Effects of a Workplace Wellness Program in the Public Health Workforce: Small-Scale Study at a Local Health Department

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Abstract

Background: The COVID-19 pandemic has a profound impact on the physical and mental wellbeing of the public health workforce. Past research on worksite health promotion programs (WHPPs) shows improved employee health outcomes and increased workplace productivity. Yet, there is little research on WHPPs at local health departments around the United States. Objective: Therefore, the purpose of this study was to determine the effectiveness of a shortterm WHPP at the Jefferson County Health Department located in Eastern Missouri. Methods: During the 4-week experiment, employees (N=34) received emails with self-guided mediation videos from the Headspace and Calm YouTube channels and nutrition education infographics with recipe ideas. Self-reported stress levels and fruit and vegetable consumption were assessed using the Perceived Stress Scale (PSS) with 10-items and 2011 Behavioral Risk Factor Surveillance System (BRFSS) Questionnaire over fruit and vegetable intake at baseline and after the 4-week experiment. Employees also completed weekly progress report surveys to track participation. The intervention group (N=14) completed all challenge surveys, and the control group (N=20) completed the pre-challenge survey. **Results**: T-tests for the intervention group found statistical significance for PSS items 2 and 10 (unable to control, could not overcome) between the pre-challenge and post-challenge surveys. T-tests for the intervention and control groups found statistical significance for demographic item 1 (years) and the fruit and vegetable consumption items 2 and 5 (fresh/frozen/canned fruit, orange vegetables). Conclusion: Public health urgently needs to invest in the health of its workforce. This study highlights the effectiveness of mediation videos at reducing stress within a workplace. Future research should evaluate the long-term effects and motivation factors of WHPPs for public health employees.

Introduction

The coronavirus disease (COVID-19) pandemic has taken a tremendous toll on the public health workforce in the United States. Since March of 2020, public health professionals at health departments, community organizations, and hospitals have worked around the clock to tabulate the statistics of COVID-19, educate on infection disease mitigation strategies in communities, investigate case clusters, and implement vaccination campaigns (Bryant-Genevier et al., 2021). In addition, the public health workforce is facing a shortage of funding and workers to support the health needs of communities around the nation (Grimm et al., 2015). As a result, the public health field has seen a rise in mental and physical health problems (Bryant-Genevier et al., 2021).

During public health emergencies like COVID-19, there are increases in mental health conditions in the general population and frontline workers (Walton et al., 2020). In a study of 26,174 federal, state, tribal, and local public health workers in the United States, 53.0 percent reported at least one mental health condition over the past two weeks (Bryant-Genevier et al., 2021). The most common mental health conditions included depression, anxiety, post-traumatic stress disorder, and suicidal ideation (Bryant-Genevier et al., 2021). Another study found that 66.2 percent of public health workers are experiencing burnout due to COVID-19 (Stone et al., 2021). Factors contributing to mental health problems include increased workload, threats and harassment from community members, and fear of contracting COVID-19 (Bryant-Genevier et al., 2021; Walton et al., 2020).

Disease mitigation strategies like quarantine during COVID-19 have also impacted the physical health of the public health workforce (Lin et al., 2021). During the height of the pandemic, many state and local health department employees worked from home to protect

against disease transmission (Bryant-Genevier et al., 2021). Throughout 2020, studies estimated that the average working adult gained approximately four pounds due to stay-at-home orders (Lin et al., 2021; Zeigler, 2021). Self-quarantine increased sedentary behaviors, decreased physical activity, decreased water intake, decreased sleep quality, increased snacking, increased alcohol intake, and increased emotional eating (Zeigler, 2021). Weight gain during COVID-19 may increase the growing rates of obesity (Zeigler, 2021). Obesity among workers can increase work absence and healthcare costs for a company (Yarborough et al., 2021).

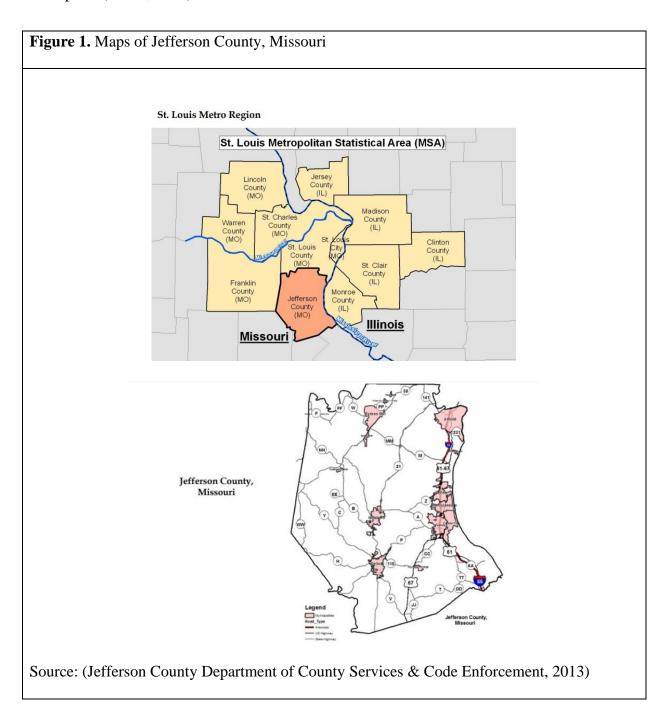
Overall, a healthy public health workforce is needed to provide care for communities around the United States. The public health workforce can heal from COVID-19 through worksite health promotion programs (WHPPs) and additional training (Bryant-Genevier et al., 2021). One study of public health departments in Nebraska found that 80 percent of employees were open to more instruction on prevention and wellness (Grimm et al., 2015). For example, nutrition education could help reduce obesity among workers (Grimm et al., 2015). However, there is a gap in research on WHPPs in the public health sector around the United States.

Jefferson County Health Department

As shown in Figure 1, the Jefferson County Health Department (JCHD) is the local public health agency for Jefferson County, Missouri (MO) (Jefferson County Health Department [JCHD], 2021). The MO Institute for Community Health states that JCHD is an accredited agency (Missouri Institute for Community Health [MICH], 2017). To receive accreditation, a local health department must meet strict standards for infectious disease management, chronic disease prevention, environmental health maintenance, family health care access, hazard preparedness, and effective leadership (MICH, 2017). Today, the organization of 90 employees serves a population of about 225,000 residents (JCHD, 2021). JCHD promotes healthy

communities using the core functions of public health at three locations and five mobile units.

Examples of department programs include health care services, dental services, emergency response, health education, environmental services, office support, and policy advocacy. During COVID-19, JCHD continues to care for and support county residents with clinic hours and social media posts (JCHD, 2021).



Community Assessment

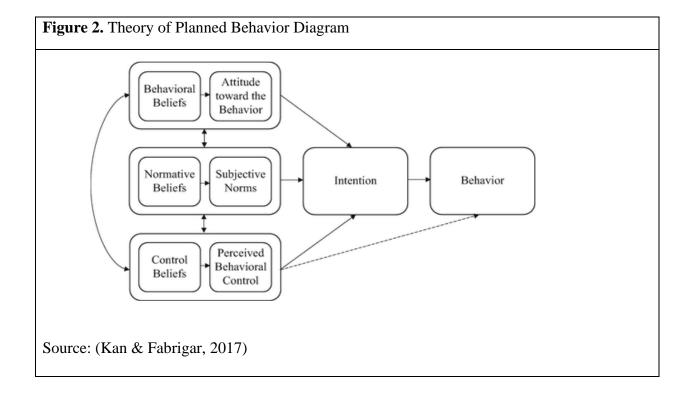
The target population of this study is employees at JCHD. During staff meetings and workplace conversations, employees have expressed high-stress levels and burnout due to the COVID-19 pandemic. The local health department has seen increased workload and feedback from county residents. In addition, JCHD's registered dietitian identified a need for more fruit and vegetable consumption among employees to combat COVID-19 weight gain. As a result, employees need to recharge their mental and physical health using a WHPP.

Currently, there are no wellness programs or policies at JCHD. Employee wellness has not been a priority during the current pandemic. Before the pandemic, JCHD created a Wellness Committee in the Fall of 2016 due to fundings from the WorkWell Toolkit Grant (JCHD, 2018). The committee worked to increase workplace morale and develop a supportive culture. In addition, the committee created a newsletter each quarter that shared information on a variety of health topics (JCHD, 2018). Leftover funds from the Wellness Committee supported resources for this study.

In addition, JCHD has promoted wellness through two main events. In 2019, JCHD employees participated in a staff training day focused on employee wellness. The local health department partnered with community organizations to promote healthy eating, exercise, health screenings, and home safety (JCHD MO, 2019). For example, employees were encouraged to dance with a certified Zumba instructor (JCHD MO, 2019). In 2018, the Wellness Committee implemented a holiday wellness challenge and a daily step challenge (JCHD, 2018). In addition, registered dietitians employed by JCHD used lunch and learn sessions to share nutrition education and healthy food. However, this program ended when employees were no longer required to clock out for lunch or work from home (JCHD, 2018).

Theory of Planned Behavior

As shown in Figure 2, the Theory of Planned Behavior (TPB) explains an individual's motivation to perform a health behavior like mediation or nutrition education (Hochart & Lang, 2011; Mafabi et al., 2017). TPB proposed that behavior, such as participating in a WHPP, is primarily influenced by behavioral intention (Röttger et al., 2017). Behavioral intention is the motivation an individual has to engage in healthy behavior. Intentions are influenced by personal attitudes, the subject norm, and perceived behavioral controls. First, attitudes are an individual's beliefs about the positive or negative behavioral consequences. Second, norms are the social pressure to engage or not engage in an activity. For example, leadership can help promote healthy behaviors in the workplace. Last, perceived behavioral control is the belief that a person can complete the health behavior (Röttger et al., 2017). As a result, TPB can help predict individual health behaviors in a social environment like a workplace (Ajzen, 1991; Kan & Fabrigar, 2017).



Literature Review

History of Worksite Health Promotion Programs

After the passing of the 2010 Affordable Care Act (ACA), more companies and small businesses are investing in the health of their employees through the implementation of WHPPs (Jones et al., 2019). WHPPs are employer-provided efforts to modify employee risk factors for chronic diseases. In 2018, the workplace wellness industry earned \$8 billion, and 50 million United States employees participated in a program (Jones et al., 2019). Studies at large companies showed decreased medical spending, improved work performance, and reduced employee absenteeism after a WHPP (Jones et al., 2019; Song & Baicker, 2019). However, there is limited research on the effectiveness of WHPPs in small business or public health settings (McCoy et al., 2014).

History and Benefits of Mediation

Ancient Buddhist culture developed mindfulness mediation (MM) (Basso et al., 2019; Good et al., 2015). MM allows people to focus their attention and awareness on their mental and emotional state. In the late 1970s, the popularity of MM grew in western culture due to the development of a mediation-based stress therapy technique created by Jon Kabat-Zinn (Basso et al., 2019; Good et al., 2019). Recently, smartphone applications (apps) focused on MM have become commercially available for the general public (Champion, 2018).

Meditation produces a wide range of mind and body benefits for adults. The mental benefits of mediation include enhanced emotional regulation, attention, cognitive performance, and self-awareness (Bostock et al., 2019; Good et al., 2015). In addition, mediation can decrease depression, anxiety, pain, stress, and substance use (Basso et al., 2019). The body benefits of

mediation include reduced blood pressure and inflammation and improved insulin resistance and brain function. Basso and colleagues (2019) found that after one mediation session, there was an increased white-matter volume in the pre-frontal cortex of study participants. The pre-frontal cortex plays a role in the body's stress and behavioral response (Basso et al., 2019).

Mediation App Based Interventions

MM app-based WHPP could be a beneficial, low-cost method for stress reduction (Behan, 2020). For example, Basso and colleagues (2019) exposed participants to daily 13-minute mediation podcasts for eight weeks. After only four weeks, participants began to experience the benefits of meditation like improved mood, decreased anxiety, and enhanced cognition (Basso et al., 2019). Today, there is a robust market for mobile health apps focused on MM, yet many apps are not research reviewed (Lau et al., 2021). Lau and colleagues (2021) analyzed popular consumer MM apps with scientific backing using the well-validated Mobile Application Rating Scale (MARS). MARS scores rate the app's engagement, functionality, aesthetics, and information quality. The research team found that the Headspace and Calm apps had the best MARS and consumer rating scores (Lau et al., 2021).

Past research has focused on the effectiveness of the Headspace and Calm apps. First, Bostock and colleagues (2019) tested the Headspace app on healthy employees from two large United Kingdom companies. Participants completed daily 10-20 minute guided meditations on the app for 45 days. After the intervention, participants reported improvements in stress levels, job strain, and blood pressure (Bostock et al., 2019). Second, Champion (2018) also studied the effects of the Headspace app. After a 10-day pilot study, healthy adults stated that the MM app positively impacted stress, resilience, and life satisfaction (Champion, 2018). Third, Huberty and colleagues (2019) found that the Calm app was an effective stress reduction method for college

students. However, the cost of MM apps like Calm may be a barrier for WHPPs (Huberty et al., 2019).

History and Benefits of Fruit and Vegetable Consumption

The 2015-2020 Dietary Guidelines for Americans recommends adults should consume at least 1.5-2.0 cups of fruit and 2.0-3.0 cups of vegetables per day (Lee-Kwan et al., 2017). However, data from the 2013 Behavioral Risk Factor Surveillance System (BRFSS) found that few adults consume enough fruits and vegetables (Lee-Kwan et al., 2017). Barrington & Beresford (2019) found that nighttime snacking, soft drink consumption, and availability of fast food are associated with decreased fruit and vegetable consumption in working adults.

A diet full of fruits and vegetables provides many benefits for chronic diseases and mental health. The chronic disease benefits of increased fruit and vegetable consumption include a reduced risk for cardiovascular disease (CVD), stroke, type two diabetes, some cancers, and obesity (Aune et al., 2017; Barrington & Beresford, 2019). The mental health benefits of increased fruit and vegetable consumption include a reduced risk of developing depression (Dharmayani et al., 2021). Glabska and colleagues (2020) explained that fruits and vegetables have a high nutrient content which protects against depression in adults.

Self-Tracking and Nutrition Education Based Interventions

One of the most popular topics for WHPPs is a healthy diet change. Song & Baicker (2019) found that a WHPP focused on nutrition was cost-effective, and employees had a high participation rate. Self-tracking and online nutrition education are effective ways to promote healthy diet changes like increased consumption of fruits and vegetables (Meng et al., 2017). Meng and colleagues (2017) studied the effectiveness of individual self-tracking on fruit and

vegetable consumption. Personal self-tracking methods can include online-tracking forms, journals, and calendars. Results showed self-tracking helped individuals increase self-awareness of fruit and vegetable consumption throughout the study (Meng et al., 2017).

In addition, nutrition education has increased fruit and vegetable consumption for employees (Fitzgerald et al., 2018). Examples of nutrition education include individual nutrition consultations with a registered dietitian, group presentations on the importance of different food groups, and supplemental materials on nutrition topics through email (Fitzgerald et al., 2018). Nutrition education interventions should also provide social support for employees (Clark, 2019). A recent thesis paper found that 74 percent of employees believed social support helped them eat more fruits and vegetables. Social support can come from a registered dietitian, family, and friends (Clark, 2019).

For this WHPP, two websites provided resources for evidence-based nutrition education. First, the Academy of Nutrition and Dietetics website, eatright.org, is an online resource devoted to improving public health through research, education, and advocacy (Academy of Nutrition and Dietetics, 2021). In the United States, nutrition practitioners recognize eatright.org as standard practice for nutrition education (Connor, 2014). Second, the Produce for Better Health Foundation's (PBH) website, fruitsandveggies.org, is an online resource promoting fruits and vegetables directly to American consumers (Produce for Better Health Foundation [PBH], 2021). In the past, PBH worked with the National Cancer Institute on the 5 A Day for Better Health program. Today, PBH produces user-friendly nutrition education resources based on relevant research written by experts in the nutrition field (PBH, 2021).

Purpose Statement

The purpose of this study was to determine the effectiveness of an online-based short-term WHPP at a local health department in the Midwest. Objective one is to decrease employee stress levels using guided mediation videos. Objective two is to increase fruit and vegetable consumption using self-tracking and nutrition education. The alternative hypothesis states that participants will have significant changes on pre-challenge and post-challenge surveys measuring stress levels and fruit and vegetable consumption. The null hypothesis states that there will be no statistically meaningful changes in the participant's stress levels and fruit and vegetable consumption after the program.

Methods

Ethical Approval & Incentive

The Institutional Review Board at the University of Missouri-Kansas City approved this study as a quality improvement program. All employees at JCHD received brief electronic consent before participation in the study. The datasets generated and analyzed during the study are available upon request. The incentive for the intervention was a Yeti cup, an RTIC cooler, and one \$50 gift card. Mattke and colleagues (2013) explain that incentives of at least \$50 are most effective at promoting employee participation in WHPPs. The research team asked participants their staff ID numbers on the pre-challenge survey, weekly process report surveys, and post-challenge survey to track progress. At the end of the challenge, the research team raffled the employee ID numbers to determine who received the prizes. The JCHD Wellness Committee fund and insurance company provided funds for the incentives.

Study Design & Data Collection



As shown in Figure 3, the study design and data collection occurred in five phases. The software Qualtrics was the platform where participants completed all study surveys.

Phase one was recruitment. Recruitment for the study began one week before the program, and all 90 employees at JCHD were eligible to participate. First, participants received an introduction email with a video about the study and the research team. Second, the research team posted flyers about the study in office spaces. (See Introduction Email Script, About Me Flyer, Challenge Flyer, Program Flyer with QR Code, Thank You for Signing-Up Flyer in Appendix H, F, G, M, & N for more details.)

Phase two was the baseline evaluation which occurred one week before the program. The pre-challenge survey asked participants their employee ID number and questions about demographics, stress levels, and fruit/vegetable consumption. A total of 34 JCHD employees completed the survey. (See Pre-Challenge Survey in Appendix A for more details.)

Phase three was the intervention activities which lasted for four weeks. The first activity of the intervention was mediation. Each day of the workweek (Monday-Friday), participants received an email that contained a ten-minute daily guided-mediation video. Participants were able to choose what time of day to watch the video. By the end of the intervention, participants received 20 videos. The source of the videos was the Calm and Headspace YouTube channels. (See Sample Intervention Schedule and Daily Meditation Email Scripts in Appendix E and I for more details.)

The second activity of the intervention was nutrition education. Participants reviewed nutrition education infographics sent in an email two times a week. By the end of the intervention, participants received a total of 8 nutrition education infographics with recipes. The

infographics covered various nutrition topics: the benefits of eating fruits and vegetables, how to understand fruit and vegetable serving sizes, healthy shopping tips, benefits of meatless Monday, food craving skills, chronic disease prevention, food safety, and how food impacts mood. The resources for nutrition education came from earight.org, fruitsandveggies.org, and JCHD's registered dietitian (Academy of Nutrition and Dietetics, 2021; PBH, 2021). In addition, JCHD's dietitian served as a resource to participants throughout the intervention by creating food plans and providing social support. (See Biweekly Nutrition Education Email Scripts in Appendix J for more details.)

The third activity of the intervention was increased consumption of fruits and vegetables. Participants were encouraged to consume at least four cups of fruit and vegetables each day (Monday-Sunday) during the study. Next, Participants received a poster that explained the serving sizes of various fruits and vegetables (American Heart Association, 2017). For example, 2.0 cups of leafy greens are equal to 1.0 servings of vegetables (American Heart Association, 2017). In addition, participants received notifications in nutrition education emails to eat more fruits and vegetables. (See Fruit and Vegetable Serving Size Graphic in Appendix B for more details.)

Phase four was progress evaluation. First, participants received a printable challenge calendar in the introduction email. A printable calendar is a form of individual self-tracking. As a result, the four-week calendar could help participants remember to watch daily mediation videos and consume at least four servings of fruit and vegetables daily. (See Challenge Calendar in Appendix D for more details). Second, participants completed a total of four weekly progress report forms. Each week, the form asked participants for their employee ID number, the number of mediation videos watched per week, and the number of fruit and vegetable servings per day.

The first form also included feedback questions. Emails reminded participants to complete the weekly progress report forms. In addition, during Week 3 of the study, the research team toured the worksite and passed out fruits to participants.

Phase five was end-line evaluation which occurred one week after the intervention activities. The post-challenge survey asked participants their employee ID and questions about stress levels, fruit/vegetable consumption, and feedback. Participants accessed the post-challenge survey using a link in the conclusion email. (See Post-Challenge Survey, Conclusion Email Script, and Program Certificate in Appendix C, L, and O for more details.)

Measures

Demographics were assessed using the Center for Disease Control and Prevention's (CDC) 2020 BRFSS Questionnaire focusing on the core section over demographics (Centers for Disease Control and Prevention [CDC], 2021). Hsia and colleagues (2020) found that the BRFSS Questionnaire, since 2011, is reliable and valid compared to other United States national health surveys for adults. Participants answered multiple-choice questions about the date of birth, sex, race, marital status, and education level (CDC, 2021). In addition, the leadership status question from National Healthy Worksite Demographic Questionnaire was used (CDC, n.d.). (See Demographic Questions in Appendix A for more details.)

Stress levels were assessed using the Perceived Stress Scale (PSS) with 10-items. Cohen and colleagues (1983) developed the PSS as a self-report measure to determine the degree to which a person ranks life events as stressful. The original PSS was 14-items (Cohen et al., 1983). However, Lee (2012) found that the psychometric properties of the PSS with 10-items were superior for college students and working adults. Klein and colleagues (2016) validated and

standardized the PSS with 10-items. Participants used the scale to report the degree to which life situation had been stressful in the past month on a 5-point Likert scale (0-never, 1-almost never, 2-sometimes, 3-fairly often, 4-very often). For PSS items 4, 5, 7, and 8, the scale was reversed during data analysis (Klein et al., 2016). (See the Mental Wellbeing Matrix in Appendix A or Appendix C for more details.)

Fruit and vegetable consumption was assessed using the CDC's 2011 BRFSS Questionnaire focusing on the core section over fruit and vegetable consumption (CDC, 2011). Participants answered fill-in-the-blank questions about how many servings of fruits and vegetables they ate or drank over the past month (CDC, 2011). The questions were validated by the CDC for working adults (CDC, 2014). Fruit and vegetable servings were analyzed based on whether the participant answered per day (daily servings=3), per week (weekly servings=2), or per month (monthly servings =1). (See Nutrition Questions in Appendix A or C for more details.)

Participant feedback was assessed using questions developed by the health education team at the JCHD. A Likert scale measured participants' views on the number of emails sent during the study. Two essay questions measured participants' like and what they would change for future WHPPs. (See Feedback Questions in Appendix B or C for more details).

Data Analysis

The survey results were analyzed using IBM SPSS Statistics and Microsoft Excel. First, descriptive statistics (frequency, percentage, mean, and standard deviation) summarized the univariate survey results. Next, the attribution rate formula was the number of participants who responded to the weekly progress report forms or post-challenge survey divided by the number

of participants who completed the pre-challenge survey (Belton, 2018). Third, paired t-tests using the r Pearson measured the statistical significance at a P-value of 0.05 between the pre-challenge and post-challenge survey results for the intervention group and between the pre-challenge results for the control and intervention groups (Boston University School of Public Health, 2016). Fourth, Cohen's d calculated the effect sizes to determine practical significance between means (Lakens, 2013). Effect size can be small (d or X^2 =0.2), medium (d or X^2 =0.5), and large (d or X^2 =0.8) (Lakens, 2013).

Results

Sample Demographic Characteristics

Of the 90 employees at JCHD, 34 employees participated at baseline measured by the pre-challenge survey (response rate of 37.78 percent). As shown in Table 1, the average age of participants was 42.63 years old, and 85.29 percent were female. All of the participants were white and non-Hispanic. The majority of the participants were married (66.67 percent) and received at least four years of college (60.76 percent). Of the 34 participants, only 6.09 percent held an executive leadership position.

Table 1. Demographic Characteristics of the Participants							
Characteristics	N	%	M	SD			
Age (years)	25	-	42.63	10.93			
Sex							
Male	5	14.71%	1.85	0.35			
Female	29	85.29%					
Non-Binary	0						
Race							
White	34	100.00%					
Black or African American	0	0.00%					
American Indian or Alaska Native	0	0.00%	1.00	0.00			
Asian	0	0.00%					

Native Hawaiian or Pacific Islander	0	0.00%		
Other	0	0.00%		
Marital Status				
Married	22	66.67%		
Widowed	0	0.00%		
Divorced	2	6.06%	2.27	1.90
Separated	1	3.03%		
Never married	5	15.15%		
Member of unmarried couple	3	9.09%		
Education Level				
Never attended school or only attended kindergarten	0	0.00%		
Grades 1 through 8 (elementary)	0	0.00%		
Grades 9 through 11 (some high school)	0	0.00%	5.53	0.65
Grades 12 or GED (high school graduate)	3	8.82%		
College 1 years to 3 years (some college or technical school)	10	29.41%		
College 4 years or more (college graduate)	21	60.76%		
Leadership Status				
No supervisory responsibility	22	66.67%		
Team Leader	4	12.12%	1.61	0.95
Manager	5	15.15%		
Executive	2	6.06%		

Study Outcomes: Progress Evaluation

Throughout the four-week study, the participants fell into an intervention group (N=14) or a control group (N=20) based on survey completion. Table 2 explains the inclusion criteria for the intervention and control group in more detail. As shown in Graph 1, the attribution rate of participants in the study declined from 100 percent at the pre-challenge survey to 41.14 percent at the post-challenge survey. Graphs 2 and 3 show participant means from weekly progress report forms. During the four-week study, participants watched an average of 2.95-3.11 out of 5 possible guided meditation videos per week. In addition, participants consumed an average of 18.46-22.79 out of 28 servings of fruits and vegetables per week.

Table 2: Methodological	Framework o	of Study
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Sample:

90 Participants

Inclusion Criteria:

Employees at JCHD

Intervention Group:

14 Participants

Inclusion Criteria:

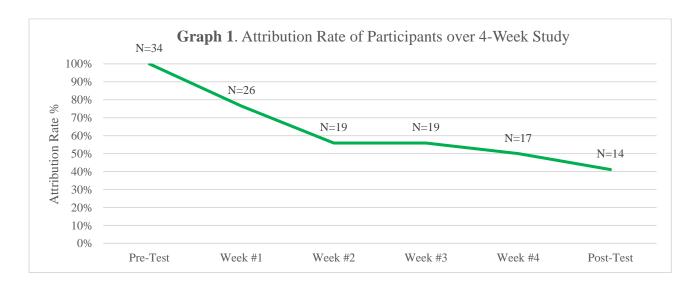
- Employees at JCHD
- Completed Pre-Challenge Survey
- Completed ALL Weekly Progress Report Forms (Total of 4)
- Completed Post-Challenge Survey

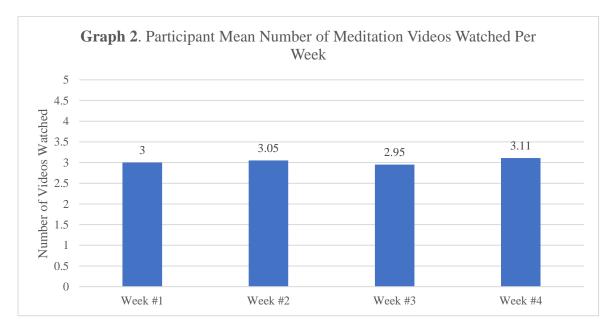
Control Group:

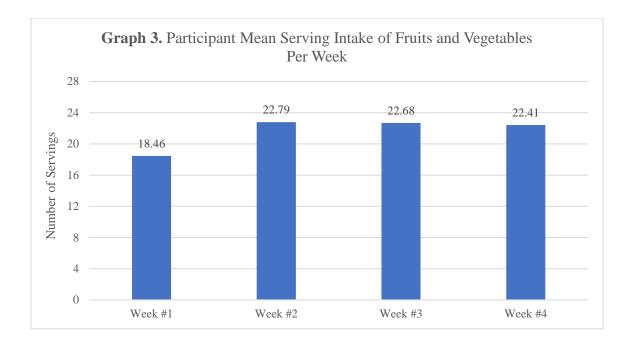
20 Participants

Inclusion Criteria:

- Employees at JCHD
- Completed Pre-Challenge Survey







Study Outcomes: Intervention Group- Baseline VS. End-line Evaluation

Table 3 displays the mean (M) and standard deviation (SD) for the intervention group (N=14) for each PSS item. After the t-tests, two out of the ten items (unable to control and could not overcome) were significantly different due to a p-value of 0.05 or lower. Cohen's d reports that item 2 (unable to control) had a medium effect size, and items 3 (nervous and stressed) and 5 (going your way) had a small effect size. All other items had irrelevant effect sizes.

Table 4 displays the M and SD for the intervention group (N=14) for each fruit and vegetable consumption item. After the t-tests, none of the six items were statistically significant. However, Cohen's d reports that item 4 (dark green vegetables) had a medium effect size. Items 1, 2, 3, 5, and 6 (100% fruit juice, fresh/frozen/canned fruit, cooked/canned beans, orange-colored vegetables, and other vegetables) had a small effect size.

Table 3: Mean PSS pre-test and post-test scores, significance, and effect size							
	Pre-Test Post-Test						
PSS Item	M	SD	M	SD	2 tailed p-value	Effect size d (X ²)	
1. Been upset	1.86	1.03	1.79	0.89	0.83	0.07	

2. Unable to control	2.14	1.03	1.57	0.94	0.04*	0.59
3. Nervous and stressed	2.64	1.01	2.43	0.85	0.34	0.22
4. Felt confident	1.21	0.89	1.07	1.57	0.61	0.11
5. Going your way	1.79	0.58	1.57	0.94	0.34	0.28
6. Could not cope	2.57	1.09	2.71	0.91	0.67	0.14
7. Control irritations	1.57	0.94	1.57	0.85	1.00	0.00
8. On top of things	1.64	0.84	1.5	0.85	0.34	0.17
9. Been angered	1.86	0.86	1.71	0.91	0.50	0.17
10. Could not overcome	1.57	1.16	1.14	1.03	0.03*	0.40

PSS= perceived stress score; M= mean; SD= standard deviation; *statistically significant at level of p < 0.05. d = 0.2 (small effect); d=0.5 (medium effect); d=0.8 (large effect)

	Pre-	Pre-Test N = 14		-Test		
	N =			= 14		
Item	M	SD	M	SD	2 tailed p-value	Effect size d (X ²)
1. 100% fruit juice	1.07	0.99	1.29	0.83	0.43	0.24
2. Fresh, frozen, canned fruit	2.00	1.04	2.36	0.50	0.31	0.44
3. Cooked or canned beans	1.43	0.85	1.64	0.63	0.49	0.28
4. Dark green vegetables	1.57	1.01	2.07	0.73	0.11	0.57
5. Orange-colored vegetables	1.36	0.93	1.64	0.74	0.34	0.33
6. Other vegetables	2.07	1.07	2.29	0.47	0.53	0.27

M= mean; SD= standard deviation; *statistically significant at level of p < 0.05; d = 0.2 (small effect). d=0.5 (medium effect); d=0.8 (large effect)

Study Outcomes: Control VS. Intervention Groups

Table 5 displays the M and SD for demographic items for the control (N=20) and intervention (N=14) groups. Race and Hispanic-Status demographic items were not included in statistical analysis because there were no differences. T-tests showed statistical significance for years between the control and intervention groups. In addition, Cohen's d reports that years, sex, and education level had large effect sizes and leadership status had a medium effect size.

Table 6 displays the M and SD for PSS items separated by control (N=20) and intervention (N=14) groups. After the t-tests, none of the PSS items were statistically significant. However, Cohen's d reports that items 1, 8, 9, and 10 (been upset, on top of things, been

angered, and could not overcome) had large effect sizes. PSS items 2, 3, 5, and 7 (unable to control, nervous/stressed, going your way, and control irritations) had medium effect sizes. PSS items 4 and 6 (felt confident and could not cope) had small effect sizes.

Table 7 displays the M and SD for each fruit and vegetable consumption item separated by control (N=20) and intervention (N=14 groups). The t-tests show statistical significance for items 2 and 5 (fresh/frozen/canned fruit and orange-colored vegetables) between the control and intervention groups. Cohen's d reports that items 1, 2, 3, 4, and 6 (100% fruit juice, fresh/frozen/canned fruit, cooked/canned beans, dark green vegetables, and other vegetables) had large effect sizes. Fruit and vegetable consumption item 5 (orange-colored vegetables) had a medium effect size.

Table 5: Control vs. Intervention mean demographic pre-test scores, significance, and effect size									
	Control N = 20		Intervention N = 14						
Item	M	SD	M	SD	2 tailed p-value	Effect size d (X ²)			
1.Years	49.50	6.37	35.63	12.75	0.04*	2.47			
2.Sex	1.93	0.27	1.71	0.47	0.19	0.90			
3.Marital Status	1.23	0.44	1.62	0.51	0.10	0.09			
4. Education Level	5.71	0.47	5.57	0.51	0.50	0.71			
5. Leadership Status	1.31	0.48	1.31	0.48	1.00	0.54			

M= mean; SD= standard deviation; *statistically significant at level of p < 0.05; d = 0.2 (small effect); d=0.5 (medium effect); d=0.8 (large effect); degrees of freedom for the t-tests varied between 8 to 13 due to missing data

Table 6: Control VS. Intervention mean PSS pre-test scores, significance, and effect size								
	Cor	ntrol	Interv	ention				
	N =	= 20	N =	= 14				
Item	M	SD	M	SD	2 tailed p-value	Effect size d		
						(X^2)		
1. Been upset	2.21	0.89	1.86	1.03	0.21	0.89		
2. Unable to control	2.14	1.10	2.14	1.03	1.00	0.52		
3. Nervous and stressed	2.93	0.92	2.64	1.01	0.41	0.75		
4. Felt confident	1.00	0.78	1.21	0.89	0.49	0.34		
5. Going your way	1.93	0.92	1.79	0.58	0.61	0.66		
6. Could not cope	2.36	1.22	2.57	1.09	0.60	0.38		
7. Control irritations	1.71	0.83	1.57	0.94	0.70	0.63		

8. On top of things	2.07	0.83	1.64	0.84	0.25	0.85
9. Been angered	2.29	1.07	1.86	0.86	0.31	0.82
10. Could not overcome	2.07	1.07	1.57	1.16	0.19	0.91

PSS= perceived stress score; M= mean; SD= standard deviation; *statistically significant at level of p < 0.05; d = 0.2 (small effect); d=0.5 (medium effect); d=0.8 (large effect); degrees of freedom for the t-tests varied between 8 to 13 due to missing data

Table 7: Control VS. Intervention mean fruit and vegetable consumption pre-test scores, significance, and effect size								
	Con	itrol	Interv	ention				
	N =	= 20	N = 14					
Item	M	SD	M	SD	2 tailed p-value	Effect size d (X ²)		
1. 100% fruit juice	1.07	1.21	1.07	0.99	1.00	1.57		
2. Fresh, frozen, canned fruit	1.21	0.98	2.00	1.04	0.04*	1.25		
3. Cooked or canned beans	1.00	0.96	1.43	0.85	0.08	0.85		
4. Dark green vegetables	0.93	1.14	1.57	1.01	0.10	1.37		
5. Orange-colored vegetables	0.71	0.73	1.36	0.93	0.01*	0.75		
6. Other vegetables	1.71	1.20	2.07	1.07	0.37	1.45		
M= mean: SD= standard deviat	ion·*statisti	ically signif	icant at leve	1 of n < 0.05	$6 \cdot d = 0.2$ (small effe	ect): d=0.5		

M= mean; SD= standard deviation; *statistically significant at level of p < 0.05; d =0.2 (small effect); d=0.5 (medium effect); d=0.8 (large effect); degrees of freedom for the t-tests varied between 8 to 13 due to missing data

Study Outcomes: Participant Feedback

On the weekly progress report #1 and the post-challenge survey, participants provide quantitative and qualitative feedback on the study content and design elements. Using a Likert scale, 93.10 percent of participants (N=26) stated that the number of emails received throughout the study was neither too much nor too little. Table 8 shows what participants like and would change about the WHPPs in the future. First, the staff enjoyed how the challenge motivated them to eat healthier, included daily reminder emails, shared mediation videos, and provided recipes for dinners and snacks throughout the week. Second, staff would add an online daily progress tracker, an exercise component, group activities, and more competition.

Table 8. Qualitative feedback from participants throughout the study	
What participants liked about the staff wellness	What participants would change about the staff
challenge:	wellness challenge:

Provides motivation to eat better and take care of	Online daily tracker
myself better	
The mediation videos	Add exercise component
The recipes (great for snack and lunch ideas)	More recipes before the weekend so I can buy the
	ingredients at the grocery store
The emails were a great way to stay on track	Group mediations/other wellness activities
More mindful of fruit and vegetable intake	Make the challenge more competitive within each
	department
Improved my mental health	Lunch n Learns

Discussion

This study tested the effectiveness of an online-based short-term WHPP for employees at the JCHD. The expected results stated that intervention participants would have statistically significant changes in stress levels and fruit and vegetable consumption from the pre-challenge to the post-challenge survey. The actual results found that the mediation videos were effective at reducing stress. However, the self-tracking and nutrition education were not effective at increasing fruit and vegetable intake. The effect sizes for fruit and vegetable consumption items demonstrate practical significance for the intervention group. Future studies with larger sample sizes will most likely show statistically significant relationships between these variables.

In addition, there were several significant differences between the control and intervention groups at baseline. For example, the intervention group was younger than the control group, and the intervention group tended to eat more fruit and orange vegetables than the control group. However, there were no differences in stress levels. Overall, one can assume that employees who participated had healthy lifestyle habits before the WHPP.

The results build on existing literature, suggesting that MM for working adults can reduce stress levels. Lara-Cabrera and colleagues (2021) performed an online-cross sectional survey on the relationship between perceived stress and mediation for nurses. Nurses who mediated had

reduced perceived stress and improved resilience (Lara-Cabrera et al., 2021). In addition, Makara-Studzińska and colleagues (2021) conducted a study on mediation to reduce perceived stress in air traffic control personnel in Poland. The results showed a significant relationship between lower perceived stress and practicing mediation (Makara-Studzińska et al., 2021). Last, Weiner and colleagues (2020) conducted a randomized control trial study to evaluate the effectiveness of mediation at reducing stress levels for healthcare workers during the COVID-19 pandemic. The primary outcomes measure a decreased stress level using PSS with 10-items after eight weeks (Weiner et al., 2020).

The practical significance of fruit and vegetable consumption contributes to a clearer understanding of nutrition education at the workplace. Risica and colleagues (2018) conducted a cluster-randomized trial to assess fruit and vegetable consumption in the workplace. Results stated that nutrition education significantly impacts fruit and vegetable intake while being cost-effective (Risica et al., 2018). In addition, Hochart & Lang (2011) initiated a comprehensive WHPP focused on nutrition education in Kansas City, MO. The results showed that nutrition education effectively increased fruit and vegetable intake. In turn, participants reduced chronic disease risk factors and workplace absenteeism (Hochart & Lang, 2011). However, it is necessary to highlight that WHPPs usually target nutrition and physical activity together (Power et al., 2014). As a result, there are a limited number of studies solely focusing on nutrition education and fruit and vegetable consumption (Power et al., 2014).

The differences between the intervention and control groups support the TPB. Perceived behavior control and positive attitudes are the best predictors of participation in a WHPP (Röttger et al., 2017). First, perceived behavior control helps explain why the control group did not participate in the wellness activities. Employees at higher risk for chronic disease have lower

participation in WHPPs due to fear of failure to complete health behaviors (Newman et al., 2015). Second, participant feedback demonstrates employees overall had positive attitudes throughout the wellness activities. In the future, leadership can increase participation by spreading positive attitudes about WHPPs and highlighting all employee progress (Röttger et al., 2017).

Strengths and Limitations

This study has several strengths. First, the study results help fill research gaps on the effectiveness of WHPPs in public health and small business settings. Second, the study results show that mediation is a cost-effective way to reduce stress among working adults. For example, the guided-mediation videos were free on YouTube for participating employees. Third, the study results tell a story of the positive impact of a WHPP by incorporating qualitative and quantitative data collection methods. Last, to the researcher's knowledge, no other studies have reviewed the use of a WHPP at a local health department in the United States. Adding to the research field will help assist in the overarching goal of improving the wellbeing of the public health workforce through the use of WHPPs (Stone et al., 2019).

This study has several limitations. First, the results from this study are not generalizable to different workplace settings or different wellness programs due to the small sample size and lack of diversity among participants (Abraham, 2019). Small sample size limits the ability to determine the statistical significance of relationships between participants (Faber & Fonseca, 2014). Study participants were all White and Non-Hispanic. However, the JCHD serves a community that is 96 percent White and Non-Hispanic, so the employee demographics are characteristic of local communities (Sellers et al., 2019; United States Census Bureau, 2020). As a result, the findings of this study are only representative of employees at JCHD. Second, this

WHPP has a self-selection bias. This bias can arise when employees have an option to participate (Newman et al., 2015). Third, the attribution rate of the study shows that many participants did not complete the challenge resulting in missing study data. Last, this study did not include long-term outcomes. Therefore, the potential health benefits and healthcare savings in the future are unknown (Fitzgerald et al., 2018).

Implications for the Public Health Field

The public health sector had been critical in America's COVID-19 response. Personnel at all levels of public health has worked around the clock for almost two years to support outbreak control by implementing community mitigation strategies, testing infrastructure, contact tracing efforts, and vaccination campaigns (DeSalvo et al., 2021). Currently, public health is facing pandemic burnout and history of underfunding and workforce challenges (Stone et al., 2021). The future of public health requires investment in the workforce to continue essential public health services and prepare for future emergencies (Stone et al., 2021).

Since the recession in 2008, local and state public health departments have eliminated over 60,000 jobs (DeSalvo et al., 2021). Funding for federal Public Health Emergency Preparedness programs has declined by \$265 million from 2002 to 2020 (DeSalvo et al., 2021). As a result, the public health field was in a workforce and financial deficit before the start of the COVID-19 pandemic (Scales et al., 2021). Throughout the pandemic, a growing number of people in public health are planning to retire or leave the field due to stress and increasing political polarized environments (Stone et al., 2020). In addition, politics and backlash of community mitigation strategies resulted in the removal of many public health leaders (Stone et al., 2020). These open positions could be filled by a new generation of public health graduates (de Beaumont Foundation & Association of State and Territorial Health Officials [ASTHO],

2017). However, many are opting out of the field due to a lack of competitive pay, opportunities for promotion, and workplace environment (de Beaumont Foundation & ASTHO, 2017).

Thereby, it is time to invest in the public health workforce using workplace wellness to create healthy and happy communities in the future. This study shows that WHPPs can have a positive short-term impact on stress levels and nutrition. However, the benefits of WHPPs go beyond positive health outcomes. First, Vargas-Martínez and colleagues (2021) found that WHPP can reduce health care costs by up to 25 percent. Second, Nur and colleagues (2021) explain that employee morale increases when a workplace invests in health. Morales is a chief determinate of employee productivity and retention (Nur et al., 2021). Last, Jones and colleagues (2019) showed that comprehensive WHPPs are a great way to recruit new employees, especially millennials who are increasingly interested in wellness at the workplace. Overall, public health needs to join the WHPP trend to retain employees and be competitive with other industries.

The COVID-19 pandemic provides a reminder of the increasing social values of an effective and robust public health system (DeSalvo et al., 2021). The rising rate of infectious disease outbreaks with pandemic potentials and deadly natural disasters is here to stay due to climate change (Bloom & Cadarette, 2019; Thomas 2020). If support for the public health workforce continues to decline, there will be an inability to respond to future emergencies (de Beaumont Foundation & ASTHO). As a result, there is an urgent need to invest in the public health workforce, starting with cost-effective, evidence-based workplace wellness programs.

Recommendations for Jefferson County Health Department

By being a part of this study, JCHD is leading the way for a healthier public health workforce. In the future, JCHD can continue to invest in the health of its employees through the

following action steps. First, future WHPPs can incorporate free under initialized resources offered to JCHD employees. All employees at the health department have access to Personal Assistance Services (PAS) (Personal Assistance Services [PAS], 2021). PAS are pre-paid benefits that can help strengthen employee work and home lives. The benefits include health coaches, fitness coaches, child care specialists, and many more resources (PAS, 2021). In addition, JCHD receives insurance through United Healthcare who provides online health resources and promotions for wellness (United Healthcare [UHC], 2021). For example, United Healthcare works with Real Appeal to help motivate employees to improve their health using a virtual weight loss program (UHC, 2021). Currently, these programs are not utilized by JCHD employees due to their online self-paced nature, voluntary enrollment, and lack of incentives. As a result, future WHPPs at JCHD could use PAS and United Healthcare resources while promoting competition and rewards.

Second, JCHD needs to secure funding for future wellness programs. For this study, the insurance company Arch Brokerage Inc. provided incentives. However, Arch Brokerage Inc. is not a reliable source of donations for future WHPPs. Possible avenues for funding include grants and partnerships with local universities. The Missouri Workplace Wellness Mini-Grant Application offers up to \$6,000 to Missouri worksites who invest in programs or policies impacting employee health (Missouri Department of Health and Senior Services [DHSS], 2020). The grant is a partnership with the University of Missouri who has developed the WorkWell Missouri Toolkit to support worksites in their wellness journey. However, grant monies cannot support the funding of employee incentives (DHSS, 2020). Research partnerships between corporations and universities are a common practice to fund and track long-term outcomes of WHPPs (Lutchen, 2018). As a result, a local health department provides the perfect location for

small-scale WHPP research for undergraduate or graduate students in public health. Local universities, such as Saint Louis University or Washington University in Saint Louis, may be interested in working with JCHD due to their passion for supporting the public health field (Saint Louis University, 2021; Washington University in Saint Louis 2021).

Third, JCHD needs to reinvigorate the Wellness Committee to plan, implement, and evaluate future WHPPs. During the planning stage, the committee should work to develop a schedule and ideas for WHPPs (Cigna Health, 2013). Based on employee participation, a 4-week program every quarter of the year (Q1- February, Q2-May, Q3- August, Q4- November) would promote healthy lifestyles year-round without wellness program burnout. Low-cost ideas for future WHPPs include exercise (prepare for a community walk/run, daily steps, yoga), sleep, water intake, smoking cessation, essentials of budgeting, going green, and emotional support (Moda Health, 2021). Remember, most people can only target one to two health habits during a WHPP (Phillips et al., 2019). In addition, future programs should include more group activities and competition based on employee feedback. During the implementation stage, the committee should participate, motivate, and support employees through each challenge at all levels of the organization (Cigna Health, 2013). During the evaluation process, the committee should analyze short- and long-term health outcomes and economic savings of WHPPs (Cigna Health, 2013; Song & Baicker, 2019).

Last, JCHD employees should receive free health risk assessments (HRA) and biometric screenings. HRA is a health questionnaire that evaluates an individual's health risks and quality of life (Newman et al., 2015). Biometric screenings measure health characteristics like body mass index, blood pressure, blood cholesterol, and aerobic fitness (Arena et al., 2014). As a result, employees identified as high risk for chronic diseases can receive additional support

during WHPPs (Newman et al., 2015). To reduce the cost of assessments and screenings, JCHD could partner with a local hospital to develop a community health fair where employees and community members can receive HRAs and screenings free of charge (Arena et al., 2014).

Conclusion

The COVID-19 pandemic highlights the urgent need to invest in the future of the public health workforce. Lack of funding and human resources has caused alarming levels of burnout. As a result, an increasing number of public health personal are retiring or leaving the industry. If the public health system continues to decline, there will be a lack of ability to respond to future public health emergencies like pandemics and natural disasters. This situation will lead to horrid consequences for population health. Excitingly, workplace wellness programs provide a way for public health to invest in its workforce. WHPPs have the opportunity to improve health risk factors, healthcare costs, morale, and recruitment in the public health workforce.

Currently, there is a limited amount of research available for workplace wellness in the public health sector. Future interventional research studies should address WHPPs for long-term health and economic outcomes, employee motivation factors, the impact of group support, and more comprehensive wellness programs with a variety of activities. In addition, research should explore the role of partnerships between public health, insurance companies, and universities in future WHPP studies.

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Abstract

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Appendix A: Pre-Challenge Survey

Question #1:

Hello, my name is Emily Muensterman. I am a UMKC student. I am conducting a research study about how to improve mental wellbeing and intake of fruits and vegetables in a workplace setting at Jefferson County Health Department.

If you choose to be in this study, you will be asked to complete brief complete 2 surveys using an internet based questionnaire. Each survey will take 10-15 minutes to complete, and you may complete them from your work computer or mobile device. In addition, you will be asked to complete 4 progress report forms using an internet based questionnaire. Each progress report form will take 5-10 minutes to complete, and you may complete them from your work computer or mobile device.

Your participation is entirely voluntary; you may skip any questions that you don't want to answer or choose to stop participating at any time. Your responses will be anonymous; there is no way for the research team to identify you or your responses to the survey.

Do you have any questions about the research study? Please contact Emily Muensterman at egmf7w@umsystem.edu or Joseph Lightner at lightnerj@umkc.edu. If you have questions or concerns about your rights as a research participant, you can call the UMKC Research Compliance at 816-235-5927. If you want to participate in this study, click the Accept button to start the survey.

 \circ Accept \rightarrow

Question #2: Enter Your Employee ID # (Fill in the Blank):
Question #3: Enter Your Date of Birth (mm/dd/yyyy)://

Question #4: Demographic Question

What is your sex?

- o Male
- o Female
- o Non-binary/ third gender
- Prefer not to say

Question #5: Demographic Question

Are you Hispanic or Latino?

- o Yes
- o No

Question #6: Demographic Question

What is your race? Do you consider yourself ... (Select all that apply)?

- o White
- o Black or African American
- o American Indian or Alaska Native
- o Asian
- o Native Hawaiian or Pacific Islander
- Other

Question #7: Demographic Question

What is your marital status?

- Married
- Widowed
- o Divorced
- Separated
- Never married
- o Member of unmarried couple

Question #8: Demographic Question

What is the highest grate of school you have completed?

- o Never attended school or only attended kindergarten
- o Grades 1 through 8 (elementary)
- o Grades 9 through 11 (some high school)
- o Grades 12 or GED (high school graduate)
- o College 1 years to 3 years (some college or technical school)
- o College 4 years or more (college graduate)

Question #9: Demographic Question

What is your level of supervisory responsibility?

- No supervisory responsibility
- o Team Leader
- Manager
- o Executive

Question #10: Mental Wellbeing Matrix

For each question choose from the following alternative:

	0- never	1- almost never	2- sometimes	3- fairly often	4- very often
n the last month, how often have you been upset pecause of something that happened unexpectedly?	0	0	0	0	0
n the last month, how often have you felt that you were unable to control the important things in your life?	0	0	0	0	0
n the last month, how often have you felt nervous and tressed?	0	0	0	0	0
n the last month, how often have you felt confident about your ability to handle your personal problems?	0	0	0	0	0
n the last month, how often have you felt that things were going your way?	0	0	0	0	0
n the last month, how often have you found that you could not cope with all the things that you had to do?	0	0	0	0	0
n the last month, how often have you been able to control irritations in your life?	0	0	0	0	0
n the last month, how often have you felt that you were on top of things?	0	0	0	0	0
n the last month, how often have you been angered because of things that happened that were outside of your control?	0	0	0	0	0
n the last month, how often have you felt difficulties were piling up so high that you could not overcome hem?	0	0	0	0	0

Question #11: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, how many times per day, week or month did you drink 100% PURE fruit juices? Do not include fruit-flavored drinks with added sugar or fruit juice you made at home and added sugar to. Only include 100% juice.

0	# of servings per day
0	# of servings per week
0	# of servings per month
	Don't know/Not Sure

Question #12: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, not counting juice, how many times per day, week, or month did you eat fruit? Count fresh, frozen, or canned fruit.

С	# of servings per day
С	# of servings per week
0	# of servings per month

Don't know/Not Sure

Question #12: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings.

During the past month, how many times per day, week, or month did you eat cooked or canned beans, such as refried, baked, black, garbanzo beans, beans in soup, soybeans, edamame, tofu, or lentils. Do NOT include long green beans.

0	# of servings per day
0	# of servings per week
0	# of servings per month
0	Don't know/Not Sure

Question #14: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, how many times per day, week, or month did you eat dark green vegetables for example broccoli or dark leafy greens including romaine, chard, collard greens or spinach.

0	# of servings per day	
0	# of servings per week	_
0	# of servings per month	

Don't know/Not Sure

Question #15: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings.

During the past month, how many times per day, week, or month did you eat orange- colored
vegetables such as sweet potatoes, pumpkin, winter squash, or carrots.
- 6 1 1

0	# of servings per day
0	# of servings per week
0	# of servings per month

Don't know/Not Sure

Question #16: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. Not counting what you just told me about, during the past month, about how many times per day, week, or month did you eat OTHER vegetables? Examples of other vegetables include tomatoes, tomato juice or V-8 juice, corn, eggplant, peas, lettuce, cabbage, and white potatoes that are not fried such as baked or mashed potatoes.

0	# of servings per day	
0	# of servings per week	
0	# of servings per month	
0	Don't know/Not Sure	

Appendix B: Weekly Progress Report Form

*For analysis purposes, create four separate weekly progress form surveys with the same questions. *

Question #1:

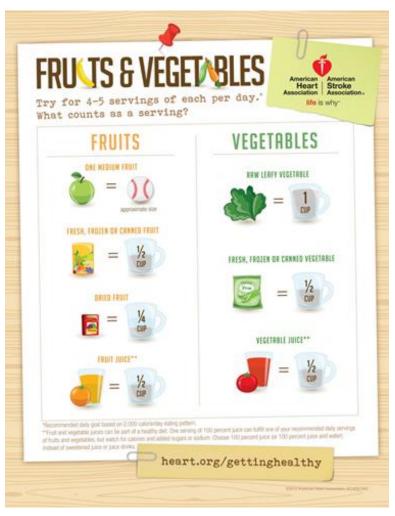
Enter Your Employee ID # (Fill in the Blank):

Question #2:

How many 10-minute meditation videos did you watch this week?

- o One
- o Two
- o Three
- o Four
- o Five

Fruit and Vegetable Serving Size Graphic



Question #3:
How many servings of fruits and vegetables did you eat Monday?
o 1
0 2
0 3
o 4 or more
Question #4:
How many servings of fruits and vegetables did you eat Tuesday?
0 1
0 2
0 3
o 4 or more
Question #5:
How many servings of fruits and vegetables did you eat Wednesday
0 1
0 2
0 3
o 4 or more
Question #6:
How many servings of fruits and vegetables did you eat Thursday?
0 1
0 2
0 3
o 4 or more
Question #7:
How many servings of fruits and vegetables did you eat Friday?
0 1
0 2
0 3
o 4 or more

Question #8:

How many servings of fruits and vegetables did you eat Saturday?

Question #12: Feedback Question

0	1							
0	2							
0	3							
0	4 or more							
Quest	ion #9:							
How 1	nany servings of fruit	s and vegetables	did you eat Sund	lay?				
0	1							
0	2							
0	3							
0	4 or more							
	Feedbac	k Questions for	Weekly Progress	Report Form	ı #1			
Quest	ion #10: Feedback Qu	estion						
	rate your thoughts or nge: (Likert Scale)	the number of o	emails you receive	ed during the	e first week of the			
Please	rate your thoughts on the nu	mber of emails you re	eceived throughout the	challenge:				
	Neither too much nor too Far too little Slightly too little little Slightly too much Far too much							
	the amount of emails I received ut the challenge was	0	0	0	0	0		
Quest	ion #11: Feedback Qu	estion						
So far	, what do you like abo	out the staff well	ness challenge? (l	Essay Questi	on)			

So far, what would you change about the staff wellness challenge? (Essay Question)

Appendix C: Post-Challenge Survey

Question	າ #1:

Enter '	Your Employee	ID #: (Fill in	the blank)	

Question #2: Mental Wellbeing Question

For each question choose from the following alternative:

	0- never	1- almost never	2- sometimes	3- fairly often	4- very often
In the last month, how often have you been upset because of something that happened unexpectedly?	0	0	0	0	0
In the last month, how often have you felt that you were unable to control the important things in your life?	0	0	0	0	0
in the last month, how often have you felt nervous and stressed?	0	0	0	0	0
n the last month, how often have you felt confident about your ability to handle your personal problems?	0	O	0	0	0
In the last month, how often have you felt that things were going your way?	0	0	0	0	0
In the last month, how often have you found that you could not cope with all the things that you had to do?	0	0	0	0	0
In the last month, how often have you been able to control irritations in your life?	0	0	0	0	0
In the last month, how often have you felt that you were on top of things?	0	0	0	0	0
In the last month, how often have you been angered because of things that happened that were outside of your control?	0	0	0	0	0
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	0	0	0	0

Question #3: Nutrition Question

Instructions : Please select day, week, or month and then fill in the blank with # of servings.
During the past month, how many times per day, week or month did you drink 100% PURE fruit
juices? Do not include fruit-flavored drinks with added sugar or fruit juice you made at home and
added sugar to. Only include 100% juice.

0	# of servings per day
0	# of servings per week
0	# of servings per month
0	Don't know/Not Sure

Question #4: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, not counting juice, how many times per day, week, or month did you eat fruit? Count fresh, frozen, or canned fruit.

С	# of servings per day
Э	# of servings per week
С	# of servings per month

o Don't know/Not Sure

Question #5: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, how many times per day, week, or month did you eat dark green vegetables for example broccoli or dark leafy greens including romaine, chard, collard greens or spinach.

0	# of servings per day
0	# of servings per week
0	# of servings per month

Don't know/Not Sure

Question #6: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. During the past month, how many times per day, week, or month did you eat orange- colored vegetables such as sweet potatoes, pumpkin, winter squash, or carrots.

0	# of servings per day	rvings per day	
0	# of servings per week	rvings per week	_
0	# of servings per month	rvings per month	
	Don't know/Not Sure		

Question #7: Nutrition Question

Instructions: Please select day, week, or month and then fill in the blank with # of servings. Not counting what you just told me about, during the past month, about how many times per day, week, or month did you eat OTHER vegetables? Examples of other vegetables include tomatoes, tomato juice or V-8 juice, corn, eggplant, peas, lettuce, cabbage, and white potatoes that are not fried such as baked or mashed potatoes.

- o # of servings per day _____
- o # of servings per week _____
- o # of servings per month _____
- Don't know/Not Sure

Question #8: Feedback Question

What are some things we could have done to increase your participation/motivation (if any)? (Essay Question)

Question #9: Feedback Question

Please rate your thoughts on the number of emails you received throughout the challenge: (Likert Scale)

Please rate your thoughts on the number of emails you received throughout the challenge:

	Neither too much nor too				
	Far too little	Slightly too little	little	Slightly too much	Far too much
I believe the amount of emails I received throughout the challenge was	0	0	0	0	0

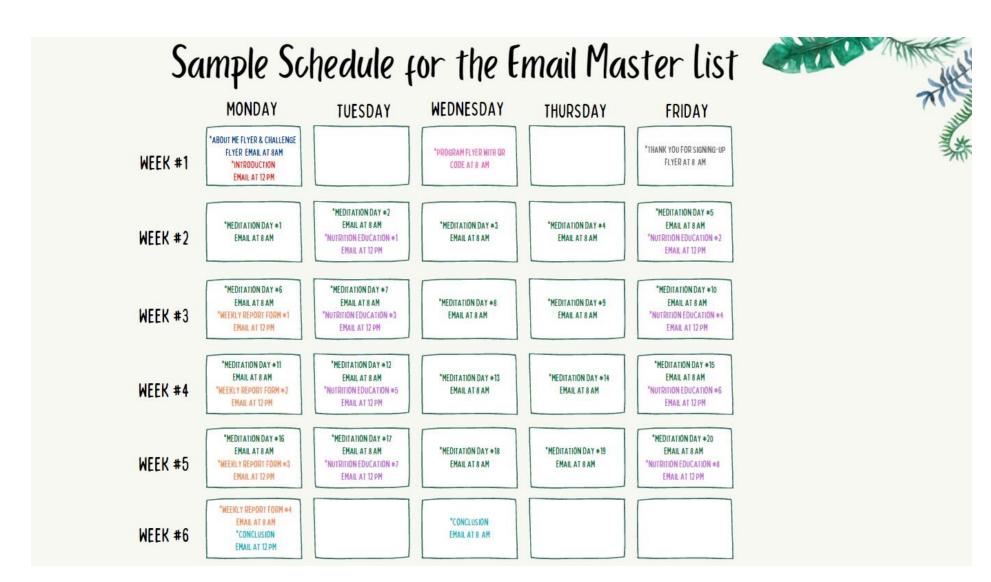
Question #10: Feedback Question

Any other comments or suggestions on how to improve future employee wellness challenges? (Essay Question)

Appendix D: Challenge Calendar

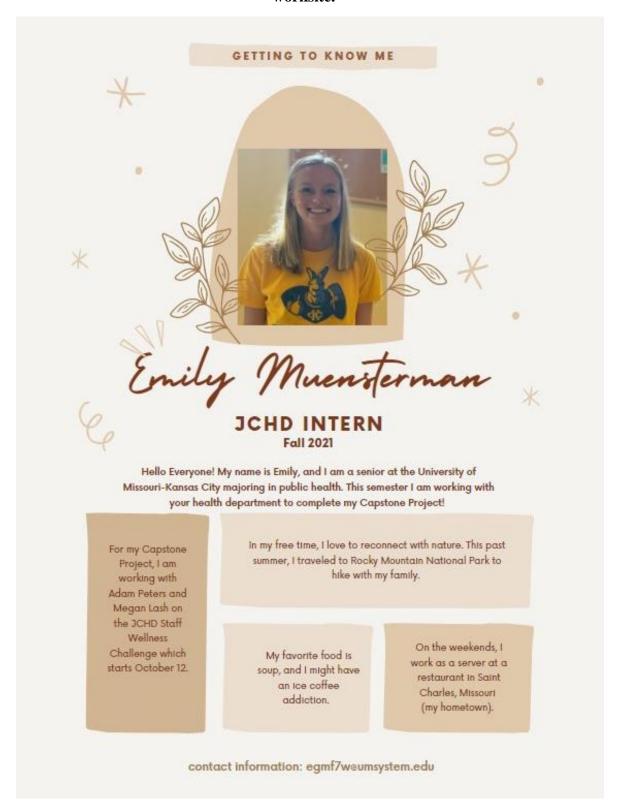


Appendix E: Sample Intervention Schedule



Appendix F: About Me Flyer

*An "About Me Flyer" is a great way to introduce the research team member to a new worksite. *



Appendix G: Challenge Flyer

JCHD Staff Wellness Challenge

Join your coworkers for a workplace wellness program from October 11 to November 8!

1.

Improve Stress Levels Through 10 Minute Daily Meditation Videos 2.

Promote Weight
Loss by Eating 4
Servings of Fruits
and Veggies
Everyday

3.

Receive Fun Nutrition Tips, Tricks, and Recipes 4.

Win Prizes by
Completing
Surveys and
Weekly Progress
Reports

Start Living A Healthier Life Today!

Appendix H: Introduction Email Script

Hello JCHD Staff,

Being an employee at the Jefferson County Health Department can be a stressful job. Every day, you interact with community members, health promotion projects, and the seemingly neverending stream of COVID-19 information. The **JCHD Staff Wellness Challenge** is the perfect solution. Join your coworkers for a workplace wellness program this fall from the week of **October 12th to November 8th**!

There are two goals for the JCHD Staff Wellness Challenge:

- 1. Improve stress levels through daily meditation
- 2. Promote healthy eating through nutrition education and increased fruit and vegetable consumption

Watch this video (https://youtu.be/_Xns-eDBmY4) for more information about the challenge, or you can read the challenge details below:

During the JCHD Staff Wellness Challenge, staff members can participate in a variety of activities:

- Monday-Friday: staff members will receive an email with a ten minute guided meditation video from the Headspace and Calm YouTube Channels
- Monday-Sunday: staff members will try to eat at least 4 servings of fruit and vegetables each day
- Mondays & Thursdays: staff members will receive an email on nutrition topics and easy-to-follow recipes

During the JCHD Staff Wellness Challenge, staff members can track their progress using:

- Complete Pre- & Post-Challenge Surveys using Qualtrics URL Links
- Complete 4 Weekly Progress Report Forms using Qualtrics URL Links
- Challenge Calendar

How to Access Employee ID for Qualtrics Surveys:

- To find your Employee ID#, first, log into Paylocity. On the main Self Service Portal page, click on the "View Employee Record."
- On the Employee Record Page, your ID# will be located directly below your name in the upper left corner.





Prizes for Participating in the JCHD Staff Wellness Challenge:

- Just Participation: Raffle for \$25 gift card & cooler
- 75% Completion of Challenge: Raffle for \$50 gift card

Before the Start of the JCHD Staff Wellness Challenge:

- Pre-Challenge Survey:
 - o https://umkc.co1.qualtrics.com/jfe/form/SV_7P9Axh3zLKHVj5I
- Print out Challenge Calendar:
 - https://www.canva.com/design/DAEozrtDAQA/Qu5yoIuS0o_wdQQHTgYepQ/view?utm_content=DAEozrtDAQA&utm_campaign=designshare&utm_medium=link&utm_source=sharebutton

If you have any questions, please contact:

- Emily Muensterman (College Intern): egmf7w@umsystem.edu
- Adam Peters: Adam.Peters@jeffcohealth.org
- Megan Lash: Megan.Lash@jeffcohealth.org

Appendix I: Daily Meditation Email Scripts

Meditation Day #1 Email

Hello JCHD staff,

Welcome to your first day of mindfulness meditation! In today's video, mindfulness expert Andy Puddicombe describes the transformative power of doing nothing for 10 minutes a day.

Link for Daily Video: https://youtu.be/qzR62JJCMBQ

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #2 Email

Hello JCHD staff,

Welcome to your second day of mindfulness meditation! This afternoon take a 10 minute break to learn how to disconnect from work and life.

Link for Daily Video: https://youtu.be/-_8HodM4Xi8

Link for YouTube Playlist:

 $\underline{https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA}$



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #3 Email

Hello JCHD staff,

Welcome to your third day of mindfulness meditation! Wednesdays can be stressful, so start your day with a 10 minute guided meditation to learn how to reframe stressful situations.

Link for Daily Video: https://youtu.be/sG7DBA-mgFY

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #4 Email

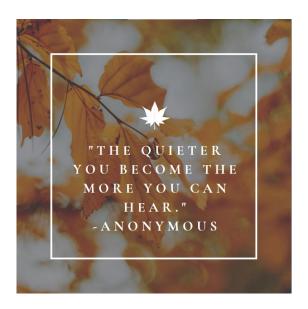
Hello JCHD staff,

Welcome to your fourth day of mindfulness meditation! Congratulations on making it to the end of the work week. At the end of the day, take a break 10 minute break to let go of your anxiety, worry, and stress.

Link for Daily Video: https://youtu.be/syx3a1_LeFo

Link for YouTube Playlist:

 $\underline{https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA}$



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #5 Email

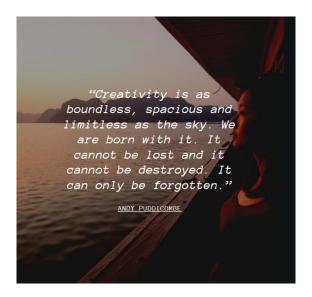
Hello JCHD Staff,

Welcome to your fifth day of mindfulness meditation! This weekend remember to take a 10 minute break to practice self-love.

Link for Daily Video: https://youtu.be/ci4_qbCrraI

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #6 Email

Hello JCHD Staff,

Welcome to your sixth day of mindfulness meditation! In today's video, take a 10 minute break to celebrate the transformative power of community

Link for Daily Video: https://youtu.be/F0CbKoWOors

Link for YouTube Playlist:

 $\underline{https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA}$



Meditation Day #7 Email

Hello JCHD staff,

Welcome to your seventh day of mindfulness meditation! This afternoon take a 10 minute break to explore in a Himalayan Forest.

Link for Daily Video: https://youtu.be/BR6yH4S1UMU

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #8 Email

Hello JCHD staff,

Welcome to your eight day of mindfulness meditation! Wednesdays can be stressful, so start your day with a 10 minute guided meditation to explore the importance of forgetting time.

Link for Daily Video: https://youtu.be/YF_P1ZzYgjA

Link for YouTube Playlist:

 $\underline{https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA}$



Meditation Day #9 Email

Hello JCHD staff,

Welcome to your ninth day of mindfulness meditation! Congratulations on making it to the end of the work week. At the end of the day, take a break 10 minute break to decompress your body and mind.

Link for Daily Video: https://youtu.be/QHkXvPq2pQE

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #10 Email

Hello JCHD staff,

Welcome to your tenth day of mindfulness meditation! This weekend remember to take a 10 minute break to rest your thoughts about the impermanent nature of everything around us.

Link for Daily Video: https://youtu.be/uumInvT4t9Y

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Great job completing half of the JCHD Staff Wellness Challenge © I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #11 Email

Hello JCHD staff,

Welcome to your eleventh day of mindfulness meditation! In today's video, take a 10 minute break to reflect on grief and injustice.

Link for Daily Video: https://youtu.be/_EN8sYGjy3g

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #12 Email

Hello JCHD staff,

Welcome to your twelfth day of mindfulness meditation! This afternoon take a 10 minute break to reconnect with the present.

Link for Daily Video: https://youtu.be/ZToicYcHIOU

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #13 Email

Hello JCHD staff,

Welcome to your thirteenth day of mindfulness meditation! Wednesdays can be stressful, so start your day with a 10 minute guided meditation to relax with a fireside guided meditation under the stars in Lake Powell, Utah.

Link for Daily Video: https://youtu.be/_RyOpEzWyQ8

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #14 Email

Hello JCHD staff,

Welcome to your fourteenth day of mindfulness meditation! Congratulations on making it to the end of the work week. At the end of the day, take a break 10 minute break to open your senses and better connect with the world around you.

Link for Daily Video: https://youtu.be/fkgzQsxdn91

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA

"THE BEST ADVICE EVER
RECEIVED WAS FROM
ONE OF MY MEDITATION
TEACHERS AT THE
MONASTERY: 'BE PRESENT,
BE PATIENT, BE GENTLE,
BE KIND...EVERYTHING
ELSE WILL TAKE CARE OF
ITSELF."
-ANDY PUDDICOMBE

I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #15 Email

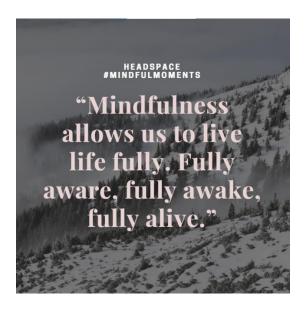
Hello JCHD staff,

Welcome to your fifteenth day of mindfulness meditation! This weekend remember to take a 10 minute break to cool down and get peace of mind.

Link for Daily Video: https://youtu.be/cZJAsW_5SRA

Link for YouTube Playlist:

 $\underline{https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA}$



Meditation Day #16 Email

Hello JCHD Staff,

Welcome to your sixteenth day of mindfulness meditation! In today's video, take a 10 minute break to learn about a Sanskrit word: Santosha.

Link for Daily Video: https://youtu.be/5vI8Kh3-epg

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #17 Email

Hello JCHD staff,

Welcome to your seventeenth day of mindfulness meditation! This afternoon take a 10 minute break to focus on your mental health.

Link for Daily Video: https://youtu.be/IS0kcSNIULw

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #18 Email

Hello JCHD staff,

Welcome to your eighteenth day of mindfulness meditation! Wednesdays can be stressful, so start your day with a 10 minute guided meditation to sooth your soul.

Link for Daily Video: https://youtu.be/Xl_B45DpMLU

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Meditation Day #19 Email

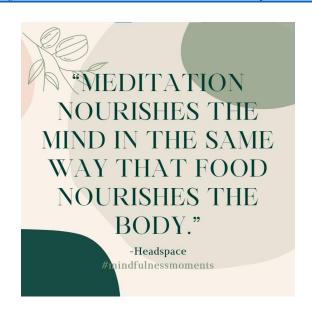
Hello JCHD staff,

Welcome to your nineteenth day of mindfulness meditation! Congratulations on making it to the end of the work week. At the end of the day, take a break 10 minute break to travel to Yosemite National Park.

Link for Daily Video: https://youtu.be/7P1JlwkXvw8

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Meditation Day #20 Email

Hello JCHD staff,

Welcome to your twentieth day of mindfulness meditation! This weekend remember to take a 10 minute break to practice being present.

Link for Daily Video: https://youtu.be/IVx3mFxML80

Link for YouTube Playlist:

https://youtube.com/playlist?list=PLUJtDSWbZXz5JEe2IGqRaSTJO45vNcMOA



Great job completing the JCHD Staff Wellness Challenge meditation videos © I hope you enjoyed your daily meditation, and if you have any questions regarding the challenge, please contact Emily (egmf7@umsystem.edu)!

Appendix J: Biweekly Nutrition Education Email Scripts

Nutrition Education Email #1

Hello Everyone,

Today, you can learn more about the health benefits of eating a rainbow of fruits and vegetables:



Red

Foods like strawberries and beets are rich in carotenoid lycopene which can protect against heart and lung disease.

Orange & Yellow

Foods like pumpkin and bananas provide the body with beta crytohanxin which supports cellular communication.

Blue & Purple

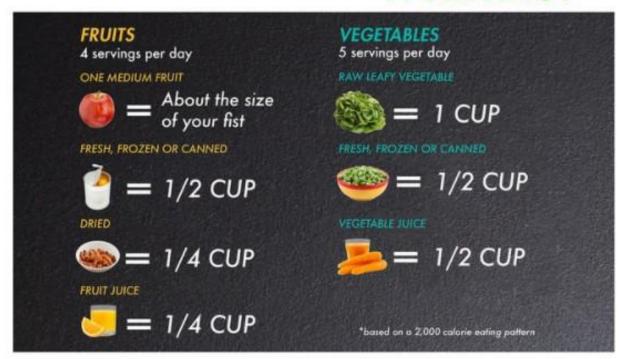
Foods like blueberries and eggplant have powerful antioxidants (anthocyanins) which delay aging and may reduce the formation of blood clots.

Green

Foods like kale and kiwi contain cancer-blocking chemicals like sulforaphane, isocyanate, and indoles.



WHAT'S A SERVING?



The good news is eating the right amount of fruits and vegetables doesn't have to be complicated. Here are some examples of about one serving:

FRUITS

Apple, pear, orange, peach or nectarine: 1 medium

Avocado: Half of a medium Banana: 1 small (about 6" long)

Grapefruit: Half of a medium (4" across)

Grape: 16

Kiwifruit: 1 medium Mango: Half of a medium

mango: Hair of a mealum

Melon: Half-inch thick wedge of sliced watermelon,

honeydew, cantaloupe Pineapple: ¼ of a medium Strawberry: 4 large

EAT SMART ADD COLOR MOVE MORE BE WELL

VEGETABLES

Bell pepper: Half of a large

Broccoli or cauliflower: 5 to 8 florets

Carrot: 6 baby or 1 whole medium (6 to 7" long) Corn: 1 small ear (6" long) or half of a large ear

(8 to 9" long)

Leafy vegetable: 1 cup raw or 1/2 cup cooked

(lettuce, kale, spinach, greens)

Potato: Half of a medium (2½ to 3" across)

Squash, yellow: Half of a small

Sweet potato: Half of a large (2½" across) Zucchini: Half of a large (7 to 8" long)

> #HEALTHYFORGOOD LEARN MORE AT HEART.ORG/HEALTHYFORGOOD

SSS17, American Heart Association, 6/1703/12041





Ingredients

- 5 baby purple potatoes, diced
- 1 lb. whole-wheat pizza dough
- · 4 Tbsp. pesto
- · ½ green bell pepper, diced
- ½ yellow summer squash, diced
- ½ orange bell pepper, diced
- 1 cup cherry tomatoes, halved

Instructions

- 1. Preheat oven to 400°F.
- Arrange potatoes on a baking sheet. Roast for 20 minutes.
- Roll the pizza crust out on a flat surface.Evenly spoon the pesto over the crust.
- Arrange the vegetables in the order of the colors of a rainbow.
- Place back in the oven and bake for 20 minutes.

This week, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

Link to calendar:
 https://www.canva.com/design/DAEozrtDAQA/Qu5yoIuS0o_wdQQHTgYepQ/view?ut
 m_content=DAEozrtDAQA&utm_campaign=designshare&utm_medium=link&utm_sou
 rce=sharebutton

Want more nutrition tips and tricks:

 Contact Megan Lash (<u>Megan.Lash@jeffcohealth.org</u>) to schedule a personalize nutrition consultation!

For More Information:

- o https://www.health.harvard.edu/blog/phytonutrients-paint-your-plate-with-the-colors-of-the-rainbow-2019042516501
- Research on the benefits of eating different fruits & vegetables: https://doi.org/10.1093/ije/dyw319
- o Recipe: https://fruitsandveggies.org/recipes/rainbow-pizza/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #2

Hello Everyone,

Today, you can learn more about shopping smart for nutritious food:

tips for healthy food shopping on a budget

With a little more knowledge, you can enjoy nutritious foods and stick to a budget!

Sales and Shopping Lists

- Look at store sales flyers and available coupons before you shop
- Base your grocery list around meals you plan to make that week

Fruits and Vegetables

- · Local, seasonal produce is usually sold at a lower price
- · Include frozen, canned, and dried forms of fruits and veggies

Meats

- · Buy a larger quantity of meat that is on sale and freeze leftovers
- · Plan a cost-effective and nutritious meatless meal

Grains and Dry Goods

· Buy whole grains and dried beans in bulk when they are on sale

Reduce Waste

Enjoy leftovers for lunch or create new meals with leftover ingredients



recipe very veggie chipotle chicken bowl



Ingredients

- · 2 cup water
- · 1 cup rice blend (we used Lundberg Wild Blend Rice)
- ¼ tsp. salt
- 2 tbsp. olive oil, divided
- 12 oz. cooked chicken, diced
- · 1 cup corn kernels (thaw if frozen)
- · 1 cup red bell pepper, diced
- 1 cup black beans, canned, drained, rinsed
- ½ cup diced tomatoes
- ¼ cup chopped cilantro or parsley, divided
- 1 tsp ground cumin
- ½ cup chipotle ranch dressing

Directions

- Bring water to a boil in a saucepan. Add blend rice and salt, reduce heat, cover pan and simmer for 45 minutes until rice is tender. Fluff rice, add 2 tbsp. chopped cilantro or parsley. Set aside.
- Heat 1 tablespoons of olive oil in a sauté pan. Sauté corn and black beans together, heating to 165 degrees. Cover to keep warm and set aside.
- Heat 1 tablespoon of olive oil in a sautés pan. Lightly toss diced chicken and ground cumin, heating to 165 degrees. Keep chicken warm and assemble bowls.
- Assemble bowls by dividing rice into 4 bowls. Top each bowl with 3 oz chicken, ½ cup corn-black bean mixture, ¼ cup diced red pepper, and 2 tbsp diced tomato.
 Drizzle with chipotle ranch dressing. Garnish with remaining cilantro or parsley.

This weekend, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

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 m_content=DAEozrtDAQA&utm_campaign=designshare&utm_medium=link&utm_sou
 rce=sharebutton

For More Information:

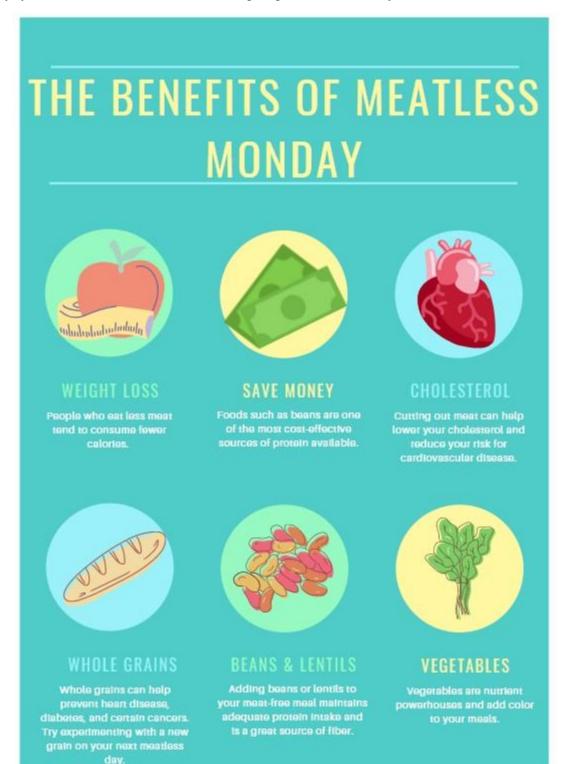
- o https://www.eatright.org/food/planning-and-prep/smart-shopping/shop-healthy-on-a-budget
- o https://fruitsandveggies.org/stories/fruits-and-vegetables-on-a-budget/
- o Recipe: https://fruitsandveggies.org/recipes/very-veggie-chipotle-chicken-bowl/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #3

Hello everyone,

Today, you can learn about the benefits of going meatless one day a week:



RECIPE



Baked Eggplant Parm

INGREDIENTS

Cooking spray
1 1/2 c. panko bread crumbs
1 c. freshly grated Parmesan, divided
2 tsp. Italian seasoning
2 tsp. Kosher salt
2 tsp. Freshly ground black pepper
2 medium eggplants, sliced into 1/2" thick rounds
3 large eggs
4 c. marinara
2 c. shredded mozzarella
1/3 c. thinly sliced basil

DIRECTIONS

- 1. Preheat oven to 425°. Line two large baking sheets with parchment paper and coat with cooking spray. In a shallow bowl, whisk together panko, 1/2 cup Parmesan, and Italian seasoning. Season with salt and pepper. In another shallow bowl, whisk eggs with 2 tablespoons of water and season with salt and pepper.
- Dip an eggplant slice into egg wash, then dredge in panko mixture. Place on baking sheet. Repeat to coat all eggplant slices. Spray tops lightly with cooking spray.
- 3. Bake until soft inside, and golden and crisp on the outside, 30 to 35 minutes.
- 4. In a large baking dish, add a cup of marinara and spread it evenly. Add an even layer of eggplant slices, then pour 1 1/2 cup marinara on top. Sprinkle with 1 cup mozzarella, half of the remaining Parmesan, and fresh basil. Repeat the process once more to use up all ingredients.
- 5. Bake until bubbly and golden, 15 to 17 minutes more.

This week, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

Want more nutrition tips and tricks:

 Contact Megan Lash (<u>Megan.Lash@jeffcohealth.org</u>) to schedule a personalize nutrition consultation!

For More Information:

- o https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/vegetarian-vegan-and-meals-without-meat
- o Recipe: https://www.delish.com/cooking/recipe-ideas/a22698129/baked-eggplant-parm-recipe/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #4

Hello everyone,

Today, you can learn about how to handle a food craving:

FOOD CRAVINGS TIPS & TRICKS

Schedule your snacks: Plan your snacks and keep portable snacks at your desk or in your car

Keep a craving journal: note the time of day your cravings appeared and how you handled the situation



Take a Walk,
work on a
hobby or call
a friend:
take a
moment to
think about
the emotions
behind your
cravings

HEALTHY BANANA MUFFINS



Ingredients

- 4 tablespoons ground flaxseed + 4 tablespoons warm water*
- 1¾ cups whole-wheat pastry flour, (or white/wheat mix)
- 1 teaspoon cinnamon
- ¼ teaspoon nutmeg
- 1 teaspoon baking powder
- ½ teaspoon baking soda
- ½ teaspoon sea salt
- ½ cup almond milk
- 1 tablespoon apple cider vinegar
- ½ cup maple syrup
- ½ cup olive oil or any neutral oil
- 1 teaspoon vanilla
- 1 cup mashed ripe banana, about 2 bananas
- ½ cup chocolate chips, optional

Instructions

- Preheat the oven to 350°F and lightly grease or spray a 12-cup muffin tin.
- In a small bowl, combine the flaxseed and warm water and set aside to thicken for 5 minutes.
- In a large bowl, combine the flour, cinnamon, nutmeg, baking powder, baking soda, and salt.
- In a medium bowl, combine the almond milk, apple cider vinegar, maple syrup, oil, and vanilla and stir to combine. Stir in the flaxseed mixture.
- Add the wet ingredients to the bowl of dry ingredients and stir just until combined. Do not overmix. Fold in the mashed banana and chocolate chips, if using. Use a ½ cup measuring scoop to divide the batter into the muffin tin.
- Bake 18 to 20 minutes or until a toothpick comes out almost clean. Let cool
 15 minutes, then transfer to a wire rack to continue cooling.

This weekend, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

For More Information:

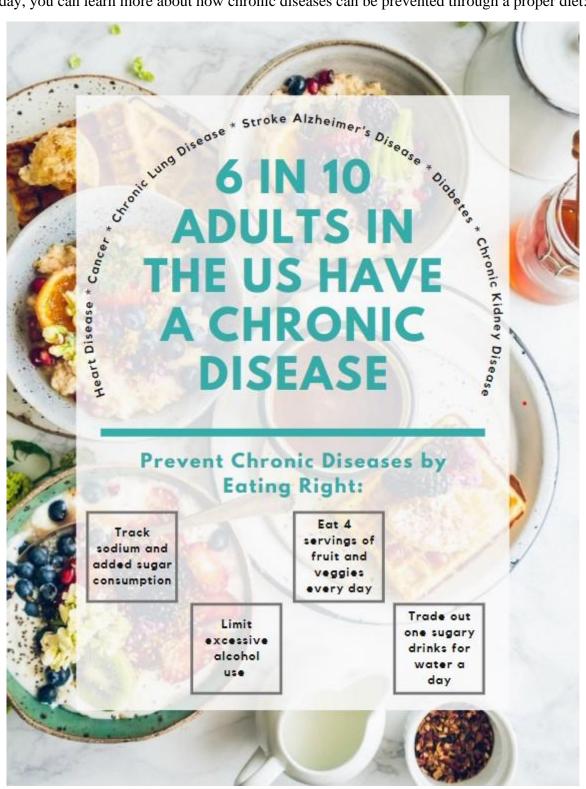
- o https://www.eatright.org/health/wellness/healthy-habits/how-to-handle-food-cravings
- o Recipe: https://www.loveandlemons.com/healthy-banana-muffins/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #5

Hello Everyone,

Today, you can learn more about how chronic diseases can be prevented through a proper diet:



Recipe

quick 20-minute healthy stir-fry with chicken and veggies



Ingredients

- 2 tablespoons olive oil or oil of choice
- 1 pound boneless skinless chicken breasts, cut into ½-inch-thick slices
- 2 cups broccoli florets
- 1 large zucchini cut into slices
- 1 medium bell peppers cut into ½-inch-thick slices
- 1 medium yellow onion halved and cut into ½-inch-thick slices
- 3-4 cloves garlic minced or crushed
- 1 tablespoon Italian seasoning or your favorite seasoning blend!
- 1 teaspoon salt
- ½ teaspoon black pepper

Instructions

- Heat 2 tablespoons oil in a large skillet to medium, high heat.
- Add the chicken, veggies, garlic, and spices.
- Cook for 8-10 minutes, stirring occasionally until the veggies are soft and tender and the chicken is golden and cooked through.
- Serve with rice, pasta, toasted bread, or eat as-is for a low-carb meal!

This week, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

Link to calendar:
 https://www.canva.com/design/DAEozrtDAQA/Qu5yoIuS0o_wdQQHTgYepQ/view?ut
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Want more nutrition tips and tricks:

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For More Information:

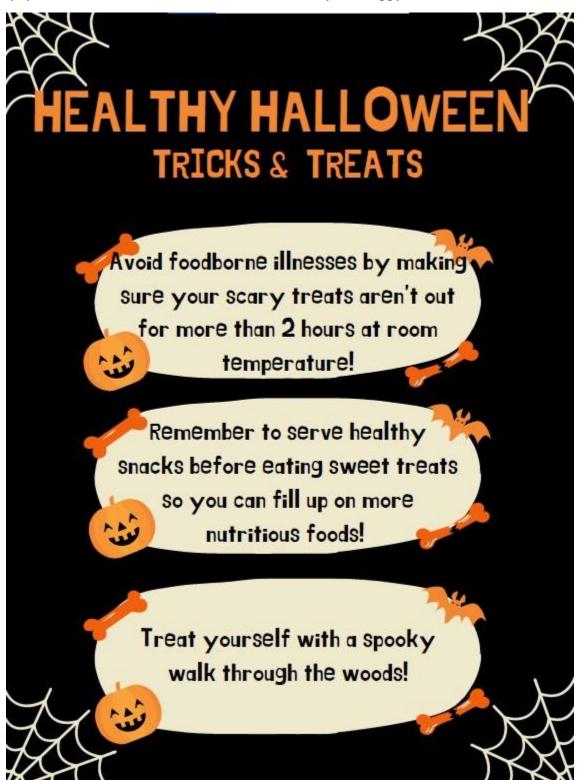
- o https://www.cdc.gov/chronicdisease/resources/publications/factsheets/nutrition.htm
- o https://www.eatright.org/health/diseases-and-conditions/cancer/prevent-cancer-by-eating-right
- o Recipe: https://gimmedelicious.com/quick-healthy-15-minute-stir-fry-chicken-and-veggies/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #6

Hello Everyone,

Today, you can learn more about how to have a healthy and happy Halloween this weekend:





Ingredients

- 8 ounce round of brie cheese
- 1/2 pound black grapes
- 4 ounces sliced salami
- 1/2 cup blueberries
- 1/2 cup blackberries
- 1 navel orange, cut into half-moon slices
- · 3 figs, halved
- 1/4 cup pecans
- 1/4 cup almonds
- 2 tablespoons hazelnuts
- 1 tablespoon pepitas

Instructions

- Place the brie cheese in one of the corners of a large cheese tray or cutting board.
- Break the grapes into smaller clusters and place them in three locations – two on either side of the brie and one in the opposite corner.
- Fold the salami slices in half and then into quarters. Press the salami together to create two "rivers" of salami - one near the brie and the other near the grapes.
- Fill in the rest of the board with the berries, oranges, figs, nuts, and seeds.
- If using Halloween decorations, nestle them alongside the ingredients.

This weekend, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

For More Information:

- o https://www.eatright.org/health/lifestyle/holidays/enjoy-a-healthy-and-happy-halloween
- o https://www.eatright.org/health/lifestyle/holidays/tips-for-a-healthy-halloween-party
- o Recipe: https://thishealthytable.com/blog/spooky-halloween-charcuterie-board/

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

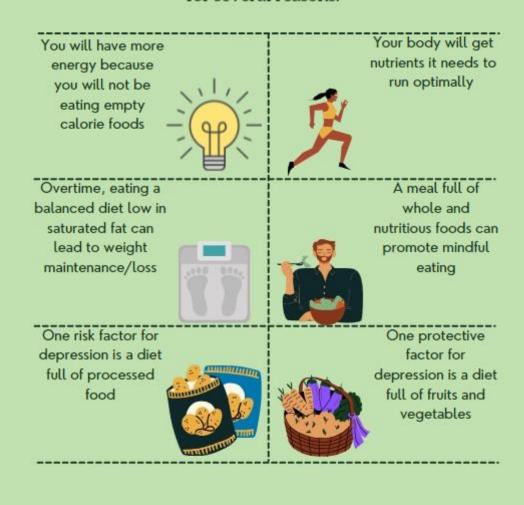
Nutrition Education Email #7

Hello Everyone,

Today, you can learn more about how healthy foods can improve your mental health:

healthy food & happy mood

Eating a balanced diet rich in fruits, vegetables, whole grains, and lean proteins can improve your mental health for several reasons:



recipe easy one-pot red beans & rice

Ingredients

- ½ pound andouille sausage
- · 1 large onion, chopped
- · 3 cloves garlic, chopped
- · 2 ribs celery, chopped
- 114½-ounce can diced tomatoes with liquid
- 115-ounce can kidney beans, drained and rinsed
- ½ teaspoon salt
- ¼ to 1 teaspoon black pepper
- · 2 teaspoons ground thyme
- · 2 teaspoons dried sweet basil
- 1 to 2 teaspoons cayenne
- 1 tablespoon paprika
- · 2 to 5 drops hot pepper sauce
- · 1 bay leaf
- · 1 cup uncooked brown rice
- 1 green bell pepper, chopped



Directions

- Before you begin: Wash your hands.
- Brown the sausage with the onion, garlic, and celery for about 4 to 6 minutes.
- Add the tomatoes, kidney beans, 2 cups water, salt, pepper, thyme, basil, cayenne, paprika, hot sauce, bay leaf, and rice.
- . Bring to a boil.
- · Add the rice, decrease heat, cover, and simmer for 45 minutes.
- Remove from heat. Add the green pepper, stir well, cover and let stand
 minutes. Stir before serving.

This week, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

Link to calendar:
 https://www.canva.com/design/DAEozrtDAQA/Qu5yoIuS0o_wdQQHTgYepQ/view?ut
 m_content=DAEozrtDAQA&utm_campaign=designshare&utm_medium=link&utm_sou
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Want more nutrition tips and tricks:

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For More Information:

- o https://fruitsandveggies.org/stories/atb-for-081810/
- o Recipe: https://www.eatright.org/food/planning-and-prep/recipes/easy-onepot-red-beans-and-rice-recipe

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Nutrition Education Email #8

Hello Everyone,

Today, you can learn more about watching TV impacts your food habits:

netflix & food

HOW WATCHING TV IMPACTS YOUR FOOD HABITS





GREAT SNACK FOR A WEEKEND FOOTBALL GAME

Ingredients

- 2 Hass avocados, cubed
- ½ cup seasonal fruit, diced (strawberry, mango, fig, or grape)
- ¼ cup finely chopped Spanish onion
- 1 plum tomato, seeds removed, finely diced (optional)
- 1 small jalapeño pepper (with seeds), minced
- 3 tablespoons chopped fresh cilantro
- Juice of 1 lime (about 2 tablespoons)
- 1 small clove garlic, minced
- 1/8 teaspoon ground cumin
- ½ teaspoon sea salt, or to taste

Directions

- Before you begin: Wash your hands.
- In a medium bowl, add avocado, seasonal fruit, onion, tomato (if using), jalapeño pepper, cilantro, lime juice, garlic, and cumin. Stir until just combined. Add salt to taste.
- 3. Serve with blue corn tortilla chips.

This weekend, remember to eat at least 4 servings of fruits and vegetables for the JCHD Staff Wellness Challenge and track your progress using the challenge calendar!

For More Information:

- o https://www.health.harvard.edu/blog/distracted-eating-may-add-to-weight-gain-201303296037
- o Research on Distracted Eating: https://doi.org/10.3390/nu11102320
- o Recipe: https://www.eatright.org/food/planning-and-prep/recipes/fruity-guacamole-recipe

If you have any questions regarding the nutrition education emails or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Appendix K: Weekly Progress Report Form Email Scripts

Weekly Report Form #1 Email

Hello JCHD Staff,

Great job completing the first week of the JCHD Staff Wellness Challenge. Please take time to fill out the Qualtrics link for the Weekly Progress Report Form. The form is open from Monday, October 18th to Wednesday, October 20th.

Link to Week #1 Progress Report Form:

https://umkc.co1.qualtrics.com/jfe/form/SV_cZ8T7b9UkNSPNMa

If you have any questions regarding the form or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Weekly Report Form #2

Hello JCHD Staff,

Great job completing the second week of the JCHD Staff Wellness Challenge. Please take time to fill out the Qualtrics link for the Weekly Progress Report Form. The form is open from Monday, October 25th to Wednesday, October 27th.

Link to Week #2 Progress Report Form:

https://umkc.co1.gualtrics.com/jfe/form/SV 3VDV0PwsJvWcmJU

If you have any questions regarding the form or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Weekly Report Form #3

Hello JCHD Staff,

Great job completing the second week of the JCHD Staff Wellness Challenge. Please take time to fill out the Qualtrics link for the Weekly Progress Report Form. The form is open from Monday, November 1st to Wednesday, November 3rd.

Link to Week #3 Progress Report Form:

https://umkc.co1.gualtrics.com/jfe/form/SV 0SBUcZMhx52w3Z4

If you have any questions regarding the form or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Weekly Report Form #4

Hello JCHD Staff,

Great job completing the fourth and final week of the JCHD Staff Wellness Challenge. Please take time to fill out the Qualtrics link for the Weekly Progress Report Form. The form is open from Monday, November 8th to Wednesday, November 10th.

Link to Week #4 Progress Report Form:

https://umkc.co1.qualtrics.com/jfe/form/SV_eLoK9xKIwoi26ge

If you have any questions regarding the form or the JCHD Staff Wellness Challenge, please contact Emily Muensterman (egmf7w@umsystem.edu)!

Appendix L: Conclusion Email Script

Conclusion Email

Hello JCHD Staff,

Congratulations on completing the JCHD Staff Wellness Challenge. The last four weeks have been filled with mindful meditation and healthy eating. We are very proud of all the hard work you have put into yourself!

However, there is one last task to complete before the prizes are announced for the Wellness Challenge:

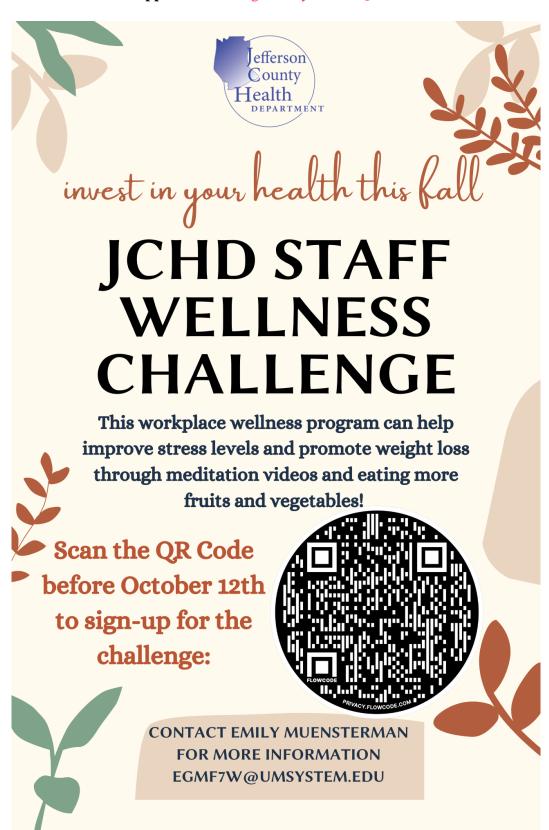
- Please complete the Post-Challenge Survey before Friday: https://umkc.co1.qualtrics.com/jfe/form/SV_bwrKseDagUVjZBQ
- The winners of the prizes will be emailed at the beginning of next week!

Thank you again for participating in the JCHD Wellness Challenge, and we hope you have a great rest of your day!

If you have any questions, please contact:

- Emily Muensterman (UMKC Intern): egmf7w@umsystem.edu
- Adam Peters: Adam.Peters@jeffcohealth.org
- Megan Lash: Megan.Lash@jeffcohealth.org

Appendix M: Program Flyer with QR Code



Appendix N: Thank You for Signing-Up Flyer



SOME REMINDERS

- THE CHALLENGE STARTS 10/12
- PRINT OUT THE CHALLENGE CALENDAR



Appendix O: Program Certificate

