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EFFECTS OF A WORKPLACE WELLNESS PROGRAM ON EMPLOYEE STRESS LEVELS

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by

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B.S., Southern Illinois University, 2016

A Research Paper

Submitted in Partial Fulfillment of the Requirements for the
Master of Science in Education

Department of Kinesiology
in the Graduate School
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RESEARCH PAPER APPROVAL

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Approved by:

Julie Partridge, Chair

Graduate School

Southern Illinois University Carbondale

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CHAPTER 1

INTRODUCTION

The health and happiness of employees in America have become increasingly popular topics for companies. Too often, personnel are overworked and spend too much time behind a computer screen. Numerous establishments are paying an exorbitant amount in health costs because of the rise in diseases that are directly related to sedentary lifestyles (Dishman, Oldenburg, O'Neal, & Shepard, 1998). As a result, companies are discovering that initiating programs to increase the physical activity levels and decrease stress levels could have a positive impact on the happiness and overall well-being of individual workers as well as the company as a whole.

Physical Activity

Regular physical activity reduces one's risk of premature death and disability, including coronary heart disease, diabetes, colon cancer, osteoarthritis, and osteoporosis (Mann, Tomiyama, & Ward, 2016). Although the numerous benefits of physical activity are commonly known, an alarming percentage of Americans are not meeting the recommended amount of activity (Buckworth & Dishman, 2002). According to the United States Department of Human Services, as of January 2017, less than 5% of adults participate in 30 minutes of physical activity each day, only one-third receive recommended amounts of physical activity each week, and more than 80% adults do not meet guidelines for both aerobic exercise and strength training activities (President's Council on Fitness, 2017). The increasing sedentary rates can be attributed to many structural changes within our society. A few suspects include the increase in technological advances that have reduced the need for labor-intensive jobs, production of labor-saving devices to decrease the amount of physical activity needed at home, and overall changes

in our transportation system (i.e., increased reliance upon motor vehicles, rather than biking or walking) (Mann et al., 2016). We have become a society that prioritizes convenience over health.

While much of the society's focus has been on physical benefits of exercise, it is equally important to look at the mental benefits that a physically active lifestyle has on individuals. Physical activity has been shown to be inversely associated with depressive symptoms and positively correlated with emotional well-being (Galper, Trivedi, Barlow, Dunn, & Kampert, 2006). Other research has shown that daily physical activity, in any form, is associated with a lower risk of psychological distress (Hamer, Stamatakis, & Steptoe, 2008). Exercise programs often foster social support systems, help individuals improve coping abilities, and decrease anxiety levels.

That said, the idea of physical activity can cause feelings of apprehension for some individuals. Many people view physical activity as too complicated, dangerous, time-consuming, etc. and they will avoid it for these reasons. Therefore, programs that help to reduce people's hesitation towards fitness will have a positive impact on all aspects of their health, including reductions in levels of stress (Hamer et al., 2008).

Stress

Job-related stress is known to be a concerning health issue amongst American workers (Noblet & Lamontagne, 2006). High stress levels in the workplace are due to many factors, including pressures associated with an increasingly competitive marketplace, work overload, lack of perceived support, and low input into decision-making (Noblet & Lamontagne, 2006). These pressures are suspected to remain an issue in the future and are likely to impact all workers at some point in their lives (Noblet & Lamontagne, 2006). Chronic exposure to stress

has been linked to numerous health issues, including depression, anxiety, emotional exhaustion, immune deficiency disorders and cardiovascular disease (Michie & Williams, 2003).

Furthermore, chronic job stress has a negative important on organizational functioning.

Occupational stress leads to more employee absences, higher labor turnover, and decreased performance (Michie & Williams (2003).

Physical Activity in the Workplace

There is a great opportunity for workplaces to support the health of its employees. In current American society, many workers sit during their morning commute, then continue sitting at a desk through the majority of their 8+ hour workday (Matthews et al., 2008). Studies have shown that prolonged sitting time, even if individuals are exercising each day, has harmful health consequences (Owen, Healy, Matthews, & Dunstan, 2010). The current general recommendations for physical activity states clearly that this recommendation is in addition to routine activities of daily living, which include tasks such as casual walking, grocery shopping, gardening, or taking out the trash (Owen et al., 2010).

Health benefits of regular exercise related to mental health include improved sleep, stress relief, improvement in mood, increase energy, reduced tiredness, and increased mental alertness (Sharma, Madaan, & Petty, 2006). Improvements in mood are suspected to be due to the increase in blood circulation to the brain during exercise. The impact exercise has on the brain, specifically in the hippocampus region, plays an important role in memory formation as well as mood and motivation (Sharma et al., 2006).

The positive outcomes that exercise has on the brain are extremely important for organizations to consider. Workers who have more energy, experience less stress, and are more mentally aware are generally going to be much better employees and produce significantly better

work. It is therefore critical that workplaces consider how to facilitate and encourage physical activity in their workforce.

Interventions

Due to the great amount of time workers spend at the office each day, there is great potential for the workplace to have a positive influence on health-related behaviors, specifically physical activity (Dishman, Oldenburg, O'Neal, & Shepard, 1998.) Workplace wellness programs are developed and put in place by organizations in effort to improve the physical and mental health of their employees. Studies have shown that wellness programs improve the overall health of employees and lead to an increase in productivity (Rajgopal, 2010). Additionally, these programs have been shown to decrease the amount of perceived stress amongst employees (Abdullah & Lee, 2012). Overall, workplace wellness programs have shown to be extremely effective in improving both the mental and physical health of employees. Furthermore, wellness programs appear to be successful for preventing and/or reducing stress (Abdullah & Lee, 2012).

A study conducted by Abdullah and Lee (2012) found that employees who attended wellness programs showed greater job satisfaction, decreased absenteeism, and lower perceived stress levels. Because of the great amount of their lives people spend at work, worksites have the exclusive opportunity to make the most of those 40+ hours a week (Dishman et al., 1998.) Most of these intervention programs have been multi-faceted, not only aimed at increasing physical activity, but also providing psychological benefits as well (Dishman et al., 1998). That said, more studies are needed to assess these benefits, specifically perceived stress levels.

Purpose and Hypothesis

The purpose of this investigation was to determine the effectiveness of workplace wellness programs on reducing stress. It was hypothesized that participants would demonstrate lower levels of symptoms of stress and perceptions of stress following the 4-week workplace wellness program measured by the Perceived Stress and Symptoms of Stress Questionnaire (Matheny & McCarthy, 2000).

CHAPTER 2

METHOD

Participants

The sample of this study included 12 participants (female = 9, male = 3), who were first-time participants in the pilot Workplace Wellness program at the Southern Illinois University Recreation Center. The participants ranged in age from 23 years old to 62 years old and possessed varying physical abilities, from extremely novice to experienced exercisers (determined by the instructor teaching the sessions). Attendance was not mandatory, thus the number of participants in each workout session varied. The program took place for 4 weeks and was open to all professional staff and graduate assistants at the Southern Illinois University Student Recreation and Student Health Centers. The instructor-led workouts took place every Tuesday and Thursday from 12-12:30 p.m. The workouts were mostly full-body workouts that incorporated both strength and endurance training. These individuals were made aware of the program through email as well as an all-staff meeting. Individuals were sampled due to knowledge of their busy and stressful work schedules and need for a wellness program based on a pilot assessment of stress levels.

Data Collection Procedures

Prior to any data collection, this study was approved by the SIUC Human Subjects Committee. The author gave a presentation to all employees at an all-staff meeting and the interested participants emailed the author to enroll in the program. Interested participants received an online survey to determine their preferred days and times for the occurrence of the on-site workout classes each week. They were also asked to indicate their preferred type of workout class as described above. The day and time that garnered the most votes were

chosen. The participants signed an informed consent form and their blood pressure and resting heart rate were taken prior to the initiation of the program. These assessments occurred in the Personal Wellness and Fitness Studio (PWFS) in the Student Recreation Center. Participants were also sent an online survey (described below) to assess their stress levels prior to the commencement of the program.

Measures

Stress levels of the participants were measured through a stress questionnaire containing 22 items. The first portion of the questionnaire assessed symptoms of stress (12 items) on a 7-point Likert-type scale from 1 = never to 7 = almost all day, every day. These items were adapted from the Perceived Stress and Symptoms of Stress Questionnaire developed by Matheny and McCarthy (2000). One example of these questions is, "how frequently do you experience headaches?" The second portion of the questionnaire used the Perceived Stress Scale to assess perceived stress levels. This portion included 10 items with possible answers on a 5-point Likert-type scale from 1 = never to 5 = very often. These items were adapted from the Perceived Stress and Symptoms of Stress Questionnaire (Matheny & McCarthy 2000). An example of one of these questions is "in the past month, how often have you felt nervous and stressed?"

Intervention

The implementation of the program involved weekly emails to participants that included a healthy tip of the week and a weekly office workout. These were sent to them in an email every Monday morning between 8 a.m. and 9 a.m. There were also two on-site workouts, as described above, held each week led by a certified personal trainer and group fitness instructor. Each on-site workout took place at noon and lasted 30 minutes. After the last week, participants were given the online stress questionnaire again and they were asked to return to have their

resting pulse and blood pressure re-assessed. However, because this was voluntary, only three individuals returned to get their updated blood pressure and pulse measurements and no further analyses were conducted on these data.

CHAPTER 3

RESULTS

Descriptive statistics for the pre- and post-test stress questionnaires can be found in Tables 1, 2, 3 and 4 below. Given the low number of participants, additional data analyses were not completed for the study. Mean improvements were seen between the pre-test and post-test for all symptoms of stress and perceptions of stress.

Table 1

Descriptive Statistics for Symptoms of Stress Pre-Test (N = 18)

Frequency of Experience

	Mean	SD	Median
Headaches	4.94	0.87	5
Tense muscles	3.06	1.80	4
Fatigue	3.50	1.34	3.5
Anxiety	3.33	1.24	3
Difficulty falling asleep*	2.39	1.24	2
Irritability	3.72	1.24	4
Insomnia*	3.39	1.24	3
Bouts of anger	5.50	1.10	6
Boredom/depression	5.00	1.61	5.5
Eating too much/too little	3.78	1.26	4
Gastrointestinal distress	4.50	1.76	5
Restlessness	5.10	2.10	6

**5-point Likert-type scale rather than 7-point*

Table 2

Descriptive Statistics for Perceptions of Stress Pre-Test (N = 18)

Frequency of Feeling

	Mean	SD	Median
Upset	3.22	0.81	3
Nervous and stressed	3.83	0.71	4
Able to handle problems	3.72	0.58	4
Things going your way	3.33	0.91	3
Able to control irritations	3.44	0.84	3
Unable to cope	2.67	0.84	3
Unable to control things	3.06	1.00	3
On top of things	3.33	1.08	3
Angry	3.11	0.90	3
Overwhelmed	2.72	1.02	3

Table 3

Descriptive Statistics for Symptoms of Stress Post-Test (N = 13)

Frequency of Experience

	Mean	SD	Median
Headaches	5.15	1.07	5
Tense muscles	3.46	1.71	4
Fatigue	4.08	1.71	4
Anxiety	4.62	1.39	5
Difficulty falling asleep*	3.15	1.14	3
Irritability	4.77	1.54	5
Insomnia*	3.77	0.93	3
Bouts of anger	5.92	1.04	6
Boredom/depression	5.46	1.45	6
Eating too much/too little	4.08	1.55	4
Gastrointestinal distress	5.08	1.66	6
Restlessness	6.23	1.36	7

*5-point Likert-type scale rather than 7-point

Table 4

Descriptive Statistics for Perceptions of Stress Post-Test (N = 13)

Frequency of Feeling

	Mean	SD	Median
Upset	2.38	1.12	3
Nervous and stressed	3.31	0.75	3
Able to handle problems	3.46	0.88	3
Things going your way	3.54	0.52	4
Able to control irritations	3.62	0.65	4
Unable to cope	2.15	0.55	2
Unable to control things	2.38	0.87	2
On top of things	3.58	0.65	4
Angry	2.46	0.88	3
Overwhelmed	2.00	0.82	2

CHAPTER 4

DISCUSSION

The purpose of this investigation was to determine the effectiveness of a workplace wellness programs on reducing stress. It was hypothesized that participants would demonstrate lower levels of symptoms of stress and perceptions of stress following the 4-week workplace wellness program measured by the Perceived Stress and Symptoms of Stress Questionnaire (Matheny & McCarthy, 2000).

Workplace wellness programs are typically put in place by organizations with the purpose of improving the livelihood and health of its employees. Previous studies have shown that wellness initiatives have improved the physical and mental health of employees (Abdullah & Lee, 2012; Dishman et al., 1998). For this study, the data for perceived stress and symptoms of stress levels were measured by the 22-item Perceived Stress and Symptoms of Stress Questionnaire. As hypothesized, there were overall improvements on raw numbers in all aspects of both halves of the questionnaire. The greatest improvements on the symptoms portion of the questionnaire were seen in ability to fall asleep and restlessness. The participants' reported average for difficulty falling asleep improved by 1.05 points on the Likert-type scale and their feelings of restlessness improved by 1.13 points. This means that the average for people claiming they experienced difficulty falling asleep went from "2-3 times per week" to "once per week" and the average for feelings of restlessness went from "once per week" to "once per month." This is consistent with other studies that have reported that exercise training improves sleep quality (Yang, Ho, Chen, & Chien, 2012), and provides support for the potential health and lifestyle benefits of a workplace wellness program.

The greatest changes in the perceptions of stress questionnaires were in feeling upset and overwhelmed. These are both feelings greatly associated with stress. Therefore, these alterations support previous research that workplace wellness programs decrease amounts of perceived stress amongst employees (Abdullah & Lee, 2012).

It is important to note that there were improvements between the pre-test and post-test in all symptoms of stress and perceptions of stress. This supports the hypothesis that workplace wellness programs will have a positive impact on the stress levels of employees. Further research is needed to elucidate these findings.

Limitations and Future Modifications

It is important to recognize several limitations in this study. One limitation is the small sample size. The pool of potential subjects was rather small to begin with ($N = 31$ employees) and the interest of some of those prospective individuals was non-existent. Even some of the individuals who displayed interest in the program did not end up participating in any sessions. A possible incentive program may have been more appealing to many of the workers and would be a great idea for future programs. A potential idea for an incentive program would be to have a punch card and after workers attend a determined amount of sessions, they get a prize, an extended lunch break for a week, or a gift card. If this study would have taken place in a facility or company that employed more professional staff members, the results and numbers may have proven more significant.

Another limitation was the shifting participation rates in the individuals who signed up for the program. Much of this is due to the nature of their jobs. Many university employees do not have a consistent schedule each day or week. They must be flexible to various and fluctuating meeting and event times, which may coincide with the scheduled on-site workouts.

Furthermore, roughly half of the individuals who signed up for the program were graduate students. This population has a very inconsistent schedule and have conflicts such as classes, studying, and projects, with which most professional staff members would not typically have to contend. In the future, it would be beneficial to be able to offer more than one time-slot for the on-site workouts to combat this issue. We would also suggest involving multiple departments across campus in the program. This would likely increase the consistency of participation as participants might be able to utilize the social support of other colleagues to increase initiation and adherence to exercise programming.

A final limitation of this research was the short time frame in which it took place. More significant changes may have occurred if participants took part in a program for longer than 4 weeks. Likewise, individuals may have been able to attend a greater amount of sessions in additional weeks. A longer program would also allow the instructor to build upon the exercise skills and establish stronger rapport with the participants. Therefore, additional time would make it easier for the classes to be catered to the wants and needs of participants. Ideally, we would suggest making four sessions available each week so that participants have a few options in case they have to miss one or two sessions. We would also have sessions available at different times, such as two lunch sessions and two morning sessions each week. We would like to see the program carried on for the course of six months to one year because we believe that greater results would be seen in that amount of time.

Conclusion

The findings of this study suggest that workplace wellness programs help to reduce perceived stress levels and symptoms associated with stress. Therefore, it would be beneficial for more businesses to establish wellness programs in an effort to reduce stress levels of

employees and improve overall job satisfaction level and enhance productivity. Future research should include more participants and take place over a longer period of time. It would also be valuable to offer additional opportunities for the on-site workouts in case workers cannot attend the designated workout periods.

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APPENDICES

APPENDIX 1

Healthy Tips of the Week

One tip was emailed to each participant at 8 a.m. each Monday morning during the program.

Incorporate weight training into your routine!

Although many believe that cardio is the best form of exercise to lose/maintain weight and increase health, lifting weights has important benefits as well! Lifting weights allows you to strengthen your body and improves your body composition. Specific positive effects of weight training include: increase in metabolism (the more muscle you have, the more calories you burn throughout the day), improved insulin sensitivity (decreases risk of developing Type 2 Diabetes), and increased bone health (prevents osteoporosis).

Use Plenty of Herbs and Spices

There are many incredibly healthy herbs and spices out there. **Cinnamon** has the highest antioxidant value of any spice and has been shown to reduce inflammation and lower blood sugar and blood triglyceride levels! Try adding it to a smoothie, oatmeal, pancakes, baked carrots, or even chili! Some other herbs/spices with great health benefits include: garlic, cayenne, mint, turmeric, cumin, oregano, rosemary, and basil.

Try Tracking your Food Intake Every Once in Awhile

I don't think it is necessary to track everything you eat every day (that makes eating stressful and hard work!), but I think it's important to have a visual of what you're consuming on a daily basis. Personal story: I went through a phase where I made homemade whole grain pancakes for breakfast for 2 weeks straight... then decided to calculate how much I was consuming. Although they were all healthy ingredients, I found out each breakfast was about 1,000 calories! I

personally use MyFitnessPal every once in a while to make sure that I'm not ACCIDENTALLY consuming more than I am supposed to! This also helps you make sure that you're getting enough protein, fiber, and micronutrients in your diet.

Basically, anything that increases your awareness of what you are eating is likely to help you succeed.

Don't go on a "Diet"

Diets are notoriously ineffective, and rarely work well in the long term. Actually, "dieting" is one of the strongest predictors for future weight gain. Instead, look at it as adopting a healthier lifestyle. Focus on *nourishing your body*, not depriving it. Weight loss should not be your reason for living healthier, but a side effect of better nutrition choice and being physically active.

APPENDIX 2

On-site workouts:

Workout 1- Full Body Circuit- intervals of cardio, core, upper body, and lower body exercises

Workout 2- Arms & Abs- focus on upper body and core strength with small bouts of cardio

Workout 3- Butts & Guts- emphasis on lower body exercises and building core strength

Workout 4- TRX- full body workout using TRX bands to utilize the core muscles in every movement

Workout 5- Core and Stretch- slower paced and more relaxing workout to focus on breathing and flexibility

Workout 6- Full Body HIIT- higher intensity movements to keep the heart rate up throughout class

Workout 7- TRX- full body workout using TRX bands to utilize the core muscles in every movement

Workout 8- Yoga- slower paced yoga flow to increase flexibility and gain awareness of breath and body

APPENDIX 3

Office Workouts of the Week

Workout 1:

Tabata (one tabata every hour- you should be complete each round twice)

20 seconds on/10 seconds off for 8 rounds (4 minutes)

Lower Body:

standing glute kickbacks

wide stance squats

Upper Body:

pushups (on wall, knees, or conventional)

small arm circles

Core:

seated ab twist (opposite elbow to opposite knee)

inch worms

Cardio:

high knees/march in place

jumping jacks/side steps

Workout 2:

200 rep workout! (do 1 round 4 times at least 1 day this week!)

10 squats to chair

10 lunges each leg

10 wall pushups

10 tricep dips

10 butterfly sit ups

Workout 3:

Do each round 5 times at least 1 day this week!

90 seconds SMALL arm circles

60 seconds wallsit

30 second plank

*Feel free to modify as you need! You can adjust the time or even the exercise. As always, ask if you have any questions!

Workout 4:

Countdown! (Go through twice at least 1 day this week!)

10-9-8-7...1

Chair sits (try with your hands overhead!)

Mountain climbers

Superman pulses

VITA

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Research Paper Title:

Effects of a Workplace Wellness Program on Employee Stress Levels

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