walk to Work	.028	-.006	-.032	-.136	-.004	-.028	.095	--				
9 FB: Walk to Colleague	.305*	-.112	-.088	-.184	-.087	.066	.102	-.028	--			
10 FB: Other	.699	.302	.107	.000	.539	.045	.318	--	.366	--		
11 NB: Good Food Choices	.172	.121	-.206	-.035	-.013	.217	.289*	.047	.359*	.874*	--	
12 NB: Portion Control	.056	.129	-.072	.085	.004	.309*	.192	.010	.379*	.761	.643**	--
13 NB: Other	.544	.056	.272	-.816	--	-.816	-.943	--	.833	1.000*	-.272	--

Note. $n = 47$. WFC = Workplace Fitness Center. FB = Fitness Behavior. NB = Nutrition Behavior. FB: Other responses included taking walks at lunch/break. NB: Other responses included bring own lunch/meals and not drinking soda.
*$p < .05$. **$p < .01$.

When the results were reviewed by location, Location A was the only location showing the correlation between the Use of WFC and Fitness Behavior: walking to speak to colleagues (.526, p = .005). See Table 8.

Table 8

Location A Correlations Between WFC Use and Healthy Behaviors

Variable Category	Use Workplace Fitness Ctr	Age	Gender	Participate in BeWell
Use Workplace Fitness Ctr				
Correlation coefficient	1.000	-.220	-.065	.228
Sig. (2-tailed)		.270	.747	.252
N	27	27	27	27
Age				
Correlation coefficient	-.220	1.000	.095	-.130
Sig. (2-tailed)	.270		.637	.519
N	27	27	27	27
Gender				
Correlation coefficient	-.065	.095	1.000	-.114
Sig. (2-tailed)	.747	.637		.571
N	27	27	27	27
Participate in BeWell				
Correlation coefficient	.228	-.130	-.114	1.000
Sig. (2-tailed)	.252	.519	.571	
N	27	27	27	27
Health Factors Improved				
Correlation coefficient	-.040	-.227	.013	.016
Sig. (2-tailed)	.844	.255	.948	.937
N	27	27	27	27
Fit Behvr_Stairs				
Correlation coefficient	.099	.186	.040	.199
Sig. (2-tailed)	.630	.362	.846	.330
N	26	26	26	26
Fit Behvr_Ergonomics				
Correlation coefficient	.008	-.071	-.543**	.197
Sig. (2-tailed)	.968	.724	.003	.324
N	27	27	27	27
Fit Behvr_Bike/Walk to Work				
Correlation coefficient	-.063	.141	-.094	-.226
Sig. (2-tailed)	.757	.482	.640	.258
N	27	27	27	27
Fit Behvr_Walk to Coworker				
Correlation coefficient	.526**	-.082	-.052	-.062
Sig. (2-tailed)	.005	.685	.798	.760
N	27	27	27	27
Fit Behvr_Other				
Correlation coefficient	.500	.816	-.816	0.000
Sig. (2-tailed)	.500	.184	.184	1.000
N	4	4	4	4
Nut Behvr_Food Choices				
Correlation coefficient	.218	.054	-.305	.045
Sig. (2-tailed)	.275	.788	.122	.824
N	27	27	27	27
Nut Behvr_Portion Ctrl				

Correlation coefficient	.183	.049	.085	.221
Sig. (2-tailed)	.370	.813	.679	.279
N	26	26	26	26
Nut Behvr_Other				
Correlation coefficient	.544	.056	.272	-.816
Sig. (2-tailed)	.456	.944	.728	.184
N	4	4	4	4

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

No other correlational relationships existed between Use of WFC and Fitness or Nutrition Behaviors (p values ranged from .122 to .989). Additionally correlational relationships did not emerge between the Use of WFC and participation in Be Well program or Improved Health Factors. See Table 6. However, several statistically significant relationships appeared between certain Fitness and Nutrition Behaviors (e.g. between Fitness Behavior: stairs and Nutrition Behavior: portion control (.309, p = .041) and between Fitness Behavior: good ergonomics and Nutrition Behavior: making good food choices (.289, p = .049)). There was a statistically significant negative correlation between Gender and the Fitness Behavior: good ergonomics (-.451, p = .001), which suggested that males are more likely to demonstrate better ergonomics than females. See Table 7. A statistically significant negative correlation between Gender and the Fitness Behavior: good ergonomics also resulted at Location A (-.543, p = .003) as shown in Table 8 and Location B (-.913, p = .030) as shown in Table 9. Also at Location B, there was a statistically significant negative correlation between Participation in the Be Well Program and Fitness Behavior: walking to speak to colleagues (-.884, p = .047).

At Location C as shown in Table 10, there was a statistically significant negative correlation between Age and Fitness Behavior: walking or biking to work (-.518, p = .048). As respondents' ages increased, walking or biking to work decreased.

Table 9

Location B Correlations Between WFC Use and Healthy Behaviors

Variable Category	Use Workplace Fitness Ctr	Age	Gender	Participate in BeWell
Use Workplace Fitness Ctr				
Correlation coefficient	1.000	.132	-.592	.860
Sig. (2-tailed)		.833	.293	.061
N	5	5	5	5
Age				
Correlation coefficient	.132	1.000	-.444	-.057
Sig. (2-tailed)	.833		.454	.927
N	5	5	5	5
Gender				
Correlation coefficient	-.592	-.444	1.000	-.645
Sig. (2-tailed)	.293	.454		.239
N	5	5	5	5
Participate in BeWell				
Correlation coefficient	.860	-.057	-.645	1.000
Sig. (2-tailed)	.061	.927	.239	
N	5	5	5	5
Health Factors Improved				
Correlation coefficient	.516	-.229	0.000	.125
Sig. (2-tailed)	.373	.710	1.000	.841
N	5	5	5	5
Fit Behvr_Stairs				
Correlation coefficient	0.000	.803	-.645	.125
Sig. (2-tailed)	1.000	.102	.239	.841
N	5	5	5	5
Fit Behvr_Ergonomics				
Correlation coefficient	.270	.649	-.913*	.295
Sig. (2-tailed)	.660	.236	.030	.630
N	5	5	5	5
Fit Behvr_Bike/Walk to Work				
Correlation coefficient				
Sig. (2-tailed)				
N	5	5	5	5
Fit Behvr_Walk to Coworker				
Correlation coefficient	-.811	.433	.304	-.884*
Sig. (2-tailed)	.096	.467	.619	.047
N	5	5	5	5
Fit Behvr_Other				
Correlation coefficient				
Sig. (2-tailed)				
N	0	0	0	0
Nut Behvr_Food Choices				
Correlation coefficient	.148	.889*	-.167	0.000
Sig. (2-tailed)	.812	.044	.789	1.000
N	5	5	5	5
Nut Behvr_Portion Ctrl				
Correlation coefficient	.148	.889*	-.167	0.000
Sig. (2-tailed)	.812	.044	.789	1.000
N	5	5	5	5
Nut Behvr_Other				
Correlation coefficient				
Sig. (2-tailed)				
N	0	0	0	0

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 10

Location C Correlations Between WFC Use and Healthy Behaviors

Variable Category	Use Workplace Fitness Ctr	Age	Gender	Participate in BeWell
Use Workplace Fitness Ctr				
Correlation coefficient	1.000	-.371	.346	-.358
Sig. (2-tailed)		.174	.207	.190
N	15	15	15	15
Age				
Correlation coefficient	-.371	1.000	.163	-.217
Sig. (2-tailed)	.174		.562	.438
N	15	15	15	15
Gender				
Correlation coefficient	.346	.163	1.000	-.153
Sig. (2-tailed)	.207	.562		.585
N	15	15	15	15
Participate in BeWell				
Correlation coefficient	-.358	-.217	-.153	1.000
Sig. (2-tailed)	.190	.438	.585	
N	15	15	15	15
Health Factors Improved				
Correlation coefficient	-.298	.461	-.050	.156
Sig. (2-tailed)	.280	.084	.860	.578
N	15	15	15	15
Fit Behvr_Stairs				
Correlation coefficient	-.332	-.145	-.350	.093
Sig. (2-tailed)	.227	.607	.201	.742
N	15	15	15	15
Fit Behvr_Ergonomics				
Correlation coefficient	-.122	-.324	-.047	.012
Sig. (2-tailed)	.666	.239	.869	.965
N	15	15	15	15
Fit Behvr_Bike/Walk to Work				
Correlation coefficient	.236	-.518*	.105	.105
Sig. (2-tailed)	.398	.048	.710	.711
N	15	15	15	15
Fit Behvr_Walk to Coworker				
Correlation coefficient	.182	-.480	-.391	-.117
Sig. (2-tailed)	.517	.070	.150	.678
N	15	15	15	15
Fit Behvr_Other				
Correlation coefficient	1.000**		1.000**	
Sig. (2-tailed)				
N	2	2	2	2
Nut Behvr_Food Choices				
Correlation coefficient	.059	-.285	-.024	.038
Sig. (2-tailed)	.835	.303	.933	.893
N	15	15	15	15
Nut Behvr_Portion Ctrl				
Correlation coefficient	-.196	-.157	-.294	.044
Sig. (2-tailed)	.502	.593	.308	.881
N	14	14	14	14
Nut Behvr_Other				
Correlation coefficient				
Sig. (2-tailed)				
N	0	0	0	0

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Qualitative Data Interview Findings

A diverse group of 15 employees were chosen by the researcher to participate in the interviews. Four employees cancelled, resulting in 11 total interviews. Despite the cancellations, the demographics of the employees interviewed ranged in work location, age, gender, and use of the WFC. As shown in the table below, the average number of workouts per week as reported by the employees was greater for those who use the WFC as compared to those who do not use the WFC. See Table 11.

Table 11

Interviewee Demographics

Employees interviewed	Number of workouts per week	
	Use WFC	Do not use WFC
Employee 1		2.5
Employee 2	3.5	
Employee 3		1
Employee 4	5.5	
Employee 5	2	
Employee 6	5	
Employee 7	2.5	
Employee 8		1
Employee 9		3.5
Employee 10	6	
Employee 11		4.5
Average number of workouts/week[a]	4.1	2.5

[a]When interviewees responded with a range of number of workouts/week, the researcher averaged the number of times per week (e.g., 2–3 workouts/week = 2.5 workouts/week)

In support of the study's second hypothesis, the interviewees reported finding other nutrition or fitness interventions in the workplace beyond the WFC to make a difference in their health factors. Respondents named a number of fitness activities that helped enhance their movement throughout the workday. Many of the activities mentioned were related to those described in the study's survey. Interviewees reported taking the stairs instead of the

elevator in the office and parking garage, walking to talk with colleagues or clients, walking from cubicles in open space office environments to private rooms to have conversations, walking around the office building(s) or outside on trails, stretching, taking short frequent breaks, and scheduling workouts in the work calendar. Trends were not identified in any of the fitness behaviors for users of WFC versus nonusers. Several interviewees however, stated that in addition to increasing their movement, walking to speak with colleagues or clients results in better quality conversations.

A few interviewees mentioned that the Company provided standing desks. One interviewee reported the hurdles to implementing this specific health intervention.

> The person who used to be across from me had a sitting desk and she had it changed to a standing desk, and when I asked her how she managed that, she said it had to do with her back and recommendations they made. But they won't just do it for anybody. Then she had barriers to actually getting a chair for a standing desk. So it wasn't the easiest thing in the world to do, to request the standing desk and get it. (Interview 7, WFC)

Several employees also desired treadmill or stationary bike desks, however recognized the high cost of this alternative workstation furniture.

Various behaviors were reported that helped the interviewees make good food choices and control their portions. However no difference was apparent in the nutrition reporting of those interviewees who used the WFC versus those who did not. All but one of the 11 interviewees attributed his/her ability to make good food choices and control his/her portions to packing and eating his/her own lunch most days, if not every day.

> When I bring my lunch, I typically eat healthier because that's what I bring. I bring the healthy food and so there's no temptation to go outside of that. So typically I'll bring fruits and not too many fatty, starchy things in my food, and then I can measure how many calories I'm getting in that meal whereas if I go down to the cafeteria —I mean, they do have the calories on our menu boards down there. That's helpful, but it's almost a temptation of just getting whatever I want down there, whatever smells good at the time. (Interview 5, WFC*)*

> Eating in the lunchroom…I didn't really like it, but one good thing about it is it forces you to, I think, take the time and eat and not be doing work at the same time. It's actually better probably than working through lunch like I used to always do. Not being allowed to eat at my desk is annoying, but it causes me to snack less, so it actually works out probably for the better. I pause for lunch, which is probably healthier, and then I don't eat any snacks during the day. Or if I do, it's a conscious effort to eat a snack and I'll probably eat less because I don't want to sit in there too long, so I just sit in there for a few minutes and eat something really good, then go back to my desk. (Interview 2, WFC)

For those who occasionally ate in the workplace cafeteria, (Locations B & C have a workplace cafeteria, Location A does not), they enjoyed the healthy options offered but did not always choose the healthy options. Employees relied on single serving packages and lunch containers with measured portion sizes to help control the amount of food they ate. Others were grateful for free fruit in the common area at work and healthy choices (i.e. vegetables) served for lunch meetings.

> Our team has been very vocal about saying we want healthy stuff for meetings. The tendency in meetings, the cheaper thing most of the time is the sweets or pizza or stuff like that. I think our team is very conscious but they've requested from people who organize meetings...that they want vegetable trays or salads…It just helps when a good choice is provided. (Interview 7, WFC)

Interviewees also reported the nutritional difficulties they encounter during a workday. Leftover food found in the common areas drove many respondents to giving into temptation of an unhealthy snack. Although interviewees recognized that healthy choices are usually offered, they reported making unhealthy choices in the cafeteria, during catered meetings, and at vending machines.

> But there is a temptation that we do get a lot of times leftover meals from...workshops. That probably is the bigger temptation for me than the vending machine, when there is an abundance of food that is available and the company's just going to throw them away, so you partake to make sure it doesn't go to waste. (Interview 11, non-WFC*)*

The staff interviewed highlighted the multitude of incentives the Company provides to encourage staff to practice healthy behaviors. Every interviewee took advantage of the Be Well exam. Several found it beneficial. Several recognized the importance of "knowing your numbers."

> It's like a four- or five-hour sort of assessment, and it's wonderful. You get a battery of tests done. It was the session with the nutritionist that really kind of opened my eyes that basically, I was working out but I was essentially overweight and fit, if there is such a thing, because I was exercising every day. But it was the combination of nutrition and exercise that's made a difference. I dropped about 35 pounds. So I feel great, probably better than I have in 20 years. (Interview 4, WFC)

The health coaching that followed the Be Well exam was given mixed reviews by those who participated. The majority appreciated the discount on their health insurance premiums for partaking in the Be Well exam and for some; the health coaching gave a further discount. Some staff reported using the centers of excellence benefits for cardiac and cancer care. Most of the interviewees took advantage of the annual $250 wellness reimbursement to supplement his/her gym membership. Several staff would have preferred a larger subsidy to cover more of his/her annual wellness costs. One employee highlighted the Health Reimbursement Account (HRA) as a possible benefit but stated that it was not clear how to use it. Several interviewees suggested that a personal health related goal should be captured in employees' annual goals or development plans.

Just over half of the interviewees enjoyed the benefit of using the WFC. Even non-WFC users took advantage of the monthly fitness challenges or fitness checks offered by the WFC. One employee mentioned that the WFC needs to be able to accommodate the employee population at any particular work location. Another employee recommended that the fitness center be located in a more visible place.

> The gym is on the third floor so it's kind of "out of sight, out of mind" for a lot of people. If it was in a more prominent space where people walked by and saw it being used more, that might encourage more walk-in traffic. (Interview 6, WFC)

When the researcher probed further on what the Company could do to encourage and promote healthy behaviors in the workplace, several interviewees commented that it boiled down to personal accountability.

> This can very quickly become a broad conversation around what's the employer's role. Is the employer's role to keep you thin? I'm not sure that it is. I see this as a personal responsibility sort of thing. It's not a "Gee, I wouldn't be fat except my employer didn't do something for me." (Interview 1, non-WFC)

> We could always just take out all crap food at the cafeteria and only put good things in the vending machines. I just think you're taking away people's personal choices. I mean sometimes you want that. Sometimes you need it…Sometimes it gets you through the afternoon. I don't know. I think to go overboard with it would be a shame, but I think it's self-discipline. That's what we lack. (Interview 8, non-WFC)

Therefore, the researcher asked what kept the individuals feeling accountable and how did each motivate himself or herself?

The employees who had children (just over half of those interviewed) stated that they practiced healthy behaviors in order to be able to keep up with and be around for their children as they grow. All interviewed stated that they felt better when they ate well and exercised. Stress relief, better sleep, and improved concentration were specifically mentioned. Some added that looking good and fitting better in clothing was also a benefit. Others identified that when they exercised, they tended to make better nutrition choices. Finally, several employees feared what would happen to them if they did not practice healthy behaviors.

> I recognize that they do the surgery different now, but I think I've got this fear of being on the operating table and having my chest cracked open and then doing open-heart surgery. And so I think I recognize that surgical methods have improved, and they no longer have to cut your chest cavity, but it's much more motivating. (Interview 11, non-WFC)

Several techniques were shared that kept the interviewees motivated. Some would schedule races or other fitness competitions in their calendars to ensure they stuck to their training regime. One employee takes pictures of her progress and suggests her colleagues do the same. Several use technology to record their fitness activity and their food intake.

> I use an app on my iPhone, called *My Fitness Pal*. Those are the times when I've done the best, when I'm really aware of how much snacking I do and what it contributes at the end of the day in terms of calories. (Interview 7, WFC)

The interviewees distinguished a possible difference how the younger generation views nutrition and fitness.

> It's just kind of the sign of a new generation that has looked at health differently. I know in the'80s, there was a big boom, with health centers going up in corporate office buildings but I think this next generation is just really really concerned about health. The under-35 generations, which is generation X and Y, have more concern for what they consume and what they ultimately eat. So there's a big, huge fitness boom with cross-fit training now. A lot of people are really into that. (Interview 5, WFC)

Other employees noted that younger staff may be motivated differently as well.

> Recently I thought it was funny when people said, "You can't go to the gym and work out without posting that you are there." The results will be the same without posting that you're at the gym. (Interview 11, non-WFC)

In additional to personal motivation, social motivation was a factor that influenced fitness and nutrition behaviors, which lends support to the study's third hypothesis. Initially several of the interviewees responded that colleagues did not influence their fitness and nutrition behaviors but as each interview progressed, multiple influences were identified. A few employees worked with a personal trainer or trained at the gym with a friend. Knowing someone was waiting at the gym held him or her accountable. Some staff who had participated in the health coaching program appreciated being held accountable for his or her health by his or her health coach. One employee yearned for team-based activities in

the workplace knowing that this would be key to holding her accountable, mentioning healthywage.com for team weight loss and a marathon entry for team fitness. A couple of other staff were influenced by his/her manager practicing healthy workplace behaviors such as using the WFC and choosing healthy snacks.

When asked whether their behaviors influenced others or others' behaviors influenced theirs, many of the employees mentioned how just talking about what works or does not work for them from a health perspective helps to motivate and encourage themselves and others. A couple of interviewees mentioned their roles as Be Well Focal Points. Their role as an educator and communicator suggested that they could help influence others' behaviors. One employee opined that social media could be leveraged more to influence healthy behaviors in the workplace.

> It's kind of like the social media effect of recommending something or talking big about something. Whether it be good or bad, it's influential, so I think that influences me to some extent as well…I think if there's a way we can channel people's reactions and rate the classes in the fitness center and put it on the flat screen. (Interview 3, non-WFC)

Another employee mentioned how her sharing has motivated others.

> I also have an Instagram account. I post my foods. I post daily motivational things. I post my progress and the friends that are following with that, now it's grown. Last year, I want to say it was just my immediate friends, about 100. Now it's up to 600, almost 700. So it's growing with people that I don't even know that are looking to me for motivation and such. (Interview 10, non-WFC)

In addition, seeing others make poor choices or be affected by health concerns because of those choices influenced several individuals.

> Knowing friends and family that maybe have not done things healthwise, haven't eaten right, drank right, exercised, or gone even for the physical exam, just to catch something before it happened. Then five, ten years later, "Oh, I don't feel too well." Well, you've never been to a doctor. Of course. It's just those kinds of things in my life that I've seen. (Interview 9, non-WFC)

> I see people sitting around eating and drinking the wrong things, and just sitting in the chair getting bigger and bigger. (Interview 9, non-WFC)

Summary of Findings

This chapter reported the quantitative survey and qualitative interview findings of the overarching research questions. First, whether users of a WFC are more likely than non-WFC users to engage in other healthy behaviors during the workday was reviewed. Next, whether employees find other nutrition or fitness interventions in the workplace beyond the WFC make a difference in their health factors was researched. Finally, whether employees' fitness and nutrition behaviors influence those of colleagues was discussed.

Generally no notable statistically significant differences were found under multiple analyses. A Mann-Whitney test surfaced a statistically significant difference whereby as the use of the WFC increased, the occurrence of walking to speak to colleagues increased. Indirectly related to the study's questions, the results suggest that females tend to practice good ergonomics less often. In addition, there were several statistically significant relationships between certain Fitness and Nutrition Behaviors.

The interviews suggested that the WFC users achieved a greater number of workouts per week as compared to those who do not use the WFC. No other patterns were identified in any of the fitness or nutrition behaviors when comparing users of WFC with nonusers. All but one of the interviewees attributed healthy eating during the workday to packing his/her own lunch.

When attempting to understand whether employees who do not use the WFC find other nutrition or fitness interventions in the workplace beyond the WFC to make a difference in their health factors, there were no statistically significant correlations between

Fitness and Nutrition Behaviors and Improved Health Factors (*p* values ranged from .132 to .997). See Appendix C.

The interviews revealed multiple techniques used by employees to improve or maintain their fitness and nutrition behaviors. Many take advantage of the Company's offerings but several also point to themselves as the person accountable for their own health.

The third overarching research question could not be assessed by the survey results; rather the interviews suggested social influence played a part in healthy behaviors. Both colleagues demonstrating healthy behaviors and unhealthy behaviors appear to influence other colleagues. Similarly staff achieving good results and poor results also influence others in the workplace.

Chapter 5 will discuss the conclusions and implications of this research. It will also describe the study's limitations and offer recommendations for future research.

Chapter 5

Conclusion

This chapter provides a summary of the findings from this study. It discusses how the data can be used and future research possibilities. Next Chapter 5 comments on how the findings from this study add to the current literature related to this topic. Then, limitations of this study are reported. The chapter concludes with a summary.

Findings Summary

The results of this study generally did not show a difference in healthy behaviors for employees who use the WFC and those who do not, with one exception; those who used the WFC tended to walk to speak to colleagues more frequently than those who did not use the WFC.

There were no statistically significant correlations between other workplace fitness and nutrition interventions (e.g. using stairs, making healthy food choices) and Improved Health Factors. Had the survey questions been rephrased or paired with a brief introduction explaining the variety of fitness and nutrition behaviors employees choose in their workday, more insight into the relationship may have surfaced via the survey. This was evidenced when the researcher probed during the interviews and employees reported a wide variety of company-provided motivational tools as well as personal techniques used in the workplace to get or stay healthy. In addition, the findings suggest that employees' fitness and nutrition behaviors may influence those of colleagues. The physical results seen by colleagues also motivated employees to make certain fitness and nutrition choices. Aspects other than the WFC and social influence drove employees to make certain fitness and nutrition choices, namely being around for family and feeling good. Indeed the

findings suggested that staff practice healthy behaviors for very personal reasons. Similarly, the ways to motivate employees will differ for each individual.

Further Research

The findings of this study can be used by the Company in multiple ways. First, the Company should continue engaging in activities that motivate staff. For example, some employees take advantage of the WFC but others appreciate the flexibility to be able to take a walk during breaks. Many staff are motivated by fitness challenges whether or not they choose to use the WFC. The discount on medical insurance helps motivate employees to participate in the Be Well exam and subsequent health coaching. Concerning nutrition, participants in this study credited having healthy options available at meetings and in the Company cafeteria to help them meet their dietary goals. Even having a lunchroom to eat a homemade lunch was mentioned multiple times by study participants due to the fact that the employees believed eating his/her packed lunch helped them to avoid temptation of unhealthy food options.

Second, the Company should more clearly communicate health-related policies and benefits, such as how to obtain a standing desk or file an HRA claim. In communicating policies and benefits, the Company should continue customizing aspects of fitness and nutrition in the workplace for certain population segments (e.g. age groups). The newest generation in the workforce in this study appeared more interested in logging their last workout than their counterpart who was nearing retirement. Also the Company may want to consider adjusting benefits and policies that make healthy behaviors in the workplace difficult. For example, a policy could be implemented prohibiting leaving unhealthy

leftover food in the kitchen. Or, if treadmill or stationary bike workstations are too expensive, provide a few alternative workstations for use by a department or floor.

Third, the Company may want to further understand the statistically significant difference in walking to visit colleagues or using ergonomic methods (males) found by those who use the WFC versus those who do not. By further understanding these differences, the Company may discover ways to encourage more physical movement of their staff by walking to speak with colleagues regardless of whether the employees are WFC users. Similarly the Company may wish to target ergonomic health at their female employees. Finally, the Company could use a similar study methodology to understand the impact of other worksite interventions, (e.g. Be Well Exams).

Other organizations may wish to leverage these findings as well. Organizations would start by taking an inventory of their fitness and nutrition programs and policies. They would gain an understanding of which policies and programs help and which hinder employees from practicing healthy workplace behaviors, remembering that customization across different segments of the employee population may improve results. Other organizations may consider emulating the programs and policies described in this study balancing the costs and potential benefits as necessary.

Existing Literature

The Company studied had many of the characteristics of a healthy workplace as discussed in the prevailing literature, namely in the policies and programs that allow for and encourage healthy fitness and nutrition behaviors. The study reinforced much of the current literature suggesting the benefits of a WFC, namely that users of the WFC felt more productive at work and better overall both inside and outside of work. Voit's review of 15

studies of employers' health and fitness programs specifically suggested this relationship (2000) as did Vingard's (2008) et al. study.

However non-WFC users mentioned the same benefits when they practiced other fitness and/or nutrition behaviors which aligned with Foster and Hillsdon's (2004) research, suggesting that the 19 studies they reviewed were insufficient in concluding the effectiveness of environmental changes in the workplace on healthy behaviors.

Although this research did not find that the use of a WFC influences other healthy fitness and nutrition behaviors throughout the workday, a variety of healthy options provided to employees helped them make healthier choices. This is similar to the findings by Simons-Morton et al. (1998).

In addition, personal and social motivations influence healthy choices. Personal motivators included staying healthy for one's loved ones and feeling and/or looking good while social motivators included managers/supervisors or colleagues using the WFC or making healthy food choices. This is consistent with multiple studies concerning personal and social motivations, namely those by Harrison and Liska (1994), Kaewthummanukul et al. (2006), and Moreno Murcia et al. (2008). Furthermore, this research may enhance existing literature by showing social acts may improve fitness behaviors in the workplace since WFC users tended to walk to talk with colleagues more frequently than non-WFC users.

Limitations

Several limitations existed in this study. Only 47 employees completed the survey, of which only 27 used the WFC and 20 did not. For the purpose of comparing groups, this constitutes a low sample size from which we cannot draw broad generalizations. In

addition, 57.6% of the survey respondents who used the WFC were more than twice the 2013 utilization rate of 25.6% of the WFC at the Company and therefore is not a representative sample. Rather it appeared that the employees who considered themselves to be healthier might have been more inclined to participate in the survey and interview. The survey demographics in terms of age and gender did not correspond with that of the broader Company population that is dominated by men and an average employee age in the mid to late 40s.

Furthermore, the employees whose behaviors were studied worked in Human Resources. Despite clear explanation regarding confidentiality in the informed consent (see page 1 of the survey in Appendix A and the interview consent form in Appendix D), Human Resource staff have a role in communicating employee benefits and advocating for the Company and may have therefore been more positive about health benefits. Because hard data such as weight, cholesterol levels, and blood pressure was not collected, this research also introduced a self-reporting bias that could not be substantiated by more quantitative data.

Research Summary

This chapter provided a summary of the findings from this study. It discussed how the data can be used, future research possibilities, and how it adds to current literature. Chapter 5 concluded with the limitations of the study.

This research highlighted the complex issues surrounding personal health. There is no single solution to improve fitness and nutrition behaviors in the workplace. For example, if WFC use were the answer, would not every employer not only have a WFC but also mandate its use? Rather, as the Company in this study has realized, a multipronged

approach needs to be employed to reach the different populations in the workplace. As previously discussed, the Company should not only continue doing what is working well and modifying areas that need improvement but it could focus further on an area highlighted in the study. Walking to speak with colleagues was practiced not necessarily because it is good to move the body, but because it is a social act. The Company should leverage social acts as ways to motivate staff to practice healthy fitness and nutrition behaviors. This could include using team competitions to lose weight or meet a fitness goal. It could also comprise documenting individual or goals to improve fitness or nutrition behaviors. No matter what the intervention, they need to be varied and many. Employers, employees and their families stand to benefit in a world that has become increasingly difficult to be healthy.

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Appendix A

Survey

Default Question Block

Informed Consent Form

As a student in the Master of Science in Organization Development program at Pepperdine University, Graziadio School of Business and Management, I am currently recruiting individuals for my study entitled, "The Impact of a Workplace Fitness Center on Employee Behaviors." The professor supervising my work is Dr. Ann Feyerherm.

This study focuses on the fitness and nutrition behaviors of employees who have access to a workplace fitness center. The purpose of this research is to explore whether use of a workplace fitness center influences other healthy behaviors during the workday. I am inviting you, as a employee, to participate in this study.

Please understand your participation in the study is strictly voluntary. The following is a description of what your participation entails, the terms for participating, and a discussion of your rights as a study participant. Please read this information carefully before deciding whether or not you wish to participate.

If you should decide to participate in the study, you will be asked to complete the following online survey regarding your use of a workplace fitness center and your fitness and nutrition behaviors during the workday. Completion of this survey will take approximately 10 minutes. Please complete the survey alone in a single setting.

Your responses will be kept anonymous and confidential.

There are no direct benefits to you for participating in the study. This is an opportunity for you to give input about fitness and nutrition behaviors in the workplace.

There are no major risks associated with this study.

If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer—simply leave such items blank. Terminating your participation at any time will not put your professional position in jeopardy in any way.

If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released. The data will be kept in a secure manner for three (3) years, at which time the data will be destroyed.

If you have any questions regarding the information that I have provided above, please do not hesitate to contact me. If you have further questions or do not feel I have adequately addressed your concerns, please contact my research supervisor, Dr. Ann Feyerherm at ann.feyerherm@pepperdine.edu or 949.223.2534. If you have questions about your rights as a research participant, contact Dr. Thema Bryant-Davis, Chairperson of the Institutional Review Board, Pepperdine University, at gpsirb@pepperdine.edu, 310.568.2389.

You are welcome to a brief summary of the study findings in about one (1) year. If you are interested in receiving the summary, please send me an email under separate cover to valarie.bartelme@pepperdine.edu

Thank you for taking the time to read this information, and I hope you decide to complete the survey.

Sincerely,

Valarie Bartelme

By checking the box below and by completing the survey online, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

- ○ I have read the informed consent (above) and agree to participate in this study.
- ○ I do not agree to participate in this study.

What is your age?

- 25 years old or under
- 26 - 35 years old
- 36 - 45 years old
- 46 - 55 years old
- Over 55 years old

What location do you work at?

- A
- B
- C
- Other - please state work location _____

What is your gender?

- Male
- Female

How often do you use the workplace fitness center on average? Please select one answer.

Never	Less than Once a Month	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
○	○	○	○	○	○	○

What are the factors that influence your decision to use the workplace fitness center? Select all that apply.

- ☐ Convenience
- ☐ Cost
- ☐ Improve health factors (e.g. lose weight, lower blood pressure, cholesterol, etc.)
- ☐ Improve energy levels
- ☐ Improve overall fitness/health
- ☐ Recover from injury
- ☐ Decrease stress
- ☐ Enhance productivity at work
- ☐ Social (e.g. build relationships with co-workers)

☐ Other, please explain _____

What are the factors that influence your decision not to use the workplace fitness center? Select all that apply.

☐ I prefer to go to a gym or follow a fitness regime outside of work.

☐ I don't go to a gym / follow a fitness regime.

☐ I don't have time.

☐ I don't want to exercise around my co-workers.

☐ It's inconvenient.

☐ Other, please explain _____

Have any of your health factors improved while using the workplace fitness center? (e.g. weight loss, muscle gain, etc.)

○ Yes

○ No

○ I've maintained my health factors / my health factors have generally not improved or worsened.

Have any of your health factors improved within the last few years? (e.g. weight loss, muscle gain, improved cholesterol levels, smoking cessation, etc.)

○ Yes

○ No

○ I've maintained my health factors / my health factors have generally not improved or worsened.

How often do you exhibit other fitness behaviors during your workday?

	Never	Less than Once a Month	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
I take the stairs instead of the elevator.	○	○	○	○	○	○	○
I use good ergonomics, (e.g. posture, stretch breaks, etc.)	○	○	○	○	○	○	○
I bike/walk to work.	○	○	○	○	○	○	○
I walk to speak with colleagues instead of using instant messenger, email or the phone.	○	○	○	○	○	○	○
Other, please explain _____	○	○	○	○	○	○	○

How often do you exhibit nutrition behaviors during your workday?

	Never	Less than Once a Month	Once a Month	2-3 Times a Month	Once a Week	2-3 Times a Week	Daily
I make healthy food choices, (e.g. Consume nutrient dense foods like whole grains, low-fat dairy, and low-fat meat. Limit consumption of added sugars and solid fats).	○	○	○	○	○	○	○
I practice portion control when eating (e.g. avoid "super-sizing" and not "cleaning your plate" when portion sizes are too large).	○	○	○	○	○	○	○
Other, please explain ____	○	○	○	○	○	○	○

Do you participate in the Be Well Health Check?

Yes, annually ○

Yes, but not every year ○

No ○

Would you be willing to participate in a brief one-on-one interview following this survey?

○ Yes

○ No

Please provide your contact information so I can schedule your interview.

_____

Appendix B

Interview Questions

1. Please elaborate on the fitness and nutrition behaviors that you exhibit throughout the workday.
2. How often on average do you exercise? (i.e. 30 minutes of moderate intensity activity on 5 or more days per week, or 20 minutes of vigorous-intensity activity on 3 or more days per week)
3. Describe the fitness and nutrition support mechanisms that are valuable to you in the workplace. (This may include, but is not limited to: healthy food/beverage choices in the vending machine or at company-sponsored meetings, frequent breaks during meetings, supervisor/manager support, gym membership reimbursement, other HR or HSSE policies, participate in annual health screening, workplace fitness center, walking paths, schedule flexibility, etc.)
4. What factors influence your decision to use or not use the fitness center? If you use the fitness center, how does using it impact other decisions you make throughout the day, at work and at home?
5. How long is your commute to/from work? What mode of transport do you use for your commute? If you drive to work, what is your parking situation?
6. What would motivate you to improve your fitness, nutrition and Be Well scores?
7. What could the workplace do to motivate you to improve your fitness, nutrition and Be Well scores?
8. Do you think your fitness and nutrition behaviors influence your colleagues' health behaviors? Do you think their behaviors influence you? If so, how?

Appendix C

Original Database

		Health Factors Improved	Fit Behvr_Stairs	Fit Behvr_Ergonomics	Fit Behvr_Bike/Walk to Work	Fit Behvr_Walk to Coworker	Fit Behvr_Other	Nut Behvr_Food Choices	Nut Behvr_Portion Ctrl	Nut Behvr_Other	Participate in BeWell
Use WFC_Convenience	Correlation Coefficient	-.247	-.128	.008	-.036	.251	.426	.055	-.074	.544	.161
	Sig. (2-tailed)	.094	.396	.956	.811	.089	.399	.712	.631	.456	.279
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Cost	Correlation Coefficient	-.081	-.081	.152	.043	.130	.853*	-.056	-.167	.544	.100
	Sig. (2-tailed)	.590	.592	.307	.776	.382	.031	.711	.272	.456	.505
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Spec Health Fac	Correlation Coefficient	-.007	-.042	.252	.070	.279	.804	.071	.035		.279
	Sig. (2-tailed)	.962	.780	.087	.640	.057		.637	.818		.058
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Energy	Correlation Coefficient	-.097	-.213	.132	.149	.194	0.000	.042	.025		.165
	Sig. (2-tailed)	.518	.155	.378	.319	.191	1.000	.778	.868		.267
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Overall Health	Correlation Coefficient	-.163	-.116	-.064	.016	.296*	.804	.065	-.042	.544	.173
	Sig. (2-tailed)	.273	.442	.670	.914	.043	.054	.662	.782	.456	.245
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Recovery	Correlation Coefficient	.156	-.187	.159	-.045	.131		-.095	-.130		.085
	Sig. (2-tailed)	.295	.214	.287	.764	.380		.525	.393		.568
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Decr Stress	Correlation Coefficient	-.179	-.087	-.003	-.219	.274	.426	.025	-.057	.544	.026
	Sig. (2-tailed)	.229	.565	.982	.139	.062	.399	.866	.709	.456	.862
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Incr Prod	Correlation Coefficient	-.068	-.075	-.053	-.093	.157	.539	.172	.014		.022
	Sig. (2-tailed)	.649	.618	.725	.534	.292	.269	.247	.930		.883
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Social	Correlation Coefficient	.156	-.076	-.085	-.045	-.185		-.226	-.261		.085
	Sig. (2-tailed)	.295	.617	.570	.764	.214		.127	.083		.568
	N	47	46	47	47	47	6	47	45	4	47
Use WFC_Other	Correlation Coefficient	.156	.175	.159	-.045	-.089		.143	.144		.085
	Sig. (2-tailed)	.295	.245	.287	.764	.550		.338	.347		.568
	N	47	46	47	47	47	6	47	45	4	47

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

		Health Factors Improved	Fit Behvr_Stairs	Fit Behvr_Ergonomics	Fit Behvr_Bike/Walk to Work	Fit Behvr_Walk to Coworker	Fit Behvr_Other	Nut Behvr_Food Choices	Nut Behvr_Portion Ctrl	Nut Behvr_Other	Participate in BeWell
No Use WFC_Outside Work	Correlation Coefficient	.195	.188	.200	.040	-.197	-.674	.122	.072	-.272	-.075
	Sig. (2-tailed)	.190	.212	.178	.792	.183	.142	.415	.638	.728	.615
	N	47	46	47	47	47	6	47	45	4	47
No Use WFC_No Regime	Correlation Coefficient	.223	-.267	-.186	-.064	.187		.034	.205		-.092
	Sig. (2-tailed)	.132	.073	.210	.668	.207		.820	.176		.540
	N	47	46	47	47	47	6	47	45	4	47
No Use WFC_Time	Correlation Coefficient	-.070	.134	-.174	.004	-.229	-.405	-.057	.018	-.943	-.116
	Sig. (2-tailed)	.642	.376	.243	.980	.121	.426	.705	.907	.057	.436
	N	47	46	47	47	47	6	47	45	4	47
No Use WFC_Coworkers	Correlation Coefficient	.340*	-.144	-.085	-.127	.031	0.000	-.149	-.101	.544	-.190
	Sig. (2-tailed)	.019	.338	.570	.393	.834	1.000	.316	.510	.456	.200
	N	47	46	47	47	47	6	47	45	4	47
No Use WFC_Inconvenience	Correlation Coefficient	.156	.052	.159	-.045	.131		.143	.144		.085
	Sig. (2-tailed)	.295	.729	.287	.764	.380		.338	.347		.568
	N	47	46	47	47	47	6	47	45	4	47
No Use WFC_Other	Correlation Coefficient	.156	-.187	-.147	-.045	-.185		-.226	.144		.085
	Sig. (2-tailed)	.295	.214	.323	.764	.214		.127	.347		.568
	N	47	46	47	47	47	6	47	45	4	47

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Appendix D

Informed Consent for Participation in Research Activities

Participant: _____

Principal Investigator: Valarie Bartelme

Title of Project: Impact of a Workplace Fitness Center on Employee Behaviors

1. I _____, agree to participate in the research study being conducted by Valarie Bartelme, a student in the Master of Science in Organization Development program at Pepperdine University, Graziadio School of Business and Management, under the direction of Dr. Ann Feyerherm.

2. This study focuses on the fitness and nutrition behaviors of employees who have access to a workplace fitness center. The purpose of this research is to explore whether use of a workplace fitness center influences other healthy behaviors during the workday.

3. My participation will involve a 30 to 45 minute interview, which will be conducted face-to-face or on the phone. I grant permission for the interview to be tape recorded and to be used only by Valarie Bartelme for analysis of interview data. I understand my responses will be kept anonymous and confidential. If the findings of the study are presented to professional audiences or published, no information that identifies me personally will be released. The data will be kept in a secure manner for three (3) years, at which time the data will be destroyed.

4. I understand there are no direct benefits to me for participating in the study. This is an opportunity to give input about fitness and nutrition behaviors in the workplace.

5. I understand there are no major risks associated with this study.

6. I understand that I may choose not to participate in this research.

7. I understand that my participation is voluntary and that I may refuse to participate and/or withdraw my consent and discontinue participation in the interview at any time without penalty or loss of benefits to which I am otherwise entitled.

8. I understand that I may request a brief summary of the study findings to be delivered in about one (1) year. If I am interested in receiving the summary, I will send an email request to valarie.bartelme@pepperdine.edu.

9. I understand that the researcher, Valarie Bartelme, will take all reasonable measures to protect the confidentiality of my records and my identity will not be revealed in any publication that may result from this project. The confidentiality of my records will be maintained in accordance with applicable state and federal laws.

10. I understand that the investigator is willing to answer any inquiries I may have concerning the research herein described and that I may contact the researcher, Valarie Bartelme at valarie.bartelme@pepperdine.edu or 281.904.8324. I understand that I may contact Dr. Ann Feyerherm at ann.feyerherm@pepperdine.edu or 949.223.2534 if I have other questions or concerns about this research. If I have questions about my rights as a research participant, I understand that I can contact Dr. Doug Leigh, Chairperson of the Institutional Review Board, Pepperdine University, at doug.leigh@pepperdine.edu or 310.568.2389.

11. I understand to my satisfaction the information regarding participation in the research project. All my questions have been answered to my satisfaction. I have received a copy of this informed consent form, which I have read and understand. I hereby consent to participate in the research described above.

_____ _____

Participant Signature Date

_____

Participant Name

I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

_____ _____

Principle Investigator: Valarie Bartelme Date

Glossary

Active participation rate (as defined by the Company's WFC in this study): Percent of total members who use the WFC one or more times per month.

Be Well Exam: A robust medical examination provided free of charge to employees and their spouse/partner who are participants in the Company's medical plan. The approximately 4-hour exam includes various tests (e.g. blood, cardiac, hearing) and allows for the individual to meet with a nutritionist and a doctor to discuss results of their tests. Participation in the exam will provide financial incentives, (i.e. discount on medical insurance premium).

Be Well Focal Point: Individuals embedded across the Company who advocate for healthy behaviors in the workplace. The individuals assume the focal point role as part of their daily role and are not specifically trained in health care or benefits.

Centers of Excellence (COE) Program: This program provides employees and their families access to nationally-renowned medical care when they are diagnosed with heart or cancer conditions.

Company: The Company, as referred to in this study, was a major oil and gas company located in Houston, Texas, USA.

Health Coaching: After participating in the Be Well Exam, an employee has the opportunity to register to take part in 6 phone calls with a registered health coach on a variety of topics such as nutrition, weight loss, and stress management. Once the coaching calls have been completed, the Company provides a financial incentive (i.e. discount on medical insurance premium).

Health Reimbursement Account (HRA): A Health Reimbursement Account is an employer funded account that can be used to help pay for eligible medical expenses. The account balance at the end of a plan year may be carried over (as specified by the employer) from plan year to plan year as long as the employee continues to be enrolled in a HRA plan and work for the same employer.

Workplace Fitness Center (WFC): A gym co-located with employees' worksite/office.

Worksite Wellness Programs: A broad variety of health activities (e.g. smoking cessation, weight loss, nutrition education, etc.) that aim to improve the health of the employee population