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PARTICIPATION IN ORGANIZATIONAL HEALTH AND WELLNESS PROGRAMS

A Thesis
Presented to
The Faculty of the Department of Psychological Sciences
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science

By
Sarah Christine Adams

May 2016

PARTICIPATION IN ORGANIZATIONAL HEALTH AND WELLNESS PROGRAMS

Date Recommended 4-21-2016

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Department of Psychological Sciences Western Kentucky University

Health and wellness programs are being utilized by organizations at growing rates. Research on health and wellness programs is typically confined to the program of a single organization and the employees participating in that specific program. Typically, this research examines the outcomes of health and wellness programs in organizations, such as return on investment in terms of medical costs, as well as improvements in the health of the employees. However, little information is known about those who choose to participate in health and wellness programs and the characteristics that may influence their participation.

This study examined the relationship between demographic characteristics and likelihood of participation in health and wellness programs, as well as the relationship between program characteristics and likelihood of participation. Differences in likelihood of participation were found between different program types. Women were found to be more likely to participate than men, in most cases. Likelihood of participation increased as the incentive amount increased and decreased if the program incentive had a loss frame. Likelihood of participation was also higher for participation-based incentives compared to outcome-based incentives.

Introduction

The utilization of health and wellness programs in organizations is a growing area of interest for research. Providing health and wellness programs for employees is becoming more popular, as shown by Collins (2004), who found that more than 81% of businesses in the United States with 50 or more employees have implemented some type of program designed to promote health and wellness. However, research is mixed about whether health and wellness programs are beneficial (Lesser & Puhl, 2014). It is still unknown whether health and wellness programs have an impact on the health and wellness of the employees or on organizational outcomes. Although it is unknown if health and wellness programs are beneficial to employees and organizations, it is important to uncover the commonalities of those who choose to participate as compared to those who do not participate. As such, the goal of this study is to examine differences in demographics between participants and nonparticipants, as well as to examine participation and non-participation between different programs and different incentives.

In 2010, the Patient Protection and Affordable Care Act was passed. This legislation encourages organizations to implement wellness programs for their employees, as this act has built-in support of health and wellness programs. The Patient Protection and Affordable Care Act states that smaller companies can receive tax benefits for implementing wellness programs (Carlson, 2014). Previously, the government restricted the amount that could be offered as a reduction in employees' health insurance premiums to encourage them to participate in health and wellness programs. Companies could offer no more than a 20 percent reduction in the health insurance premium as an incentive for health and wellness program participation (Lesser & Puhl, 2014). With the passage of this act, employers can now offer incentives of up to 30 percent of healthcare

premiums (Carlson, 2014). This act also impacted health insurance carriers, as they are now restricted from focusing their administrative fees on wellness services (Carlson, 2014). Goldman (2011) also noted that the act requires health insurance companies to implement activities that promote health and wellness. These mandates on health carriers could make health and wellness services more accessible and easier for people to utilize.

Whereas the reasons for health and wellness program implementation vary, one major reason for organizational interest in employee health and wellness stems from potential negative organizational outcomes of poor employee health. Proper, Staal, Hildebrandt, van der Beek, and van Mechelen (2002) found that healthcare costs, such as insurance premiums, can increase if employees are in poor health, which can affect the organization's financial performance. Shapiro and Moseley (2013) found that health and wellness programs can have an effect on medical costs incurred. Medical costs can decrease if employees become healthier, as they may use their health insurance less. This can impact organizational costs, as health insurance premium costs for organizations may rise if employees are utilizing their health insurance at higher rates. If employees need to go to the hospital and need expensive health services less often, it can have an impact on the health insurance premiums offered to employers.

Shapiro and Moseley (2013) found that healthcare costs incurred were greater for those who were at high risk for tobacco use, obesity, and physical inactivity. Those whose lifestyles reflect higher risk behaviors may impact health insurance premium costs, as they are more likely to incur higher healthcare costs. These lifestyle factors do not only affect health care costs; they can go as far as affecting mortality. Shapiro and Moseley (2013) found that those with low-risk lifestyles (e.g., never smoked, had a healthy diet

and adequate physical activity) were less likely to experience mortality from cardiovascular disease and other such causes, showing that lifestyle can be quite impactful on health and mortality. This is an important factor, as health and wellness programs can be designed to target specific lifestyle behaviors, such as smoking cessation. Therefore, programs that target unhealthy lifestyle factors may have an impact on costs, as well as employee health.

Types of Health and Wellness Programs

Whereas many organizations have discovered a need for employee health and wellness programs, the types of programs offered by the organization can vary drastically in scope, intensity, and in what is required of the employee. In regard to scope, it is difficult to characterize all health and wellness programs into a specific category. Many health and wellness programs offer a variety of services that are geared toward different health goals. Collins (2004) described three main types of health and wellness programs: fitness-focused programs, health-focused programs, and wellness programs. Each type of program takes a different perspective regarding health and wellness, and the goals of each are typically different. Employers can choose to offer a combination of these programs, emphasizing more than one aspect, or they can use a comprehensive approach that focuses on all three aspects of health and wellness. Each of these program types is described in more detail below.

Fitness-focused programs. Fitness-focused programs offer employees different means of improving physical fitness as their primary focus. Although there may be other, broader areas of concern, such as employee weight loss, a fitness-focused program may be a means to address those concerns. Collins (2004) noted a few options organizations

have provided to their employees, including onsite fitness facilities, free or reduced-price fitness classes, and fitness challenges. Carlson (2014) also mentioned that companies can offer gym passes or promote stairwell-climbing campaigns to encourage activity. Walking programs are an option to encourage physical activity, as well (Lesser & Puhl, 2014).

Health-focused programs. Health-focused programs are utilized more often when employees' physical health is the concern or target issue. These programs focus on improving employee health through providing services or implementing programs to try and change behavior in a more healthful manner. Services that may be provided as part of a health-focused program are preventative health services (Collins, 2004). Carlson (2014) also noted that companies can offer flu shot services, personalized health risk assessments, smoking cessation programs, and nutrition programs in programs of this type.

Wellness programs. Wellness programs focus on the entire individual in a more holistic approach to health and wellness. Whereas fitness- and health-focused programs are more concerned with employees' physical health, wellness programs also consider psychological health. Wellness programs focus more on aligning and balancing a person's mind, body, and spirit. Services that an organization may offer if they implement a wellness program could include yoga classes or meditation periods (Collins, 2004). Because wellness programs focus on the person holistically, they may incorporate other services intended to help each specific area of the person. They may also incorporate services geared toward balancing the entire person.

Research has not examined differences in preference or participation in the three different types of health and wellness programs. Therefore, potential differences in participation in the three distinct types of programs will be examined.

Research Question 1: Are there significant differences in likelihood of participation between fitness-focused, health-focused, and wellness-focused programs?

Effect of organizational factors on program choice. Organizational factors can have an impact on the type of health and wellness program chosen. For example, the industry that an organization is in may have an effect on the type of program in which employees would prefer to participate (Churchill, Gillespie, & Herbold, 2014). If a certain type of program is regularly used in a specific industry, employees may be more receptive to that type of program, especially if positive results have been found in similar organizations. Carlson (2014) recommended examining the workforce of the company to determine certain factors, such as age and physical location, and then making a decision that takes those factors into consideration. The program should make sense for the employees; if it is difficult for them to participate or if there are barriers, they may be less likely to participate.

As Carlson (2014) also discussed, the organizational culture and the organization's attitude regarding the health and wellness program should influence the decision as to the type of program implemented. Organizations can consider implementing changes at work to encourage participation in the program, such as through "walking meetings," wherein meeting attendees walk together while conducting the meeting instead of holding the meeting in a more traditional sense, such as sitting at a conference table. Organizations can offer onsite screening opportunities, also.

Organizational support for the program can help to get employees on board with the program, encouraging participation and letting employees know that the organization is serious about improving the health and wellness of employees.

Health and Wellness Program Participant Characteristics

Trends in the demographic characteristics of those who participate in health and wellness programs are unclear. One potential reason for this is that research on health and wellness programs tends to be based on single cases rather than looking across multiple programs. Also, the demographic make-up of an organization's employees can vary based on the industry and region, and these characteristics are likely to be reflected in the participation rates for the program.

Gender. Trends in the gender of participants in wellness programs are difficult to determine. Wellness programs tend to be studied within single organizations, which makes it difficult to draw conclusions about the demographics of those who tend to participate. This is particularly because employee populations vary between organizations; the demographics of the employees of one organization are not the same as those of another. However, in one study of a wellness program for staff and faculty members on a university campus, the vast majority (i.e., 92.5%) of participants were female (Haines et al., 2007). In another study, the percentage of women who participated in the health and wellness program was slightly higher than the percentage of men (Naydeck, Pearson, Ozminkowski, Day, & Goetzel, 2008). This trend is seen in much of the research that reports gender statistics for participants. Due to this apparent trend, it is likely that females will have a higher likelihood of participation in the program than males.

Hypothesis 1: Females will be more likely to participate in wellness programs than will males.

Age. General trends in age for participants of health and wellness programs are also unclear. Wellness programs are only open to employees; therefore, the demographics of those participating in the wellness program are likely to match those of the overall employee population. Byrne and colleagues (2011) found that the average age of participants in a workplace wellness program was very similar to the average age of the employee population, which was 41 to 42 years. Some research shows that younger workers are more likely to participate in wellness programs. In a study of a wellness program offered to employees of a county school district, Aldana, Merrill, Price, Hardy, and Hager (2004) found that the majority of participants in the wellness program were under 40 years of age. Based on current research, it appears that younger people are more likely to participate in wellness programs than older people.

Hypothesis 2: Those who are younger in age will be more likely to participate in wellness programs than will older people.

Education level. Most research examining health and wellness programs has not gathered information on participants' education level. Although data may be available on the distribution of participants across various positions or classifications within the organization, it is unknown if the education level of employees is related to their likelihood of participating in a health and wellness program offered by their organization. However, research has examined links between socioeconomic status and associated factors, including education level, health risks, and health status. According to a study by Williams, Yu, and Jackson (1997) that examined racial differences in physical and mental

health, education and income both significantly predicted poor health. A lower education level was associated with more bed-days, which were days in which the participant was unable to work or perform regular activities because of emotional distress or physical health issues (Williams, Yu, & Jackson, 1997). Similarly, Winkleby, Jatulis, Frank, and Fortmann (1992) examined the impact of socioeconomic status on the risk factors for cardiovascular disease, such as smoking cigarettes, blood pressure, total cholesterol, and HDL cholesterol. They found that lower educational levels were associated with the highest prevalence for risk factors of cardiovascular disease (Winkleby et al. 1992).

Although there is no specific research examining education level and health and wellness program participation, research examining the relationship between education level and both health risks and health status indicates that education level is positively associated with health status and negatively associated with health risks. Essentially, those who have completed higher levels of education are also generally healthier. Thus, extending this line of thinking, this could potentially indicate a positive relationship between education level and participation in health and wellness programs.

Hypothesis 3: Education level will be positively associated with likelihood of participation.

Even though participants' education level is likely to be associated with likelihood of participation, because health status is related to education level, it is important to determine if education level adds any predictive value over that of health status in examining program participation.

Research Question 2: After controlling for health status, are there significant differences in likelihood of participation between those with different education levels?

Geographic area. A gap exists in current research that examines participation in health and wellness programs across different geographic areas. Most studies examine the health and wellness program at a single company and, therefore, are limited in the geographic area examined. In a study of a wellness program for Johnson & Johnson, Ozminkowski and colleagues (2002) examined the demographics of the employees participating in the organization's health and wellness program. Their sample consisted of employees from the northeastern, north central, western, and southern United States, and their results indicated that the majority of employees were from the northeastern United States (Ozminkowski et al., 2002). The ability to gather participants from multiple geographic areas is limited due to the nature of most organizations. Therefore, it is unclear if people in any particular geographic area are more likely to participate in wellness programs.

Research Question 3: Are there differences in likelihood of participation in health and wellness programs by geographic area?

Industry. There is a lack of research comparing health and wellness program participation across industries. Due to the nature of much research on health and wellness programs, a single program at one organization is typically examined. This does not allow any sort of comparison across industries to determine if there are differences in participation across different organizations in different industries. Therefore, it is important to determine if there are specific industries that show differences in participation so that those industries are aware and can address those issues.

Research Question 4: Are there differences in likelihood of participation in health and wellness programs between industries?

Importance of Health and Wellness Programs to Organizations

As more and more organizations are choosing to implement health and wellness programs, it is clear that these types of programs are, to some extent, important to organizations. The importance of such programs can vary depending on the perspective an organization or employee has regarding the program. For example, the benefits reaped by organizations can be quite different than the benefits reaped by employees, although they may work together toward the same overall goals and outcomes. The way the program benefits the individual employees and the organization is affected by the perspective they have on the program, as well as the purpose they feel the program serves. Therefore, the program may be important to both the organization and individual employees for different reasons, but this overlap in importance can help to achieve the goals and outcomes desired by both parties.

Organizational outcomes. Organizations can choose to implement health and wellness programs for a variety of reasons. They may want to lower their healthcare costs by improving employees' physical health. They may be concerned about employees' physical fitness and stamina. They may want to improve employees' commitment to the company by offering benefits that other companies may not, such as a well-designed health and wellness program. Carlson (2014) noted that health and wellness programs can have a positive impact on physical injuries, productivity, and absenteeism, all of which can cause financial loss for organizations. If employees are injured less, are more productive, and are attending work regularly, organizations will be more likely to be profitable or at least will not be hindered by these issues stemming from the health and wellness of employees. In a review of worksite wellness programs, Osilla and colleagues

(2011) found that there was a decrease in healthcare costs for participants in all but one of the eight studies that evaluated the impact on healthcare costs, and there was a significant decrease in absenteeism in the four studies that examined the costs of absenteeism. The return on investment in terms of dollars varied, but there was a return on the investment the company made in all of these studies. Baicker, Cutler, and Song (2010) found similar results in their meta-analysis of wellness programs and disease prevention programs in the workplace. They found that absenteeism costs and medical costs both fell by about $2.73 and about $3.27, respectively, for each dollar spent on these workplace programs (Baicker et al., 2010). In addition to decreased absenteeism, a meta-analysis indicated that participants in health and wellness programs tend to have higher job satisfaction (Parks & Steelman, 2008). Based on the results of these studies, it is apparent that health and wellness programs can produce outcomes that are beneficial to organizations.

Individual employee outcomes. Health and wellness programs also have implications and outcomes for individual employees. Employees may actually utilize the program to become healthier in general or in one specific area of their lives. Osilla and colleagues (2011) found a variety of positive employee outcomes in their analysis of wellness programs in the workplace. Of the 13 studies that examined exercise habits, eight indicated positive changes in exercise habits. Of the studies that examined changes in diet and physiological markers (e.g., BMI, weight), half of each set indicated significant changes in participants. Of the programs that examined smoking cessation and alcohol use, the majority of programs resulted in a reduction or cessation in smoking and a decrease in alcohol consumption (Osilla et al., 2011). Goetzel and colleagues (2002) also found decreases in participants' health risk in a number of categories. Compared to

nonparticipants, participants exhibited decreased risk for high blood pressure, smoking cigarettes, and use of chewing tobacco or snuff. Participants also had a decreased risk of low fiber intake, high cholesterol, and poor exercise habits (Goetzel et al., 2002). Some programs allow employees to indicate their own personal goals and follow a program that helps them meet those goals. This allows them to personalize the health and wellness program to their own specific needs, which can increase the benefit of the health and wellness program to the employee. Employees may want to decrease their own healthcare costs. For example, they may try to become healthier so that they do not need to go to the doctor as often, thereby receiving a financial benefit, especially if they have a high deductible through their insurance plan.

Overlap in organizational and individual employee outcomes. If organizations choose to implement health and wellness programs in order to make their employees healthier overall, the organizational outcomes and individual employee outcomes may overlap. Employees may become healthier as a result, which supports both the organizational goal, as well as the individual employee. Cawley and Price (2013) described a situation in which employers offer health programs to help employees lose weight, which they view as beneficial for both parties. In regard to the organizational benefits, health insurance costs may decrease, as would the costs associated with absenteeism. In regard to employees, the program can help them obtain personal goals for weight loss, as well as become healthier overall. In order to achieve the desired outcomes, however, employees must participate in the program.

Health and Wellness Program Rewards and Incentives

Organizations can choose to incentivize health and wellness programs, just as is done with other types of programming, in order to encourage participation. The recent legislation of the Patient Protection and Affordable Care Act has encouraged employers to provide health and wellness programs for their employees, as it states that employees can receive up to 30% off of their health coverage costs if they meet health benchmarks and participate in health and wellness programs (Goldman, 2011).

Shapiro and Moseley (2013) noted that positive effects are likely to result from incentive programs; however, results from evaluations of incentive programs show that this effect may vary. Specifically, the authors described how extrinsic motivators, such as incentives, must be balanced with intrinsic motivators, as the intrinsic motivators are needed to change long-term behavior (Shapiro & Moseley, 2013). According to Ryan and Deci (2000), extrinsic motivators are outcomes separate from yourself, such as a salary or benefits, and intrinsic motivators are internal, such as an interest or enjoyment in the activity. Osilla and colleagues (2012) also found support for the use of incentives, as it was shown that participants in programs offering incentives showed improvements in health outcomes compared to non-incentivized participants. This shows the impact that incentives can have on participation in health and wellness programs, as well as the potential impact on health outcomes.

Organizations can choose to use a variety of incentives or stick with just one. Shapiro and Moseley (2013) noted that the most popular type of incentive is cash. They also described other incentives that can be offered, such as lower premium costs to employees and employer contributions to either flexible spending accounts or health

savings accounts for employees who participate. Cawley and Price (2013) discussed the benefits of offering financial incentives for employee participation in health and wellness programs. First, financial incentives are salient. The employees know the amount and understand what is necessary to obtain the reward. Second, financial incentives can be paid immediately. Employees can get the immediate gratification of seeing the money in their paycheck or deposited into a health savings account. Finally, financial incentives can be flexible in structure. Therefore, they can be more advantageous and enticing for those who prefer to do things in their own time and dislike sticking to a strict schedule.

Organizations can choose to provide incentives to employees who simply enroll in health and wellness programs. Shapiro and Moseley (2013) found that offering a participation incentive was the most significant predictor of increased enrollment. Therefore, it seems that offering incentives impacts participation regardless of incentive type. Simply offering an incentive at all can encourage employees to at least enroll in the program. Incentives offered based on participation are also more easily achievable, and participants may be more confident that they are able to obtain the incentive based on participation, as opposed to an incentive based on outcomes, as employees may see it as very difficult or even impossible for them to reach certain health outcomes.

Regardless of the type of incentive offered, organizations need to ensure that employees will find the incentive valuable and worth achieving. As Carlson (2014) found, it is important to examine the characteristics of the employees when choosing a program, and it is useful in determining the incentive, as the incentive should be something that employees will find valuable and worth achieving. Person, Colby, Bulova, and Eubanks (2010) found that one common barrier to employees participating in health

and wellness programs was insufficient incentives. Therefore, employees may be less likely to participate in and complete a health and wellness program if they are not rewarded for doing so, or if they perceive the reward to be insufficient.

Hypothesis 4: The likelihood of participation in health and wellness programs will be positively associated with the incentive amount.

Impact of incentive framing. Whereas organizations must choose the incentives that work best for their situation and their employees, the framing of the incentive system must be considered. How an organization relays information about the incentive system, as well as the incentive system that is chosen, can convey information to employees regarding what the organization thinks is important and the goals trying to be achieved by the health and wellness program. The communication of the program information can impact participation in the program, as participants may be more or less likely to complete the program based on the way the information is portrayed. Friedman (2009) examined the impact of gain and non-gain frames on creativity. He found that participants were significantly more creative when non-gain framing (i.e., loss framing) was used (Friedman, 2009). In this study, non-gain framing referred to participants being told that if they fail to meet a specific performance standard, they will not receive a specific reward. Namely, a non-gain frame was more useful in motivating creativity, as participants were told they would not receive an additional reward if they did not perform well. Latimer and colleagues (2008) examined motivation and framing in terms of motivating physical activity. In contrast to Friedman (2009), Latimer and colleagues (2008) found that gain framed messages were associated with higher levels of physical activity than mixed framed or loss framed messages. The authors examined the impact of

message framing on participation in physical activity and found that providing messages about what is to be gained from physical activity was associated with higher levels of physical activity than if the provided messages emphasized the costs of physical activity.

In examining likelihood of participation in a health and wellness program, a loss frame could be used to motivate participants to complete the program, in that participants would be required to return the incentive if they did not complete the program. This should motivate participants to complete the program, as they will lose their incentive if they do not complete the program. However, if participants are aware of this potential loss prior to choosing to participate, they may doubt their ability to complete the program, and, therefore, the fear of having to return the incentive may cause them to be more hesitant to participate.

Hypothesis 5: The likelihood of participation will be lower for loss frame incentives as opposed to gain frame incentives.

Outcome-based incentives. Incentives can be offered based on the outcomes achieved by participants. Carlson (2014) described this type of incentive as a very popular reward structure at the moment. The author noted that this type of incentive is designed to reward participants for actual changes in their health. For example, rewards may be given based on weight loss goals achieved or meeting health goals, such as meeting health benchmarks on biometric screenings. In order to do this, it is important for employees to continue participating in the health and wellness program. Therefore, outcome-based incentives may be more attractive, as they can be seen as encouraging employees to continue participation in the program.

If incentives are outcome-based, a time delay will be required in order to allow for goals or benchmarks to be met. Volpp, Asch, Galvin, and Loewenstein (2011) stated that people are less attracted by delayed incentives, which could cause an issue with outcome-based incentives, as they require a time delay in order for changes to be made and data to be gathered. Carlson (2014) noted that the focus of wellness programs has moved from just getting employees to do different things to trying to change things about employees' health, which can impact the types of incentives offered and the requirements for obtaining the incentive. Goldman (2011) also noted that health and wellness programs have changed to encourage lasting changes to behavior that are healthier.

Cawley and Price (2013) studied differences between groups offering differing financial incentives for a workplace weight loss program. Their results showed that the control group, which was offered a participation incentive instead of an outcome-based incentive, had less attrition throughout the program than the other two groups, which were offered incentives based on outcomes. However, they noted that this may have been due to the confusing nature of the incentive schedule for the outcome-based programs (Cawley & Price, 2013). This implies that regardless of the type of incentive used, the incentive schedule and requirements for obtaining the incentive need to be clear and easily understood by employees. If the incentive system is too difficult to understand, employees may give up and drop out of the program.

Although it is becoming more popular for organizations to reward health changes, Lesser and Puhl (2014) noted that there may be pitfalls to doing so, specifically in rewarding weight loss. The authors examine how societal aspects influence obesity and weight gain, such as through inexpensive but unhealthy food options and environments

that support less physically active lifestyles. In turn, Lesser and Puhl (2014) recommend rewarding employees for behavior change, some of which can be outcome-based. An example of this would be rewarding a reduction in smoking rates. Volpp and colleagues (2011) found that it is still uncertain whether outcomes-based incentives are more effective, and they also discussed issues of equity in distribution. Employees who have already achieved a certain outcome, such as smoking cessation, on their own and without any incentives may feel that other employees should not be rewarded for doing something that they did on their own.

Participation-based incentives. Incentives can be offered based on participation in the program. Employees may be offered an incentive for simply signing up and participating in the program in order to encourage employee participation. Incentives may be offered based on participation instead of outcomes because there may not be any measurable outcomes to be seen. Losing weight or decreasing cholesterol may not be feasible to measure based on the length of the program or feasible to measure for the organization itself. Losing weight and lowering cholesterol may not be feasible goals for the individual employee, as his or her weight and cholesterol may already be in a healthy range. Another factor is the benefit of immediate distribution of incentives. Volpp and colleagues (2011) stated that people are more receptive to immediate benefits rather than benefits they may receive after a delay; in general, people are more concerned with the present than the future. This can be a benefit of participation-based incentives, as they can be provided immediately to those who choose to enroll or immediately after certain outcomes are completed, such as partaking in a biometric screening.

Goldman (2011) noted that participation in one program increased when the program utilized a more intricate participation-based incentive rather than just rewarding participants for enrolling in the program. Once a points system was implemented to track points and encourage employees to participate in different activities, participation increased. However, these incentives were still participation-based, as they were not tied back to measurable health outcomes, such as weight loss or decreased blood pressure.

Lesser and Puhl (2014) noted that basing incentives on behavior rather than outcomes can be more beneficial, especially because of the lack of research on how incentives impact outcomes. The authors suggested offering incentives for participating in physical activity, as well as utilizing modern technology to track employees' participation in programs (Lesser & Puhl, 2014). Mello and Rosenthal (2008) examined how it may be difficult or unrealistic for some participants to achieve specific outcomes, such as those with disabilities or preexisting conditions. Therefore, incentives based on participation may be more inclusive and allow different types of people to feel that they are able to participate and receive an incentive.

Hypothesis 6: The likelihood of participation will be lower for health and wellness programs with outcome-based incentives than for those with participation-based incentives.

Method

Participants

Participants were recruited using Amazon Mechanical Turk. All participants were signed up as workers through the site, through which they opted into participating in the study. Eighty-three participants were not included, as they either failed a quality

control or failed to complete the survey in full. The final sample included 554 adults (51.4% female, M_{age} = 34.59 years, age range: 18-68 years). The majority of participants (77.6%) had an associate's degree or higher. There was participant representation for each of the nine geographic areas, with the largest representations being the Pacific region (17.9%), the South Atlantic region (17.0%), the Middle Atlantic region (15.9%), and the East North Central region (15.5%). All industries were represented, with the highest representation in the health care and social assistance industry (15%), followed by the educational services industry with 12.6%, and the finance and insurance industry with 10.3%. All participants were required to be at least 18 years of age, live and work in the United States, work at least 40 hours per week, and be fluent in the English language.

Materials

All study measures were entered into an online survey. The survey was designed to take approximately 30 minutes to complete. The survey contained qualifying questions to ensure the participant met the requirements for participating in the study (see Appendix A), as well as demographic questions and items asking about likelihood of health and wellness program participation under various conditions. Each of these measures is described in more detail below.

Demographic information. Demographic items included gender, age, education level, health status, geographic area, and industry (see Appendix B). Geographic area answer choices reflect the nine divisions used by the U.S. Census Bureau (2015). Industry options were based on the North American Industry Classification System (NAICS) used by the U.S. Census Bureau (2015).

Health status was measured using the 20-item Short-form Health Survey developed by Stewart, Hays, and Ware (1988), which examines physical functioning, pain, mental health, role functioning, health perceptions, and role functioning. Each answer choice was assigned a number, and the numbers of a participant's answer choices were summed to provide scores for each section. Physical functioning was measured by six items, role functioning with two items, social functioning with one item, and mental health with five items. For each of these four scales, the numbers associated with each answer were summed; higher scores indicated better health in that category. Health perceptions were measured with five items. Three items were reverse-coded. The answer choices for each of the five items were summed, with higher scores indicating better perceptions of health. The scores for the first health perception question, regarding overall health, were converted to a scale that better reflected the unequal intervals of the answer choices, as was done by the creators of the scale (Stewart et al., 1988). Responses were re-coded in the following manner: 1 = 5, 2 = 4.36, 3 = 3.43, 4 = 1.99, 5 = 1. Pain was measured with one item. The item was reverse-coded in order to match the other scales, wherein higher scores indicate less pain. In order to score the measure, a total score for each of the six sections was calculated. Once a total score was calculated for each section, each participant's section scores were combined to produce a composite score for the participant's health, of which the highest possible health score was 90. Higher scores indicated better health. The composite scores ranged from 21 to 90.

Health and wellness program participation. This measure described each of the three different types of health and wellness programs. Descriptions of each type of program were compiled using multiple sources. The fitness-focused program featured

reduced-price fitness facility memberships (Mattke et al., 2013), walking programs (Naydeck et al., 2008), and fitness classes (Thornton & Johnson, 2010). The health-focused program featured nutrition counseling with a registered dietitian (Naydeck et al., 2008), smoking cessation programs, and onsite health clinics (Mattke et al., 2013). The overall wellness-focused program featured reduced-price fitness facility memberships (Mattke et al., 2013), nutrition counseling with a registered dietitian, and stress management programs (Naydeck et al., 2008). Using a seven-point Likert scale ranging from very unlikely to very likely, participants indicated how likely they would be to participate in each program (see Appendix C).

Participation incentives. This measure assessed the likelihood of participation under various incentive conditions (see Appendix D). Three different financial incentives were offered for each of the three program types (i.e., nine different scenarios), and participants were asked about their likelihood of participation in each circumstance using a seven-point Likert scale ranging from very unlikely to very likely.

Incentive requirements. This measure asked participants how likely they would be to participate if they were required to pay the incentive back for non-completion of the requirements during the first six months of participation (see Appendix D). To indicate their likelihood of participation, they used a seven-point Likert scale with responses ranging from very unlikely to very likely. In addition, using seven-point Likert scales ranging from very unlikely to very likely, two questions assessed how likely participants would be to participate in the program if the incentive requirements were participation-based (i.e., participants are required to complete a pre-specified number of activities) or

outcome-based (i.e., participants must meet certain program goals, such as weight loss or decrease in cholesterol or blood glucose levels; see Appendix D).

Quality control items. Two quality control items were present within the surveys to filter out low quality responses (see Appendix E). The quality control items were embedded within the survey in order for them to remain as inconspicuous as possible. Participants were asked to select a specific response from the available response options. If the quality control items were marked incorrectly, participants were unable to continue with the survey.

Procedure

Amazon Mechanical Turk was utilized to recruit participants and collect data. As noted by Mason and Suri (2011) and Crump, McDonnell, and Gureckis (2013), Amazon Mechanical Turk offers advantages over more traditional methods of data collection. Amazon Mechanical Turk gives researchers access to a very large subject pool (Mason & Suri, 2011; Crump et al., 2013). This can be especially useful for organizational research, as the college student population to which researchers typically have access may not allow results to generalize to the working population of interest. Amazon Mechanical Turk also allows access to a very diverse subject pool (Mason & Suri, 2011; Crump et al., 2013). Participants were paid a small amount for completing the surveys, and the low cost and ease of payment can make Amazon Mechanical Turk a good option for researchers with limited funds (Mason & Suri, 2011). Finally, Amazon Mechanical Turk allows researchers to gather data very rapidly, as the tasks and experiments can be put online very quickly and completed by participants on their own time. Notably, Sprouse (2011) examined the validity of data collected through Amazon Mechanical Turk for

survey-based experiments with a focus on an acceptability judgment task. Sprouse (2011) found that data gathered using Amazon Mechanical Turk were not different from data gathered in the laboratory.

Participants first entered their Worker ID and answered qualifying questions to ensure they met the requirements to participate in the study. Eligible participants read an informed consent form. If they agreed to participate, participants continued and completed the survey. They began with a demographic survey. Participants then answered questions about the likelihood of their participation in three different types of health and wellness programs. Participants were asked how likely they would be to participate in each type of health and wellness program for three different monetary incentives. They were then asked about their likelihood of participation if the incentive was based on participation and if it was based on outcomes. In the final portion of the survey, participants asked about their likelihood of participation if they would have to pay back the incentive if they did not complete the requirements. Once the survey was completed, participants were paid $1.50 for their participation and time. This reward amount equates to $3.00 per hour, which, though below the federal minimum wage, is higher than most of the tasks and projects currently available for workers on Amazon Mechanical Turk.

Results

To assess Research Question 1, a repeated measures ANOVA was conducted to determine if there were differences in likelihood of participation between the three different program types: fitness-focused, health-focused, and wellness-focused. The analysis showed a significant difference ($p < .001$ in both cases) in likelihood of

participation between fitness-focused (M = 4.84, SD = 1.86) and health-focused programs (M = 4.12, SD = 2.03), as well as between wellness-focused (M = 4.85, SD = 1.84) and health-focused programs, $F(1.77, 984.11) = 51.46$, $p < .001$, $\eta_p^2 = .09$. The analysis did not show a significant difference in likelihood of participation between fitness-focused and wellness-focused programs. Thus, both fitness-focused and wellness-focused programs had a significantly higher likelihood of participation than did health-focused programs (see Figure 1).

An independent samples t-test showed a significant difference in likelihood of participation between men and women. Hypothesis 1 was partially supported, as women had a higher likelihood of participation in fitness-focused programs (M = 5.17, SD =1.71) than did men (M = 4.49, SD = 1.96), $t(552) = -4.38$, $p < .001$, $d = 0.370$, and women had a higher likelihood of participation in wellness-focused programs (M = 5.08, SD = 1.72) than did men (M = 4.60, SD = 1.93), $t(551) = -3.07$, $p = .002$, $d = 0.263$. There was no difference in likelihood of participation between men and women for health-focused programs, $t(551) = -1.71$, $p = .089$.

Pearson correlations were run to determine the relationship between age and likelihood of participation in health and wellness programs in order to examine Hypothesis 2. Hypothesis 2 was not supported, as there was not a negative correlation between age and likelihood of participation. However, a significant positive correlation was found between age and likelihood of participation in a health-focused program, r = .10, p = .015. Thus, Hypothesis 2 was not supported; in fact, marginal evidence was found in the opposite direction.

A one-way ANOVA was conducted to determine differences in likelihood of participation for those across different educational backgrounds. No significant differences in likelihood of participation were found for fitness-focused programs, $F(4, 549) = 1.212$, $p = .305$, for health-focused programs, $F(4, 548) = 2.321$, $p = .056$, or for wellness-focused programs, $F(4, 548) = .235$, $p = .918$. Thus, Hypothesis 3 was not supported. Because Hypothesis 3 was not supported, Research Question 2, which asked whether controlling for health status would eliminate any relationship between education level and likelihood of participation, was not examined.

Assessing Research Question 3, a one-way ANOVA showed no significant differences in likelihood of participation in any program for different geographic areas for fitness-focused programs, $F(8, 545) = .713$, $p = .680$, for health-focused programs, $F(8, 544) = .872$, $p = .540$, or for wellness-focused programs $F(8, 544) = .714$, $p = .679$. In examining differences between industries in likelihood of participation, only subgroups of 10 or more people were included in the analysis. A one-way ANOVA indicated no differences in likelihood of participation between industries for fitness-focused programs, $F(18, 535) = 1.214$, $p = 1.214$, for health-focused programs, $F(18, 534) = 1.355$, $p = .149$, or for wellness-focused programs, $F(18, 534) = 1.176$, $p = .276$.

A repeated-measures ANOVA was conducted to determine differences in likelihood of participation as the incentive amount increased for each program type. Likelihood of participation increased for each program as the incentive amount increased (see Figure 2). For fitness-focused programs, significant differences were found for likelihood of participation between each of the incentive amounts, $F(1.44, 796.18) = 346.83$, $p < .001$, $\eta_p^2 = .39$. In all comparisons, $p < .001$. The likelihood of participation

in a fitness-focused program with a $100 incentive ($M$ = 5.39, SD = 1.67) was lower than for a $500 incentive, ($M$ = 6.19, SD = 1.27), and the likelihood of participation for a $500 incentive was lower than for a $1,000 incentive ($M$ = 6.62, SD = .99). For health-focused programs, significant differences were found between each incentive amount, $F(1.42, 785.26) = 449.39$, $p < .001$, $\eta_p^2 = .45$. In all comparisons, $p < .001$. The likelihood of participation in a health-focused program with a $100 incentive ($M$ = 4.73, SD = 1.88) was lower than for a $500 incentive ($M$ = 5.65, SD = 1.63), and the likelihood of participation for a $500 incentive was lower than for a $1,000 incentive ($M$ = 6.21, SD = 1.42). For wellness-focused programs, significant differences were found between each incentive amount, $F(1.54, 852.00) = 371.68$, $p < .001$, $\eta_p^2 = .40$. In all comparisons, $p < .001$. The likelihood of participation in a wellness-focused program with a $100 incentive ($M$ = 5.17, SD = 1.68) was lower than for a $500 incentive ($M$ = 5.96, SD = 1.35), and the likelihood of participation for a $500 incentive was lower than for a $1,000 incentive ($M$ = 6.45, SD = 1.10). Thus, Hypothesis 4 was supported.

A repeated measures ANOVA was conducted to determine differences in likelihood of participation between simply receiving an incentive (i.e., a gain frame) and having to pay the incentive back if certain requirements were not met (i.e., a loss frame). For fitness-focused programs, there was a difference in likelihood of participation between using a loss frame for the incentive and simply receiving any of the three incentive amounts, $F(1.80, 996.96) = 656.64$, $p < .001$, $\eta_p^2 = .54$. Likelihood of participation was lower for programs with a loss frame incentive (M = 3.71, SD = 2.01) than for all three of the incentive amounts: $100 ($M$ = 5.39, SD = 1.67), $500 ($M$ = 6.19, SD = 1.27), and $1,000 ($M$ = 6.62, SD = .99), with $p < .001$ in all cases. For health-

focused programs, $F(1.91, 1057.98) = 568.87$, $p < .001$, $\eta_p^2 = .51$, likelihood of participation was lower for the loss frame incentive ($M = 3.49$, $SD = 2.04$) than for all three of the incentive amounts: \$100 ($M = 4.73$, $SD = 1.88$), \$500 ($M = 5.65$, $SD = 1.63$), and \$1,000 ($M = 6.21$, $SD = 1.42$). In all cases, $p < .001$. Likewise, for wellness-focused programs, $F(1.88, 1297.07) = 619.44$, $p < .001$, $\eta_p^2 = .53$, likelihood of participation was significantly lower ($p < .001$ in all cases) for a loss frame ($M = 3.68$, $SD = 1.99$) than for all three of the incentive amounts: \$100 ($M = 5.17$, $SD = 1.68$), \$500 ($M = 5.96$, $SD = 1.35$), and \$1,000 ($M = 6.45$, $SD = 1.10$). Therefore, Hypothesis 5 was supported, as likelihood of participation was lower for programs with a loss frame than gain frame incentives (see Figure 3).

To assess Hypothesis 6, paired samples *t*-tests were conducted to look for differences in likelihood of participation between programs with participation-based requirements for receiving the incentive, such as completing a certain number of activities, and programs with outcome-based requirements for receiving the incentive, such as weight loss. For fitness-focused programs, likelihood of participation was higher for participation-based incentives ($M = 5.62$, $SD = 1.50$) than for outcomes-based incentives ($M = 5.03$, $SD = 1.69$), $t(553) = 10.23$, $p < .001$, $d = 0.369$. For health-focused programs, likelihood of participation was higher for participation-based incentives ($M = 5.01$, $SD = 1.77$) than for outcomes based incentives ($M = 4.61$, $SD = 1.84$), $t(553) = 8.37$, $p < .001$, $d = 0.222$. For wellness-focused programs, the *t*-test indicated higher likelihood of participation for participation-based incentives ($M = 5.14$, $SD = 1.56$) than for outcomes-based incentives ($M = 4.79$, $SD = 1.70$), $t(553) = 6.69$, $p < .001$, $d = 0.215$. Thus, in for all three program types, likelihood of participation was higher for programs

with participation-based incentives than for programs with outcomes-based incentives, supporting Hypothesis 6.

Discussion

The results supported many of the hypotheses and provided answers to the research questions. A difference in likelihood of participation between the three types of health and wellness programs was detected, indicating a potential preference for fitness-focused and wellness-focused programs over health-focused programs. In general, ratings for likelihood of participation in a health-focused program were lower, regardless of incentive amount or type.

Hypothesis 1 was partially supported, as females had a significantly higher likelihood of participation for fitness-focused programs and wellness-focused programs. Significant differences in likelihood of participation were not found for health-focused programs. Likelihood of participation was lower for health-focused in general, which may be why significant differences were not found for health-focused programs. Health-focused programs may not be as attractive to people in general. These findings indicate that, at least under some circumstances, women may be more likely to participate in a health and wellness program than men.

Support was not found for Hypothesis 2, as there was a very weak positive correlation between age and likelihood of participation in one type of program, which was contrary to Hypothesis 2. A weak association was found between age and likelihood of participation in health-focused programs. This positive association may be due to older workers' being more concerned with their health than younger workers; therefore, older workers may be more likely to participate in health-focused programs than younger

workers. This indicates that, instead of age, the differing health concerns of older workers may be associated with likelihood of participation.

Hypothesis 3 examined the relationship between education level and likelihood of participation in health and wellness programs. The analyses did not indicate a relationship between likelihood of participation and education level. Consequently, Research Question 2 was not examined, as there was no relationship found between education level and likelihood of participation. Therefore, there was no need to examine health status as a factor in this relationship.

There were no significant differences in likelihood of participation between geographic areas or between industries, offering insight for Research Questions 3 and 4. Whereas some significant differences were found between industries, the small sample sizes for the industries may have reduced the power to detect effects.

As expected, participants indicated a higher likelihood of participation as incentive amount increased. This outcome supports Hypothesis 4 and previous research that indicates that people will be more likely to try to obtain incentives which they value and find meaningful. This increase in likelihood of participation occurred across all three types of programs, indicating that, though the likelihood of participation in a specific type of program may be lower than for other types of programs, it can be impacted if the incentive amount increases. In terms of individual responses, the percentage of participants who indicated they would be "somewhat likely" or greater to participate in a program with each incentive amount increased significantly as the incentive amount increased. For a $100 incentive for a fitness-focused program, health-focused program, and wellness-focused program, 77.8%, 65%, and 73.9% would be likely to participate,

respectively. For a $500 incentive for each program, the percent of those who would be "somewhat likely" or greater increased to 90.6%, 82.7%, and 88.6%, respectively. Finally, for a $1000 incentive, the percent of those who would be "somewhat likely" or greater to participate increased to 94.9%, 88.9%, and 94.2%, respectively. These jumps indicate that, even if the likelihood of participation in a particular program, such as a health-focused program, is low, adding an incentive for participating greatly impacts the likelihood of participation in the program.

In examining the differences in participation between programs with a gain frame, in which participants simply receive the incentive without any requirements, and a loss frame, in which participants must pay the incentive back if certain requirements are not met, a significant difference in likelihood of participation was detected. Participants were much less likely to participate in a program with a loss frame, regardless of the incentive amount or program type. As referenced above, the percentage of participants who would be "somewhat likely" or greater to participate in each program type increased dramatically as the incentive amount increased. However, if participants were required to pay the incentive back if certain requirements were not met, the percentage of those who were "somewhat likely" or greater to participate dropped to 38.3% for fitness-focused programs, 35.1% for health-focused programs, and 38.2% for wellness-focused program. These findings are in line with previous research, which indicates that people are more attracted to gains than to losses and their behavior can be swayed by the framing of the situation.

Hypothesis 6 was supported by the results, which indicated a significantly lower likelihood of participation for outcomes-based programs than for participation-based

programs, regardless of the program type. As previous research has suggested, this may be due to the difficulty in obtaining health outcomes, such as weight loss, as participants may be dissuaded from participating if they believe they will not be able to gain the incentive due to the difficulty of meeting the requirements.

A great advantage to this study was the variety that was found within the participants. Most research on health and wellness programs is confined to a single organization or a single industry. This study was able to examine likelihood of participation in health and wellness programs across industries, companies, and geographic areas. Therefore, the results may be more applicable to a wider variety of companies and industries. Another advantage to this study was the wide variety of ages of the participants, which ranged from 18 to 68 years. This is likely representative of the working population, so the results may be more realistic to what occurs in actual organizations.

Limitations

Whereas the study had many advantages, limitations were present as well. For instance, because participants were recruited via Amazon Mechanical Turk, the disadvantages that come with using this method of data collection are present. For example, participants may not have been paying close attention to the survey or may not have been as motivated to answer honestly as they would be if this was a survey occurring within their organization that may help to shape the health and wellness program they participate in. However, the goal of this study was to gather data from a wide variety of participants from numerous organizations, industries, and geographic

areas. Amazon Mechanical Turk provided a platform for data collection that met the goal of representation that was desired.

Conclusions

This examination of potential predictors of participation in organizational health and wellness programs can be utilized by organizations in terms of designing and marketing their health and wellness program to their employees. Organizations can use this information about who is more likely to participate in health and wellness programs to try to market their programs more strongly toward those who are less likely to participate. In designing the program, organizations can consider the information regarding increased likelihood of participation as incentives increase, as well as the drastic decrease in likelihood of participation if the program is presented with a loss frame, in which participants are required to pay back the incentive if certain requirements are not met. Organizations may want to use caution in considering the basis on which incentives are received, as programs with outcome-based incentives may not be as appealing to employees as those with participation-based incentives.

Future research could examine any potential relationship between race and likelihood of participation in health and wellness programs, as race was omitted from this study. Future research could also examine likelihood of participation in those who are covered by their spouse's employee benefits plan, rather than having the plan themselves. This may impact their motivation to participate, as they may feel that they are not directly accountable because they are not an employee of the organization.

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FIGURES

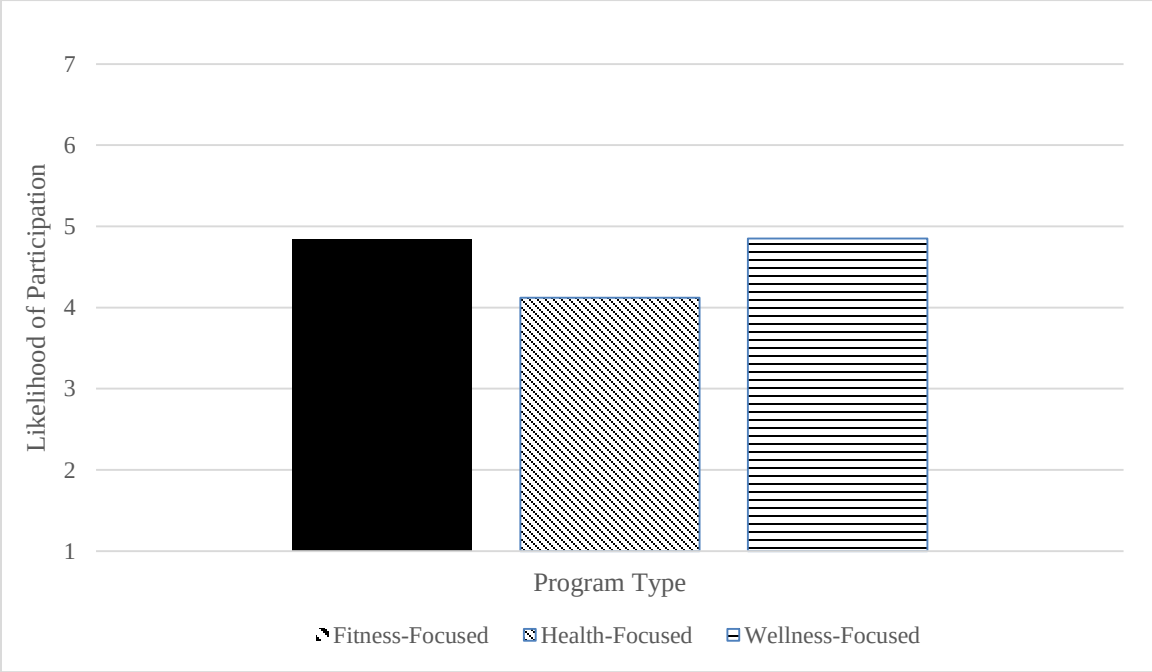

Figure 1. Differences in likelihood of participation for three program types.

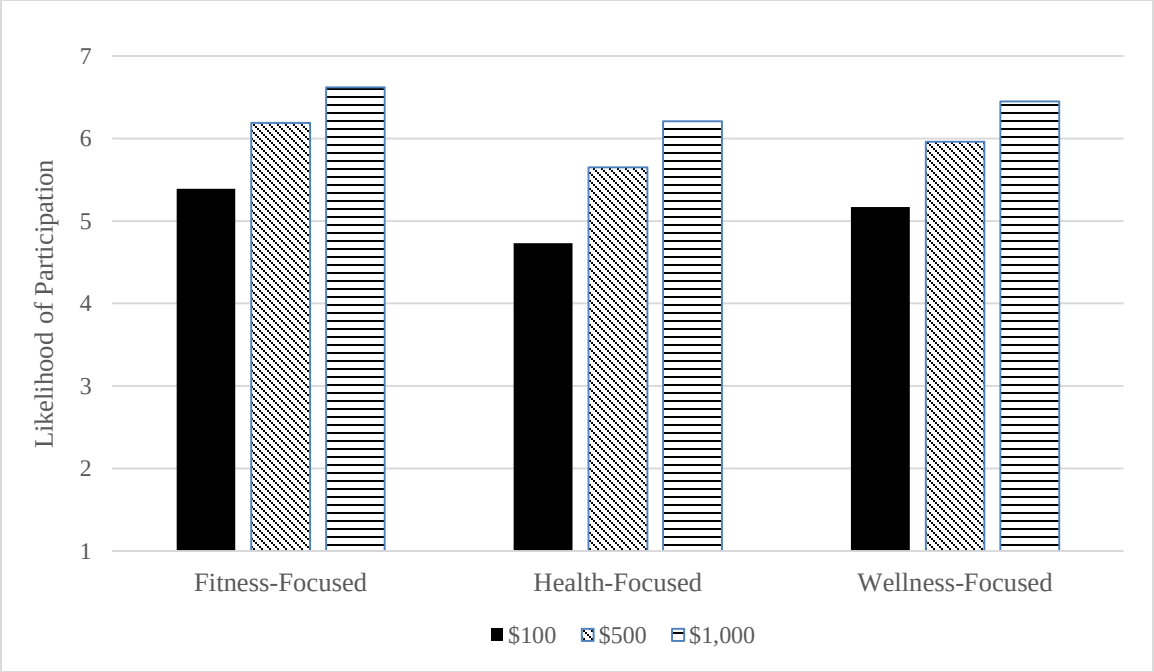

Figure 2. Differences in likelihood of participation between three incentive amounts for each health and wellness program type.

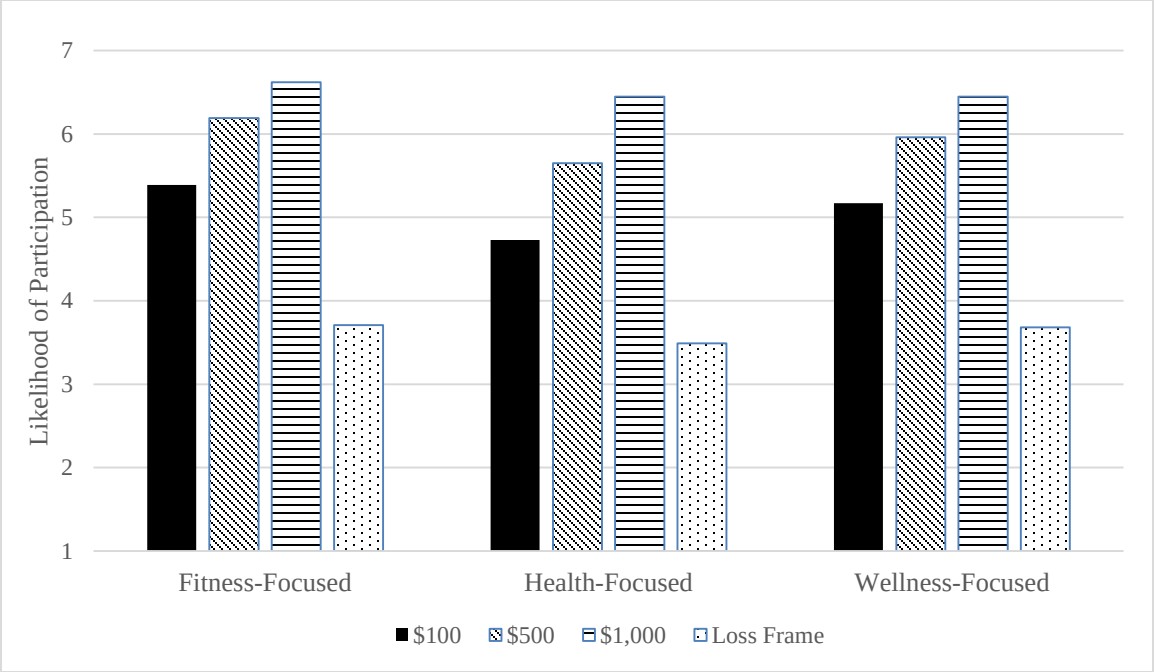

Figure 3. Differences in likelihood of participation between programs with each incentive amount and programs with a loss frame for the incentive.

APPENDIX A

Qualifying Questions

Are you at least 18 years of age?

- ❍ Yes (1)
- ❍ No (2)

Do you live and work in the United States?

- ❍ Yes (1)
- ❍ No (2)

Do you work 40 or more hours per week?

- ❍ Yes (1)
- ❍ No (2)

Are you fluent in the English language?

- ❍ Yes (1)
- ❍ No (2)

APPENDIX B

Demographic Information

Instructions: Please choose the answer that best describes you.

Q4 What is your gender?

- ❍ Male (1)
- ❍ Female (2)

What is your age in years?

What is the highest education level you have completed?

- ❍ Did not graduate high school (1)
- ❍ High school diploma or equivalent (e.g., GED) (2)
- ❍ Associate's degree (3)
- ❍ Bachelor's degree (4)
- ❍ Master's degree (5)
- ❍ Doctoral or professional degree (6)

Within which geographic area of the United States do you live?

- ❍ Pacific (AK, CA, HI, OR, WA) (1)
- ❍ Mountain (AZ, CO, ID, MT, NM, NV, UT, WY) (2)
- ❍ West North Central (IA, MN, MO, ND, NE, KS, SD) (3)
- ❍ East North Central (IL, IN, MI, OH, WI) (4)
- ❍ West South Central (AR, LA, OK, TX) (5)
- ❍ East South Central (AL, KY, MS, TN) (6)
- ❍ South Atlantic (DC, DE, FL, GA, MD, NC, SC, VA, WV) (7)
- ❍ Middle Atlantic (NJ, NY, PA) (8)
- ❍ New England (CT, MA, ME, NH, RI, VT) (9)

What is your 5-digit ZIP code?

Within which industry do you work?

- ❍ Accommodation and Food Services (1)
- ❍ Administrative and Support and Waste Management and Remediation Services (2)
- ❍ Agriculture, Forestry, Fishing and Hunting (3)
- ❍ Arts, Entertainment, and Recreation (4)
- ❍ Construction (5)
- ❍ Educational Services (6)
- ❍ Finance and Insurance (7)
- ❍ Health Care and Social Assistance (8)
- ❍ Information (9)
- ❍ Management of Companies and Enterprises (10)
- ❍ Manufacturing (11)
- ❍ Mining, Quarrying, and Oil and Gas Extraction (12)
- ❍ Professional, Scientific, and Technical Services (13)
- ❍ Public Administration (14)
- ❍ Real Estate and Rental and Leasing (15)
- ❍ Retail Trade (16)
- ❍ Transportation and Warehousing (17)
- ❍ Utilities (18)
- ❍ Wholesale Trade (19)
- ❍ Other Services (except Public Administration) (20)

Short-Form Health Survey

Please choose the answer that best describes you.

Overall Health Perception

In general, would you say your health is:

- ❍ Excellent (1)
- ❍ Very good (2)
- ❍ Good (3)
- ❍ Fair (4)
- ❍ Poor (5)

Pain

How much bodily pain have you had during the past four (4) weeks?

- ❍ None (1)
- ❍ Very mild (2)
- ❍ Mild (3)
- ❍ Moderate (4)
- ❍ Severe (5)

Physical Functioning

The following items were answered on a 1 to 3 Likert scale, where 1 = *Limited for more than 3 months*, 2 = *Limited for 3 months or less*, and 3 = *Not limited at all*.

For how long (if at all) has your health limited you in each of the following activities?

1. The kinds or amounts of vigorous activities you can do, like lifting heavy objects, running, or participating in strenuous sports
2. The kinds or amounts of moderate activities you can do, like moving tables, carrying groceries, or bowling
3. Walking uphill or climbing a few flights of stairs
4. Bending, lifting, or stooping
5. Walking one block
6. Eating, dressing, bathing, or using the toilet

Role Functioning

Does your health keep you from working at a job, doing work around the house or going to school?

- ❍ Yes, for more than 3 months (1)
- ❍ Yes, for 3 months or less (2)
- ❍ No (3)

Have you been unable to do certain kinds of amounts of work, housework or schoolwork because of your health?

- ❍ Yes, for more than 3 months (1)
- ❍ Yes, for 3 months or less (2)
- ❍ No (3)

Social Functioning and Mental Health

The following items were answered using a 1 to 6 Likert scale, where 1 = *All of the Time,* 2 = *Most of the Time,* 3 = *A Good Bit of the Time,* 4 = *Some of the Time,* 5 = *A Little of the Time,* and 6 = *None of the Time*.

For each of the following questions, please check the box for the one answer that comes closest to the way you have been feeling during the past month.

1. How much of the time, during the past month, has your health limited your social activities (like visiting with friends or close relatives)?
2. How much of the time, during the past month, have you been a very nervous person?
3. During the past month, how much of the time have you felt calm and peaceful?
4. How much of the time, during the past month, have you felt downhearted and blue?
5. During the past month, how much of the time have you been a happy person?
6. How often, during the past month, have you felt so down in the dumps that nothing could cheer you up?

Health Perceptions

The following items were answered on a 1 to 5 Likert scale, where 1 = *Definitely True,* 2 = *Mostly True,* 3 = *Not Sure,* 4 = *Mostly False,* and 5 = *Definitely False.*

Please check the box that best describes whether each of the following statements is true or false for you.

1. I am somewhat ill.
2. I am as health as anybody I know.
3. My health is excellent.
4. I have been feeling bad lately.

APPENDIX C

Likelihood of Participation in Three Health and Wellness Programs

Instructions: Below are descriptions of several health and/or wellness programs that can be offered to employees through their employer. Please indicate how likely you would be to participate in each program if it were to be offered by your employer.

The focus of this program is **improving physical fitness**. Examples of features this program may offer are:

- Reduced-price memberships for a local fitness center
- Walking programs
- Fitness classes (e.g., aerobics)

How likely would you be to participate in this type of program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

Please explain why you selected this answer. That is, why would you choose to participate, not to participate, or remain neutral?

The focus of this program is **improving health**. Examples of features this program may offer are:

- Onsite health clinics
- Nutrition counseling with a registered dietitian
- Smoking cessation programs

How likely would you be to participate in this type of program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

Please explain why you selected this answer. That is, why would you choose to participate, not to participate, or remain neutral?

This program focuses on **improving overall wellness**. Examples of features this program may offer are:

- Stress management programs
- Reduced-price memberships for a local fitness center
- Nutrition coaching with a registered dietitian

How likely would you be to participate in this type of program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

Please explain why you selected this answer. That is, why would you choose to participate, not to participate, or remain neutral?

APPENDIX D

Likelihood of Participation with an Incentive

The focus of this program is **improving physical fitness**. Examples of features this program may offer are:

- Reduced-price memberships for a local fitness center
- Walking programs
- Fitness classes (e.g., aerobics)

If you signed up for this program, you would receive **a $100 incentive.**

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $500 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $1,000 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on participation** (e.g., completing a certain number of activities), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on individual outcomes** (e.g., weight loss, health improvement), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you were required to **pay back the incentive** amount if you did not complete certain program requirements (e.g., health screenings, participation in program activities) during

the first 6 months of participation, how likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

The focus of this program is **improving health**. Examples of features this program may offer are:

- Onsite health clinics
- Nutrition counseling with a registered dietitian
- Smoking cessation programs

If you signed up for this program, you would receive **a $100 incentive.**

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $500 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $1,000 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on participation** (e.g., completing a certain number of activities), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on individual outcomes** (e.g., weight loss, health improvement), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you were required to **pay back the incentive amount** if you did not complete certain program requirements (e.g., health screenings, participation in program activities) during

the first 6 months of participation, how likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

This program focuses on **improving overall wellness**. Examples of features this program may offer are:

- Stress management programs
- Reduced-price memberships for a local fitness center
- Nutrition coaching with a registered dietitian

If you signed up for this program, you would receive **a $100 incentive.**

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $500 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you signed up for this program, you would receive **a $1,000 incentive**.

How likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on participation** (e.g., completing a certain number of activities), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If program incentives were **based on individual outcomes** (e.g., weight loss, health improvement), how likely would you be to participate in the program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

If you were required to **pay back the incentive amount** if you did not complete certain program requirements (e.g., health screenings, participation in program activities) during

the first 6 months of participation, how likely would you be to participate in this program?

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)

APPENDIX E

Quality Control Items

Quality Control Item 1: The first quality control item was embedded in the Social Functioning and Mental Health section of the Short-Form Health Survey. It was answered on a 1 to 6 Likert scale, where 1 = *All of the Time,* 2 = *Most of the Time,* 3 = *A Good Bit of the Time,* 4 = *Some of the Time,* 5 = *A Little of the Time,* and 6 = *None of the Time*.

For quality control purposes, please choose the response "Most of the Time" for this item.

Quality Control Item 2: The second quality control item was embedded in the questions regarding likelihood of participation and incentives for participation.

For quality control purposes, please choose the response "Undecided" below.

- ❍ Very unlikely (1)
- ❍ Unlikely (2)
- ❍ Somewhat unlikely (3)
- ❍ Undecided (4)
- ❍ Somewhat likely (5)
- ❍ Likely (6)
- ❍ Very likely (7)