
Evaluation of Employee Behaviors, Perceptions, and Attitudes Regarding Worksite Wellness in an Urban Environment

Kerri Lynn Knippen, Amy Thompson, and Andrea Masters

Abstract

Worksite wellness programs continue to demonstrate a high return on investment by controlling and reducing employer shares of health care expenditures. Health risk assessments (HRA) are commonly used to establish priorities. This cross-sectional study utilized an online HRA grounded by constructs from the Health Belief Model and the Theory of Planned Behavior. An online anonymous survey was disseminated to employees at an urban academic-medical institution, $n=816$ responses were obtained for a 12% response rate. The majority of respondents were female. Seventy-one percent (71%) of employees believed they were at-risk for pre-diabetes/diabetes, 49% perceived they were at risk for high blood pressure, and 43% indicated they were at risk for depression. Less than 10% reported their health status as being excellent. One in five respondents were unable to see a primary care provider (PCP) due to challenges in their life and 14% did not have a PCP. The average employee exercises 3-4 times per week and consumes on average 12.41 servings of fruits and vegetables per week. Self-efficacy was associated with intention ($r(702) = 0.45, p = <0.001$). The results indicate insufficient achievement of health behaviors and the need for evidence based programs that encourage self-efficacy, accountability, and positive perceived norms.

Keywords: Worksite wellness, health risk appraisal, employee wellness

Introduction

Worksite wellness programs have been offered by employers for over 30 years and these programs are essential to retain employees. According to the Centers for Disease Control and Prevention (CDC, 2016-a) the United States (US) chronic disease is threatening American businesses

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due to lost productivity and unsustainable health care costs. Worksites can no longer take a back seat to helping their most valuable resource, their employees, live a healthy lifestyle. A comprehensive wellness program is a coordinated long-term strategy to minimize disease, injury, and provide resources for behavior change and prevention. Given the resources available in research focused, academic-medical institutions, these settings are ideal to study and evaluate the efficacy of worksite wellness within a diverse workforce.

Background

A plethora of studies have suggested that the most effective types of worksite health programs are evidence-based approaches which span the spectrum of health. An academic worksite wellness program demonstrated that the mean monthly healthcare costs of participants was \$35 lower and the return on investment (ROI) was estimated to be \$2.53 for every dollar invested in the program (Dement, Epling, Joyner, & Cavanaugh, 2015). While ROI will vary based on the program and setting, this evidence reinforces the value of worksite wellness in an academic setting.

Considering the leading indicators of mortality in the US, chronic disease should be a central focus within worksite wellness. The average cost of an individual with type 2 diabetes (T2DM) is 2.3 times higher per year, creating an excess of \$7,888 per year (American Diabetes Association, 2013). Cardiovascular disease (CVD), the leading cause of death in US, also increases costs. A study of patients in the Kaiser Permanente Northwest CVD Registry found that the direct medical care costs (outpatient care, pharmaceutical costs, and hospitalizations) for individuals with established CVD were nearly \$19,000 per year and higher costs were observed for those with diabetes or a secondary CVD hospitalization. (Nichols, Bell, Pedula, & O’Keeffe-Rosetti, 2010.)

Hypertension, a risk factor for CVD, is another driver of healthcare costs. A recent study found that over a 13-year period, the national spending related to hypertension increased from \$58.7 billion to more than \$109 billion dollars per year (Zhang, Wang, Zhang, Fang, & Ayala, 2017). Therefore, as recommended by the American Heart Association and Healthy People 2020, worksite wellness programs should address CVD health by means of CVD indicators, including blood pressure.

Another factor related to chronic disease in the US is tobacco use. Tobacco use, primarily smoking, escalates health expenditures. For each pack of cigarettes smoked, it costs the healthcare plan about \$35 (American Cancer Society, 2016) or \$8,200 each year (Xu, Bishop, Kennedy, Simpson, & Pechacek, 2014).

While the research is limited, academic-medical institutions have had success implementing employee wellness programs. For example, Vanderbilt University, a research university-medical center, demonstrated that over a 7-year period of implementing worksite wellness, smoking decreased, physical activity increased, obesity increased at a slower rate,

and incentives improved engagement (Byrne, et al., 2011). The first step to developing wellness and creating a culture of work-life balance is to understand the target population through a needs assessment or health risk appraisal (HRA).

A comprehensive HRA is a common tool used in program planning to determine needs and identify gaps in resources. Having a diverse workforce requires a unique approach to wellness programs. Although generalizations can be made from public data, it is pertinent to understand the target population. The HRA can streamline costs by addressing the needs which have ROI and are feasible.

The purpose of this HRA was to provide an aggregate evaluation of needs, but also an understanding of health beliefs, attitudes, and norms regarding employee health. Individual results from this assessment were not available to participants. Employees do have access to a wellness program and an individualized HRA report, however two thirds (67%) of employees at this institution do not participate. Thus, this HRA intended to engage a diverse pool of employees, including those who may not participate in current initiatives, in order to have a broader understanding of needs.

Methods

A cross-sectional method was employed to evaluate employee health beliefs, behaviors, and attitudes towards worksite wellness. An anonymous online survey link was emailed to 7,000 employees who work for an urban academic institution in the Midwest. The research university includes multiple campus locations; the academic and medical campus are located approximately 5 miles apart. Responses were collected for a week after the initial email was sent. The instrument included a maximum of 45 questions and was constructed using *Qualtrics*. The study was granted exemption by the institution's Institutional Review Board (IRB). Efforts were taken to avoid loss of privacy, thus no identifiable information including data related to ethnicity, race, and body weight were collected.

The survey was grounded by constructs from the Theory of Planned Behavior (Ajzen, 1991) and the Health Belief Model (Rosenstock, 1974). Constructs from the Theory of Planned Behavior included **beliefs and attitude** (1) *Participating in university sponsored health and wellness programs would be helpful for myself...*(2) *Having increased opportunities for wellness programs at the University would enable me to improve my physical or mental health...*(3) *If I participate in wellness programs I will have improved health...*[Likert scale: 1 = Strongly agree, 5 = Strongly]; **intention** (1) *I intend to use wellness programs that are offered by the institution in the next year...*[Likert scale: 1 = Extremely likely, 7 Extremely unlikely]; **self-efficacy** (1) *My ability to improve my health is up to me...*(2) *I am confident that I can improve my health within the next 12 months...*[Likert scale: 1 = Strongly agree, 5 = Strongly disagree]; and **perceived norms** (1) *Most of my co-workers regularly participate in health and wellness programs offered by the University...*(2) *Most of my co-workers who have participated in employer sponsored wellness programs have improved their health...* (3) *When it comes to matters of my own health, I want to be like my co-workers...* (4) *When it comes to matters of my own health, I want to do what my health providers recommend that I should do...*[Likert scale: 1 = Strongly agree, 5 = Strongly disagree].

The survey included constructs from the Health Belief Model to assess **perceived susceptibility** (1) *How likely or unlikely do you think it is for you to develop the following conditions or health concerns...* [Likert scale: 1 = Extremely likely, 5 = Extremely unlikely] for chronic disease or health concerns (i.e. diabetes, obesity, cancer, heart disease) and **perceived benefits** of employee health and wellness (1) *How beneficial do you think employee wellness programs are for ...* (2) *Onsite wellness programs are for employees at...*(3) *How beneficial do you think...*(4) *Online wellness programs are for employees at...*(5) *How beneficial do you think employee wellness programs are for the following health concerns...* [Likert scale: 1 = Very beneficial, 5 = Not beneficial at all].

The survey included questions from the Behavioral Risk Factor Surveillance System (2016) survey related to overall health status and volitional health behaviors (diet, exercise, healthcare access & utilization, sleep, physical and mental health, alcohol and tobacco/e-cigarette use). No questions regarding illegal activity were incorporated into the survey.

The survey incorporated 18 items specific to programming concerns to gauge the preferred interests, mode, site of delivery, and the time(s) and day(s) for programs. Open-ended response options were available for programming items so not to limit response options.

A mean score was calculated for the three self-efficacy items. Aggregate data was used to obtain descriptive statistics, including frequency, mean, standard deviation (SD), and standard error (SE). Pearson (*r*) or Chi Square (χ^2) were used to evaluate bivariate relationships. An alpha of 0.05 was selected for statistical significance.

Results

At the conclusion of the data collection window $n = 816$ responses were obtained. Using a sample size calculator with a confidence interval of .05 with a 95% confidence level, 364 responses was sufficient to meet power for statistical testing. Despite having a response rate of 12% the number of responses obtained clearly met the measure for statistical power.

Relative to institution demographics, 61% of employees are female and 39% of employees are male. Among those who responded to the survey, the majority identified as female (76%), staff member (69%), and had been employed for 6 years or more (58%) (Table 1). The mean age for respondents was 44.88 years (SD = 12.57).

When participants were asked if they felt they spent enough time on their health, less than one third (31%) agreed and 47% disagreed. The majority (49%) felt that they would spend more time focusing on their personal health through onsite programs. Approximately 92% of respondents felt that onsite wellness programs would be beneficial, while 83% felt that online programs would be beneficial.

Perceived Susceptibility

Participants were asked to evaluate their perceived susceptibility for a variety of common chronic health concerns (Table 2). More than a third of respondents believed that they were susceptible for diabetes or pre-diabetes (34% and 37% respectively). In terms of weight status, more than half (56%) of respondents perceived themselves to be susceptible to becoming overweight or obese.

Table 1. *Respondent Characteristics*

	n (%)
Gender	
Female	605 (75.8)
Male	179 (22.4)
Did not wish to disclose	14 (1.8)
Classification of Position	
Staff	556 (68.9)
Faculty	148 (18.3)
Administrative	80 (9.9)
Other	23 (2.9)
Length of Employment	
Less than 1 year	103 (12.7)
1 to 2 years	122 (15.0)
3 to 5 years	119 (14.7)
6 to 10 years	125 (15.4)
11 to 19 years	179 (22.1)
20 or more years	163 (20.1)

Percentages based on the number of valid responses

Similar trends were observed for perceived susceptibility and heart health. More than 43% perceived themselves to be susceptible for heart disease, 38% for high cholesterol, and 49% for high blood pressure. More than half (55%) of respondents identified susceptibility for sleep problems and 37% reported susceptibility for cancer development. Specific to mental health, 43% of respondents believed they were at risk for depression and 74% reported risk for stress or anxiety.

Perceived Benefits

Respondents identified the perceived benefits of employee wellness programs for health concerns (Table 3). Encouragingly, the majority identified that programs would be beneficial for diabetes (82%), pre-diabetes (82%), addressing overweight/obesity (85%), and heart health (84%). While the proportion who believed programs focused on sleep disorders and cancer were lower, most believed these would be beneficial (75% and 74% respectively). The majority (83%) also indicated that programs focused on mental health, including stress and anxiety, would be beneficial.

Health Beliefs and Attitudes

Nearly all of the respondents reported that good health was important to them (80% very important and 19% somewhat important). More than 75% of participants agreed that participating in employee wellness programs would improve their personal health within 6 months. Similarly, 84% of participants agreed that opportunities for health at work would improve their health. Moreover, 83% believed that efforts to improve their personal health would improve their productivity at work.

Barriers

When respondents were asked to identify barriers, 70% reported time, 6% cited lack of knowledge or confusion about information, and 7% identified a lack of resources. Specific to healthcare access, 21% reported that in the last year they were unable to see a doctor due to challenges in their life. Surprisingly, 14% respondents indicated that they did not have a routine primary care health provider.

Table 2.
Perceived Susceptibility for Health Concern

Health concern	EL n(%)	SL n(%)	NL/U n(%)	SU n(%)	EU n(%)
Diabetes	50(6.8)	200(27.2)	162(22.0)	140(19.0)	183(24.9)
Pre-diabetes	64(8.9)	202(28.1)	134(18.7)	142(19.8)	176(24.5)
Heart disease	53(7.2)	263(35.9)	192(69.4)	125(17.1)	99(13.5)
High cholesterol	91(12.3)	262(35.5)	164(22.3)	119(16.1)	101(13.7)
High blood pressure	119(16.1)	240(32.4)	156(21.1)	123(16.6)	102(13.8)
Depression	109(14.9)	205(27.9)	161(21.9)	118(16.1)	141(19.2)
Overweight/Obesity	180(24.1)	240(32.2)	109(14.6)	100(13.4)	117(15.7)
Sleep problems	141(19.2)	265(36.0)	164(22.3)	101(13.7)	65(8.8)
Stress or anxiety	239(31.9)	315(42.0)	94(12.5)	62(8.3)	40(5.3)
Cancer	43(5.9)	225(30.7)	309(42.2)	96(13.1)	59(8.1)

EL: Extremely likely; SL: Somewhat likely; NL/U: Neither likely or unlikely; SU: Somewhat unlikely; EU: Extremely unlikely
Percentages based on the number of valid responses

Table 3.
Perceived Benefits of Worksite Wellness by Health Concern

Health concern	VB n(%)	MB n(%)	SB n(%)	LB n(%)	NB n(%)	NS n(%)
Diabetes	273(37.6)	168(23.1)	121(16.7)	37(5.1)	22(3.0)	105(14.5)
Pre-diabetes	277(38.5)	161(22.4)	113(15.7)	41(5.7)	22(3.1)	106(14.7)
Heart disease	278(35.5)	185(25.4)	111(15.2)	38(5.2)	17(2.3)	99(13.6)
High cholesterol	256(35.5)	181(25.1)	129(17.9)	39(5.4)	21(2.9)	96(13.3)
High blood pressure	280(38.3)	185(25.3)	116(15.9)	38(5.2)	19(2.6)	93(12.7)
Depression	249(34.5)	163(22.6)	123(17.1)	49(6.8)	32(4.4)	105(14.6)
Overweight/Obesity	314(43.1)	182(25.0)	90(12.3)	37(5.1)	21 (2.9)	85(11.7)
Sleep problems	210(29.0)	166(22.9)	135(18.6)	51(7.0)	45(6.2)	118(16.3)
Stress or anxiety	276(38.0)	179(24.7)	108(14.9)	36(5.0)	29(4.0)	98(13.5)
Cancer	188(26.2)	136(18.9)	145(20.2)	63(8.8)	52(7.2)	134(18.7)

VB: Very beneficial; MB: Moderately beneficial; SB: Somewhat beneficial; LB: A little beneficial; NB: Not beneficial at all; NS: Not sure

Percentages based on the number of valid responses

Self-Efficacy

The overwhelming majority of participants (96%) felt that their ability to improve their personal health was volitional. Encouragingly, 86% were confident they could improve their health within the year. The majority (79%) of responders reported that it was somewhat easy/extremely easy to obtain medical or health information and 83% of participants agreed that access to worksite wellness programs would enable them to improve their health. A moderate positive association was observed for self-efficacy and intention to engage in worksite wellness ($r(702) = 0.45, p = <0.001$).

Perceived Norms

Less than 15% of participants believed that their co-workers participated in university sponsored wellness programs within the last year. Only 21% of participants believed that co-workers who had participated actually improved their health and 42% were not sure. In addition, only 18% of respondents agreed that they wanted to be like their co-workers in relation to personal health. In contrast, 93% wanted to comply with their personal healthcare provider's recommendations.

Intention

Intention, a key construct of the Theory of Planned Behavior, has been identified as an important determinant of actual health behavior. A single item related to intention identified that 72% of participants reported were likely to participate in wellness programs offered in the next 12 months, while less than 15% were unlikely to participate.

Perceived and Actual Health Status

Concerning perceived health status (physical, spiritual, and mental/emotional well-being), 10% of respondents reported excellent health, 44% reported good health, 38% reported average health, and 8% perceived their health as poor. In terms of actual health status, 9% reported having diabetes, 14% with pre-diabetes, 49% were overweight or obese, and 42% identified having at least one indicator of CVD. Less than 5% reported a history of a heart attack, stroke, coronary heart disease or angina.

More than 20% reported a history of arthritis, rheumatoid arthritis, or osteoarthritis. Less than 10% reported a history of cancer and 11% reported a history of pulmonary disease.

Regarding mental health, 23% reported personal history of a depressive disorder. More than 22% of respondents indicated having difficulty with concentrating, remembering, or making decisions due to physical, mental, or emotional problems. When prompted to identify the number of days during the past 30 days in which their physical health and mental was **not** good, the mean was 4.98 days (SE = 0.34) and 7.36 days (SE = 0.46) respectively.

Utilization of Health and Wellness

When asked what services were currently used for health and wellness needs, 39% reported use of fitness or recreational facilities for employees, 19% participated in the institution's worksite wellness program, and 11% had participated in employer health screenings. Walking and bike paths were used by 32% and 15% of respondents respectively, and 14% used the worksite wellness website.

Diet

Respondents were prompted to provide their usual intake of fruits, vegetables, dining on campus, and sugary sweetened beverages. The mean intake for frequency of regular soda, energy drinks, and other sugary sweetened beverages was 1.44 (SE = 0.25) per day, 2.44 (SE = 0.25) per week, or 3.54 (SE = 0.52) per month. For fruit intake (not including fruit juices), the mean intake was 5.69 servings (SE = 0.51) per week and 20.70 servings (SE = 1.18) per month. Specific to vegetable intake (not including vegetable juices), the mean intake was 6.72 servings (SE = 0.34) per week, and 31.23 servings (SE = 1.89) per month. Collectively, employees are not meeting the goals for daily or weekly consumption of fruits and vegetables.

The mean intake for eating food prepared by the institution's facilities was 0.75 times (SE = 0.16) per day, 1.84 (SE = 0.22) times per week, and 2.20 (SE = 0.22) times per month. Respondents were also asked to identify their use of calorie/nutrition information at the institution's dining facilities, 13% reported that this was always helpful to decide what to

order, 20% reported it being helpful most of the time, while just roughly 20% reported that this was never helpful, and less than 5% reported that they could not locate this information.

Physical Activity

Specific to physical activity (exercise, walking, recreational activities) over the last 30 days, not including work activity, the mean was 3.69 (SE = 0.17) times per week and 11.87 (SE = 0.68) times per month. These findings, while not inclusive of intensity or duration, do indicate that employees by and large are not meeting daily activity recommendations.

Sleep

Respondents had on average 6.77 (SE = 0.04) hours of sleep within a typical 24-hour period. As noted earlier, the majority of respondents believed themselves to be at risk for sleep problems and believed that worksite wellness programs focused on sleep would have benefit.

Alcohol

The mean alcohol equivalent intake for the past 30 days was 2.58 (SE = 0.09) with a range from 0 to 15 drinks on any one occasion. Regarding binge drinking, 14% of females indicated that they had engaged in binge drinking (> 4 alcoholic drinks in one sitting) in the past 30 days, while 4% of males engaged in binge drinking (> 5 drinks in one sitting) within the past 30 days. While females had a higher prevalence, it was not statistically significant ($\chi^2(2, 798) = 3.32, p = 0.19$).

Tobacco and E-Cigarette

Approximately 5% of participants reported presently smoking cigarettes, 18.6% reported a history but no longer using, and 75% reported no history. Less than 1% currently used chewing tobacco, snuf, or snus, 5% reported past use, and more than 94% reported no prior use. Approximately 1% of respondents reported current use of e-cigarettes or electronic vaping products, while 5% reported past use. Of those who indicated current use of any of the described products, 37% reported an interest and readiness to quit at this time and 33% reported an interest but lacked readiness to quit.

Influenza Vaccination

More than half of respondents (51%) reported having influenza vaccination within the last 12 months. When the respondents were stratified by classification of position, there was no statistical difference ($\chi^2(6, 676) = 3.93, p = 0.69$) in vaccination. However, when the responses were stratified by primary employment location, employees who worked on the medical campus were more likely to receive the vaccination ($\chi^2(2, 674) = 26.84, p < 0.001$).

Programming Preferences

Most respondents indicated preference for in person educational presentations or workshops (31% and 31% respectively). Less than 10% reported interest in videos and approximately 15% reported either an interest in online programs or reading materials. Two thirds (67%) of respondents reported an interest in physical activity, 61% reported an interest in nutrition or weight management, 42% cited an interest in mental health or emotional well-being, and

29% were interested risk reduction programs.

Respondents were given an open-ended response option to describe services that would be beneficial for their health and well-being. Respondents identified programs to improve relationships with co-workers and dealing with stress at work. There was interest in having access to programs and fitness facilities for 24 hours a day to accommodate all work schedules. Respondents indicated a need for improved walkways, standing desk options, and ergonomic work environments.

Respondents described an interest in improving the culture for health, through the creation of walking or cycling groups for support and accountability. Specific to accountability, respondents described an interest in fitness challenges health or fitness apps. Incentive based programs were highlighted as a strategy to improve health.

Respondents indicated that email (83%) was the best form of communication, followed by text message (13%) and social media (3%). Facebook was the preferred method of social media (83%). Approximately 20% of respondents were interested in a pilot program to receive text or social media push notifications.

Discussion

Worksite wellness programs have shown to be effective in improving employee morale, retention, productivity, and many of the physical and mental dimensions of health. These programs continue to demonstrate a high ROI and have been shown to control and reduce employer shares of health care expenditures. HRA's have long been used to establish institutional baselines, identify priorities, and assist with the establishment of programs.

The rapid and large volume of responses to this HRA were positive and indicate employee interest in wellness. It is interesting that the majority of responders to this HRA were female; while this may be due to demographics of the institution (61% of employees are female), there may be value to further investigate differences in beliefs and attitudes based on gender.

Regarding actual health status, several leading health indicators were assessed. Nearly half of employees self-reported that had been told they were overweight or obese. Weight status has been correlated with risk of cancer, diabetes, CVD, respiratory disease, sleep disorders, depression, among others. Modest weight loss has been shown to reduce the risk of many chronic diseases. In addition, 42% of respondents reported being told they had high blood pressure, abnormal cholesterol, high triglycerides, or metabolic syndrome. This metabolic profile is often associated with development of diabetes and cardiovascular disease.

Diabetes has quickly become a leading chronic disease in the US, as approximately 1 in 11 adults in the US are estimated to have diabetes (CDC, 2014). While only 9% of respondents reported having diabetes, the majority of employees perceived themselves to be susceptible for diabetes or pre-diabetes. Approximately 15-30% of those with pre-diabetes will develop T2DM within 5 years (CDC, 2014). Considering the mean age (44.88 years) within the representative sample, it is important to note that middle aged adults are at increased risk for T2DM (CDC, 2014). Unfortunately, many adults in the US with prediabetes do not meet the recommended lifestyle goals to reduce their risk for diabetes (Zhou, Remsburg, Caufield, & Itote, 2012). Results from this study reinforce that many

employees do not achieve lifestyle recommendations which could reduce their risk for diabetes.

For numerous reasons, mental health has significant impact on the overall dimensions of health. Mental health was a common concern identified by respondents. Many employees perceived themselves to be susceptible to depression, stress, and anxiety. A study by Clark and colleagues (2011) found that employees with high stress levels were more likely to be less active, have poorer dietary habits, lower self-efficacy, high blood pressure, and excess weight. Employees at this institution do have access to mental health services through the employee assistance program (EAP), however services are offsite. Onsite employee mental health services may be constructive, given that many employees cited concern for depression, stress, and anxiety.

In terms of actual health behaviors, the mean daily intake of fruit and vegetables was 5.69 servings per day and 6.72 servings per day respectively, for a combined intake of 12.41 servings per week, which is below the recommended guidelines. The *2015-2020 Dietary Guidelines for Americans* recommends that adults requiring 2,000 calories per day consume at least 2 cups of fruit and 2.5 cups of vegetables daily. Despite the significant effort at this institution to increase healthier food options and access to nutritional information, intake continues to be a challenge. There are continued opportunities to improve both access and awareness through health communication and marketing.

Lack of physical activity by employees is a significant challenge on campus. There was a significant interest by employees to improve activity in the work space. While this HRA did not assess the number of minutes of activity per week or the intensity level of activity, respondents indicated that they were active outside of work 3 to 4 times per week. This suggests that respondents are not achieving the recommended goals of being physically active most days of the week. Despite onsite access to fitness programs and biking/walking paths, few employees take advantage of these benefits. Further, the urban environment does create additional challenges for improving physical activity, especially between campus locations.

The prevalence of binge drinking was nearly 3 times higher in females than males, while the difference was not statistically significant, it is concerning, given that SAMHSA's National Survey on Drug Use and Health, 2012-2013, found that men are more likely to engage in binge drinking. Future evaluation of binge drinking behavior is warranted to better understand binge drinking behavior in female employees within academic-medical institutions.

Approximately 5% of participants reported currently using cigarettes, 1 % reported using e-cigarettes, and 1% indicated that they use smokeless tobacco. This was very encouraging given national data. It is possible, that within the sample, education may have confounded the results, given the negative correlation between tobacco use and education level.

In terms of primary care, one in five employees indicated they were unable to see their primary care due to challenges in their life. Employees have access to primary care at both campus locations, yet, 14% of respondents reported not having a primary care provider. Similarly, free influenza vaccinations are offered to employees each year during flu season, yet only about half of respondents received the influenza vaccine. Given that many employees in this study are employed in

direct healthcare, where vaccination is required, it would be expected that this rate would be higher. Still, rates were better than the national average for adults (50-64 years), which was approximately 42% at the end of 2015-2016 flu season (CDC, 2016-c).

One of the most encouraging finds of this HRA is regarding self-efficacy; the overwhelming majority of participants felt that their ability to improve their personal health was within their locus of control. The vast majority of participants were confident they could improve their health within 12 months. Having accessible and targeted worksite wellness programming can certainly assist with meeting their personal goals.

When respondents were given the opportunity to provide qualitative information, themes that emerged were options to improve accountability. Additional themes focused on access to ergonomic workspaces and incentives to encourage participation. Such resources may improve morale, retention, safety, and satisfaction of employees. While, many worksite wellness programs focus on ROI, these findings emphasize the benefit of using value on investment (VOI) measures in addition to ROI alone.

When planning wellness programs, it is important to address programming preferences. Respondents reported a preference for onsite programs, followed by online options. A recent systematic review on internet based wellness programs found that while there were some differences in outcomes with the internet intervention, the difference was stronger if the program included physical contact or environmental interaction (Aneni, et al., 2014). Respondents from our study indicated an interest in apps and social media for worksite wellness. The use of technology, including social media or push notifications in conjunction with onsite programs, is an area that needs further investigation.

This study reinforced the need for worksite wellness programs to be cognizant of the work schedules of all employees. Programs should be accessible and equitably offered for all employees, regardless of the hours they work. Online programs may be feasible options to consider, however, there should be continued effort to make personal contact.

Limitations

Given that this was a voluntary survey within a convenience sample, it is possible that respondents were biased as those who have better health or interest in wellness responded. For some respondents, even though this survey is anonymous, there could be a perception that this information could be linked to them personally and that there could be retribution for their responses on sensitive issues, which could impact the internal validity of this study. Finally, although the sample was sufficient for meeting statistical power, the total response was somewhat low, which could limit the generalizability of findings.

Conclusions

The HRA data confirms that while there are a number of wellness initiatives already in place at the current institution, many are underutilized and gaps in access exist. Employees demonstrated a significant interest in onsite wellness programs; however, these programs may be strengthened by

online options, the use technology, and apps to encourage accountability.

Findings from this study reinforced the need to focus on mental health within worksite wellness programs. The majority of employees had experienced mental health problems or believed themselves to be susceptible for mental health concerns. Programs that foster self-efficacy, positive normative beliefs, peer support, and improved morale should be considered as a medium to improve mental and physical health indicators. This study reinforced employee interest in programs offering accountability, support, and incentives. These factors should be explored for their potential influence on engagement and VOI.

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**This article may provide one
Continuing Education Contact Hour Opportunity for CHES (Approval Pending)
Instructions and self-study questions may be found on page 39**
