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**WELLNESS INCENTIVES:
CAN THE USE OF FINANCIAL INCENTIVES AND PENALTIES BE EFFECTIVE FOR MOTIVATING
PARTICIPATION IN WELLNESS PROGRAMS AND SUSTAINING HEALTH BEHAVIOR MODIFICATION?**

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Employer-based health promotion programs have been around for about four decades, but in recent years increasing attention is being given to the use of financial incentives and penalties as ways to encourage employees to become more accountable for their own health. The use of wellness incentives has been gaining traction, and employer-sponsored programs that incorporate these types of strategies have been growing rapidly. With the passage of the Affordable Care Act, the upcoming change to federal rules on wellness incentives is likely to drive up participation rates. However, this is not without controversy and it has raised some very important legal and ethical questions regarding the role an employer should play in managing the health of its employees, and the use of economic incentives as a mechanism to influence participation and behavior modification. A theoretical framework is used to help understand employee behavior and analyze the effectiveness of the “carrots and sticks” approach. By analyzing studies on behavioral economic-based interventions for wellness programs, I will try to answer and substantiate the hypotheses put forth in this paper.

THE STATE OF HEALTH OF WORKING AMERICA

Americans are among the unhealthiest people in the world, and consequently the United States spends more on health care than any other industrialized nation. Over the past four decades the U.S. has experienced steady health expenditure growth. In 2009, the Organisation for Economic Co-operation and Development countries on average only devoted 9.6 percent of their GDP to health spending, whereas the U.S. devoted 17.4 percent (OECD, 2011). The U.S. spends two and a half times as much for health care goods and services per person than any of the thirty-four OECD countries, but “yet it ranks poorly on nearly every measure of health status” (Schroeder, 2007). It is estimated that in the U.S. forty percent of all premature deaths annually can be attributed to an unhealthy lifestyle. Substance abuse, poor nutrition, and non-adherence with preventative medicine contribute to chronic health conditions and spiraling health care costs. Obesity and physical inactivity contribute to approximately 365,000 deaths per year, and cigarette smoking alone is estimated to be responsible for over 440,000 deaths annually (Higgins, Silverman, Sigmon, & Naito, 2012). In

addition, because unhealthy personal risk behaviors are prevalent among the economically disadvantaged, it adds to the growing problem of health disparity among this population (Higgins et al., 2012; Schroeder, 2007). An aging population further impacts cost growth, and between 2012 and 2022 the number of people age 65 or older is estimated to increase by one-third (Claxton, Rae, Panchal, Damico, Lundy, Bostick, Kenward, & Whitmore, 2012).

The primary method of obtaining medical coverage in the U.S. has been through the workplace, and approximately 58.3 percent of the population under age 65 is covered by employer-sponsored health insurance (Claxton et al., 2012). However, labor market pressures and rising medical care inflation are weakening this system (Gould, 2006). Private health care and U.S. government spending is predicted to increase by about 6.7 percent a year through 2017 to \$4.3 trillion, and by 2021 health share of GDP is projected to grow to 19.6 percent (Centers for Medicare and Medicaid Services, 2013).

Linking Wellness to Business Outcomes

The prevalence of workplace stress, unhealthy lifestyle, and economic instability

impact medical costs, but can also contribute to the hidden costs associated with absenteeism, disability claims, workplace injuries, and lower employee productivity. In 2012, the average health care premium rate increase for large U.S. employers was 4.9 percent. Although this was down from 8.5 percent in 2011, and 6.2 percent in 2010, health care premiums are expected to rise by 6.3 percent in 2013 (Miller, 2012). Employees' out-of-pocket expenditures and premium costs have increased more than 50 percent over the last five years (Miller, 2012). Over the past few decades, a growing number of companies have strategically accelerated efforts to control rising health care costs and maximize organizational performance by implementing health management programs. Some employers have been successful at developing long-term wellness initiatives that not only focus on improving health, but also create a catalyst for ways to reduce presenteeism and absenteeism, increase productivity, improve morale, and attract and retain employees (Bowden, Fry, Powell, Rosene, & Shewanown, 2010). Strategic alignment with the organizational culture, mission, and core values plays an integral role in motivating participation to ensure the success of health promotion campaigns. Employees and management have a clearer understanding of how wellness fits into the overall business strategy of the company when key stakeholders and leadership are involved in the development of these types of business initiatives.

Shifting the responsibility. Although wellness programs have been around for about four decades, in recent years more companies have been making a shift toward employee accountability, and incorporating the use of financial incentives and penalties as a way to encourage employees to take responsibility for their own health. Some employers have developed more stringent rules and requirements for obtaining rewards, and imposing financial penalties on those employees who choose not to participate in health management programs and activities. According to a Towers Watson/National Business Group on Health

(2011) study surveying 87 respondents in Canada, and 248 in the U.S. from all major industry sectors, the use of financial penalties among American companies more than doubled from 2009 to 2011 – increasing from 8 percent to 19 percent – and was expected to double again in 2012. At the present time Canada is prohibited by law from using penalties, and the use of financial incentives has been slow to catch on, however interest is growing. The Canadian government allows employers to reward employees for voluntary participation only, and prohibits them from targeting groups or using outcomes-based incentives.

In the U.S., the trend towards stricter standards and tougher requirements (some outcomes-based) to earn incentives and avoid penalties is “expected to increase significantly in the coming years” (Towers Watson, 2011: 18). However, this strategy is not without controversy and has raised some very important legal and ethical questions about the role an employer should play in managing the health of its employees, and the tactics used to encourage participation and behavior change. With the passage of the Affordable Care Act, the upcoming change to federal rules on wellness incentives is likely to drive up participation rates, but medical and legal experts caution that employers should consider equity and fairness when implementing these types of programs.

Guiding the Research

This paper explores the research question: Can the use of financial incentives and penalties be effective for motivating participation in wellness programs and sustaining health behavior modification? The subsequent sections define and discuss health promotion in the workplace by looking at various wellness program structures with a focus on participation-based and outcomes-based wellness incentive strategies. Following this, I apply a theoretical framework to help understand employee behavior and analyze the effectiveness of the “carrots and sticks” approach. The hypotheses are based on theory and the research literature reviewed. By doing an

analysis of empirical studies on behavioral economic-based interventions for wellness programs, I will try to answer and substantiate the hypotheses put forth in this paper. Further consideration is given to the laws and regulations that impact wellness incentive programs, and a discussion about the ethical implications of using financial rewards and penalties is provided.

DEFINING HEALTH PROMOTION IN THE WORKPLACE

Health and wellness campaigns have come a long way since the days of handing out T-shirts and water bottles as a way to promote and motivate employees to participate in these programs and related activities. Because more than half of Americans obtain health insurance through their employer, the workplace is an effective venue for which wellness initiatives can be communicated and delivered. According to the Kaiser Employer Health Benefits 2012 Annual Survey, of the companies that participated in the survey (1,579) and offered health benefits, 94% of large firms (200 or more workers) and 63% of small firms (3-199 workers), offered at least one specified wellness program (e.g., biometric screenings, flu shot) (Claxton et al., 2012). Health promotion in the workplace varies greatly with regard to structure and characteristics (e.g., method of delivery, focus of intervention) so defining this term can be somewhat difficult. Shain and Kramer explain the term as a “multidimensional concept” that encompasses two major philosophies about “what health is and how it is influenced” (2004: 643). The first part of the philosophy recognizes that individual behavior influences health, and to a large extent is the individual’s responsibility. Genetics and the environment are considered to some degree, but primarily the focus is on individual behavior (Shain & Kramer, 2004). The second part of the philosophy embraces the concept that outside forces (e.g., the workplace, socioeconomic status) can influence health, and recognizes that many of these factors are beyond the individual’s control. In their review of studies on workplace health promotion in the European Union, Shain &

Kramer found that most organizations were not using a “blended philosophy,” but rather focused mainly on the individual as opposed to the environment (2004: 643). They acknowledge that health as experienced and observed in the workplace is “produced or manufactured by two major forces” that interact with one another in practice (Shain & Kramer, 2004: 643):

- *“What employees bring with them to the workplace in terms of personal resources, health practices, beliefs, attitudes, values, and hereditary endowment; and*
- *What the workplace does to employees once they are there in terms of organization of work in both the physical and psychosocial sense.”*

For instance, management policies that require employees to work overtime, or travel frequently may make it harder for them to manage their own health. Conversely, employees who misuse alcohol or who over medicate and call out sick from work, can make it more difficult for managers to control illness, absenteeism, and workplace safety.

Creating a Healthy Worksite Culture

An increasing number of companies are implementing wellness programs, most of which are voluntary, but finding creative ways to engage employees can be challenging and in some cases rather costly. Designing a wellness strategy that will make the most impact on improving employee health in the most cost-effective way can be difficult to achieve. Employers that build customized, comprehensive, integrated, and diversified programs strongly linked to the firm’s business strategy and core values, have a better chance of achieving desired outcomes. Some businesses with successful and well-designed wellness programs use them as a corporate branding strategy to attract and retain talent, and to enhance their reputation within the industry. A good example of this is Under Armour, a sports apparel manufacturer that is among one of the fastest growing companies in the U.S. The company was voted one of the best places to

work three consecutive years in a row (2010, 2011, and 2012) by Baltimore Magazine.net (McCausland, Antoniadis, Iglehart & Thomas, 2011). Some of the employee perks include a basketball court, and a subsidized café and fitness center located at the company headquarters. The Humble & Hungry Café serves healthy meals and snacks designed by company fitness trainers, and some of its organic herbs and vegetables come from an employee maintained garden. When employees are hired they have the opportunity to work with a personalized fitness instructor. Employees are not just joining a company; they are essentially embracing a whole culture of health and wellness.

Investing in human capital. “Today, many employers associate poor health with reduced employee performance, safety, and morale” (Goetzel & Ozminkowski, 2008: 305). More and more companies are recognizing the importance of investing in human capital and strive to create a commitment-based culture that fosters a more healthy and productive workforce. Workplace cultures with supportive organizational and environmental policies that help to increase employee motivation, build skills, and enhance awareness, create an opportunity for individuals to adopt and maintain healthy behaviors (Aldana, Anderson, Adams, Whitmer, Merrill, George, & Noyce, 2012). These aspects of support are integral components of behavior change theory crucial for health behavior modification.

ELEMENTS OF A WELL-DESIGNED WORKSITE HEALTH PROMOTION PROGRAM

Best practice research suggests that when developing a comprehensive wellness program, the initiative should start with strategic planning to determine the direction, purpose, and the resources required for the design and implementation phase. Planning is a key component because it helps to create transparency of how the program works, what’s expected, how rewards are achieved, and when program success is declared. By doing an organizational assessment, it provides an employer with necessary information to set

reasonable goals, determine the eligible target population, and ultimately develop a wellness program that uses state-of-the art intervention grounded in behavior change theory. Firms with the financial resources have the ability to hire health management personnel, or use an outside health promotion consulting firm to handle the planning, assessment, and management phases. In the current economic climate, and with a lot of companies down-sizing, most often these initiatives are driven by human resource professionals with limited personnel. Because a lot of wellness programs are linked to an employer’s health care plan, the medical provider can serve as an excellent resource when embarking on such an initiative. Wellness programs can vary dramatically, but the primary focus is on improving the health and well-being of workers, and in some cases, is extended beyond the employees to eligible dependents. Generally, the core components of a health promotion program support primordial, primary, secondary, and tertiary prevention efforts (Goetzel & Ozminkowski, 2008; Pronk, 2009). Research shows that several of the diseases associated with the top five health conditions (i.e., heart disease, cancer, respiratory disease, stroke, unintentional injuries) are potentially responsive to health intervention.

Variations of Wellness Programming

Variations in wellness programming can include: 1) *Demand Management* – focuses on controlling the demand for health services by using a variety of interventions to reduce unnecessary and preventable visits to healthcare providers; 2) *Health and Productivity Management* – The focus is on improving workforce productivity and health; 3) *Medical Self-Care* – Various interventions and activities are used to help individuals determine when to seek medical advice or treatment, and when to use applicable treatments at home; 4) *Virtual Wellness* – This style of health promotion programming does not rely on worksite intervention, but rather individuals receive information and support in their homes; 5) *Population Health Management* – This

organizational approach to wellness is often used to assess employee risk and cost migration changes. It is primarily targeted at defined populations (e.g., high-risk employees) to help lower healthcare costs (Partnership for Prevention, 2001).

Assessment and Screening Crucial for Identifying Health and Work Behavior Issues

By assessing health status at the organizational and individual level, employers can make informed decisions about where to invest resources, and how to design programs that will affect large segments of the workforce in the most cost effective way. Health status is influenced by many factors including, but not limited to genetics, lifestyle, socioeconomic status, healthcare, social support, and the environment. The list of factors can vary therefore identifying health determinants is an integral component of a health promotion program. Some determinants are non-modifiable (e.g., age, gender, race), but others are behavioral (e.g., lifestyle, blood pressure) and can be modified with the appropriate intervention. Typically, this information is collected through various methods such as a voluntary health risk assessment (HRA) and/or biometric screening, and used by a third party vendor or health plan to identify areas for improvement. A HRA, generally voluntary, can be an effective tool for compiling individual data on health practices, status, history, and the interest level of the employee for improving their health. A biometric health screening (e.g., blood pressure, body mass index) identifies biological health status indicators and high-risk employees. With this screening, employers can also identify workforce populations most at risk. The data gathered from a HRA or biometric screening should be relevant to risk factors which can lead to chronic disease. These types of assessments identify modifiable risk factors from which a customized targeted intervention program can be created.

Other methods to identify health risks.

Employee health records may be used to identify common health risks and conditions, but can only

be accessed and used by HIPAA authorized personnel. By analyzing medical claims data, an employer can identify the most common and costly claims. However, this information is only limited to the individuals who have used the plan, not the entire workforce. An environmental audit identifies potential physical hazards (e.g., mechanical, chemical), and may also include injury and accident trend data (Chenoweth, 2011). Health fairs have also been a source for identifying health risks and encouraging individuals to participate in wellness programs. Some firms offer free preventative screenings that target a specific demographic population. Also, by having employees fill out productivity surveys, an employer can evaluate employees' perceived productivity level. This information can then be used to gauge the possible impact of health risks on absenteeism and/or presenteeism (Chenoweth, 2011).

WELLNESS INCENTIVE PROGRAMS CAN HELP DRIVE HEALTH MANAGEMENT OUTCOMES

Incentive systems can be an important tool to drive health program enrollment and catalyze health behavior change. Some incentive-based strategies can be expensive to administer, but if the program is structured and tailored from an organizational and individual perspective, it can be an effective part of the total health cost management scheme. Many things need to be considered before developing and implementing any type of incentive system. Chenoweth, an international expert in worksite health promotion, suggests answering the following first: 1) *“What kind of participation and behavioral changes can realistically be achieved with incentives?”*; 2) *“What types of incentives motivate and sustain employee participation?”*; 3) *“What types of criteria should employees meet to earn an incentive?”*; 4) *“What level of financial incentive generates the greatest impact?”*; 5) *“When is the best time to use specific types of incentives?”*; 6) *“What is the best way to administratively structure incentives?”* (2011: 21).

The answers to these questions will help create a roadmap for structuring an incentive plan

that is going to make the most impact on a large group or target population. Further consideration must also be given to the state and federal regulations for wellness programs.

Wellness Incentive Features

Incentive features are elements of an incentive system that work in conjunction with other strategic programmatic efforts. For instance, a wellness incentive may be offered to employees if they complete a health risk assessment or participate in a wellness activity. Most incentive features use positive rewards to induce behavior change, but some of these features can also include negative rewards or disincentives. Wellness incentives can be categorized into tangible and intangible rewards. Workplace wellness experts suggest using both as part of the framework in order to achieve a well-balanced incentive program (Hunnicuttt & Chapman, 2005). Having both tangible and intangible rewards provides a greater range to maximize the motivational force or behavioral strength of the program. A tangible reward usually involves something concrete, such as material or merchandise, and is easily measured. This type may include, but is not limited to: immediate rewards, future financial rewards, avoidance of immediate and future financial cost, and future time off (Hunnicuttt & Chapman, 2005). Intangible rewards have largely an intrinsic and psychological value to the individual because this type is non-financial in nature. Some major examples include recognition, belonging (affiliation with other individuals), acceptance or approval, group competition, and role models (exemplars) (Hunnicuttt & Chapman, 2005).

Variations of Wellness Incentive-based Strategies

Incentive-based wellness strategies have many variations, some of which build on conventional wellness programs. The primary goal is to help participants earn a reward so wellness activities are typically organized around an incentive program framework. Participation is generally voluntary, but some incentive models include a few mandatory components such as

completion of health risk appraisals, annual program orientation sessions, or health care use workshops (Hunnicuttt & Chapman, 2005). Some incentive strategies use a balanced approach to short and long-term clinical and behavioral health risks. Specific incentive requirements and/or participation requirements are developed from long-term factors (e.g., BMI, cholesterol level, blood pressure) and are “balanced against criteria that have short-term impact, such as seat belt use, smoking and acute pulmonary disease, stress and asthma management, low back injury prevention, etc.” (Hunnicuttt & Chapman, 2005: 30). The expectancy component of Expectancy Theory is important in determining the effectiveness of participation-based and outcomes-based incentive strategies. In the theoretical framework section I explain this theory in more detail to help understand motivational force and individual behavioral decision making.

Completion of a health risk appraisal. As mentioned previously, health risk assessments are a crucial component of wellness programming so employers often tie financial rewards, and sometimes penalties, to completing a HRA. Because only a small percentage of moderate and high-risk individuals complete health risk assessments, financial incentives have proved to be an important tool for boosting HRA participation. The aforementioned Kaiser/HRET report showed that 63% of large firms (200 or more workers) offered a financial incentive to employees who completed a health risk assessment (Claxton et al., 2012).

Participation-based incentives. The financial incentives, sometimes penalties, are contingent upon an individual participating in a health promotion program or related activity (e.g., health risk appraisal, biometric screening). With this strategy, individuals are rewarded for their efforts regardless of individual health outcomes. Typical participation categories may include physical activity efforts; compliance with preventative service examinations; participation in self-care and health care programs;

participation in health-risk reduction and life-enrichment programs (Cox, 2003).

According to the Kaiser/HRET Survey, 11% of large firms reported that there were instances when an employee with an identified health risk factor was required to complete a health management program or activity, in order to avoid a financial penalty such as higher patient cost sharing, or a higher premium contribution (Claxton et al., 2012). Johnson & Johnson was one of the first companies to reward employees for participating in a wellness program. After they started offering \$500 discounts on annual health insurance premiums, program participation rapidly increased to 90%. Most companies can not afford a financial incentive of this magnitude, but successful participation levels can still be achieved even when a smaller amount is offered (Chenoweth, 2011).

Biometric screening. Biometric screening enables “the individual to meet specific incentive criteria and to qualify for the incentive reward through achievements as well as participation” (Hunnicuttt & Chapman, 2005: 30). This particular tool is heavily emphasized with programs that utilize outcomes-based incentives. The biometrics are used to “reinforce the clinical and medical objectives of the program, and to help the individual manage their own health more effectively in the context of the criteria used by the incentive program” (Hunnicuttt & Chapman, 2005: 30). Actual biometric scores can only be used if the participation feature is part of the program.

Outcomes-based incentives. These types of strategies are linked to the attainment of certain health benchmarks, such as body mass index or blood pressure level. The rewards and/or penalties can either be for the attainment of specified standards (e.g., BMI below 29, lower cholesterol level), or for improvement in health risk factors (e.g., smoking cessation). This type of wellness incentive is part of a growing trend and is expected to increase in the coming years. However, many behavioral and wellness experts do not support rewards tied to health

improvement because they feel these programs fail to incentivize meaningful and sustainable behavioral change. Additionally, outcomes-based financial rewards and penalties tied to health plan costs can be perceived as unfair and discriminatory, and could potentially create barriers to wellness for certain socioeconomic groups. The Kaiser/HRET Survey reported nine percent of large firms (200 or more workers) that ask employees to complete a health risk assessment, either financially reward or penalize them based on whether they meet specific biometric outcomes, such as meeting a target BMI, or cholesterol level (Claxton et al., 2012).

Currently, the federal regulations require that the total amount of all rewards and penalties used for this type of incentive not exceed 20% of the total cost for health coverage (i.e., sum of employee and employer contributions). With the passage of the Affordable Care Act, in 2014 the total maximum will increase to 30%, and to as much as 50% for programs designed to prevent or reduce tobacco use. The new federal guidelines on wellness incentive limits and union opposition add to the controversy. Typically, unions oppose outcomes-based rewards because of employee health-related information privacy concerns, and the potential for unequal treatment of union members by employers (Tu & Mayrell, 2010). I provide a more in-depth discussion about these types of incentives in the legal and ethical sections of the paper.

BEHAVIORAL THEORETICAL FRAMEWORK: BENDING THE COST CURVE WITH CARROTS AND STICKS

So what does it say about our society in general that some of us need to be financially incentivized in order to encourage healthy behaviors and lifestyle choices? There is a substantial amount of empirical evidence that shows by leading a healthy lifestyle it can lower the risk for chronic diseases, promote a sense of well-being, and increase the probability of longevity. From a common sense perspective, the data alone should be enough to motivate an individual to engage in actions that would help

him or her achieve optimal health. However, the realm of health and wellness is very complex and many factors can play a role in the choices we make so there is a no one-size-fits-all approach when it comes to lifestyle change.

“Behavioral economics research suggests that people may be more motivated to avoid loss (i.e., penalties or surcharges) than to make equivalent gains” (Joint Consensus Statement, 2012: 894). Some people believe that healthy behavior is derived from autonomous motivation, and that rewards serve as a catalyst for building a long-term partnership culture. Company culture and management practices have a direct influence on whether employees will be rewarded for healthy behavior, or penalized for unhealthy behavior. Health promotion and disease prevention can vary considerably from simple behaviors that require one specific action (e.g., flu shot, health risk assessment) to complex health modifications (e.g., smoking cessation, weight management) that require a lengthy process and must be maintained (Kane, Johnson, Town, & Butler, 2004). Complex healthy behaviors require more time and effort to achieve and sustain. Lifestyle modifications are psychologically more costly because individuals have to abstain from something that is perceived as pleasurable. By analyzing various theoretical perspectives, I apply relevant theories to help understand the motivational forces associated with wellness program participation, and the impact incentives have on the acquisition and maintenance of modifiable health-related risk behaviors.

For the past few decades there have been contentious debates in both the public and private sectors over the extent to which individuals should be held personally responsible for their own health. As mentioned previously, employers are starting to take more aggressive measures in order to get workers to change their unhealthy behaviors. Some of these measures, often broadly referred to as the “carrots and sticks approach,” come in the form of financial incentives and penalties. Penalties, also known as disincentives, are a fairly new trend but there are indications to suggest that it is growing in

popularity. For instance, in 2009 Clarian Health, a large Indianapolis health care system, made headlines when it took an aggressive stance by mandating changes in employee behavior to deal with escalating health care costs. The company announced it would begin charging employees up to thirty dollars per paycheck when they fail to meet minimum standards for blood pressure, cholesterol, blood glucose, tobacco, and body mass index. This example may be just the tip of the iceberg, and as employers grapple with the growing health care problems faced in the U.S., we will most likely continue to see more of these types of controversial strategies.

Core Principles for Rewarding Change

VanWormer and Pronk, leading experts in the field of health promotion, define an incentive as “a tangible commodity or service given to an individual that is contingent on some predefined action being performed or outcome being realized” (2009: 239). They point out that although incentive programs make sense from a behavioral perspective, many are designed inefficiently or ineffectively. It can be difficult to implement an incentive program that targets a large group or population. Behavioral scientists have identified two core principles that optimize incentives; they include value and contingency (VanWormer & Pronk, 2009).

Value. *Value* is the central tenet of an incentive program. “The receivers of the incentive must value what they expect to get in order to do the work” (VanWormer & Pronk, 2009: 240). For example, a company might have a program that rewards an employee with a \$50 gift card for completing a health risk assessment. The employee must feel that the incentive is valuable, relative to the work, in order for it to motivate them. So how does one determine what is valuable? Because each employee has their own idea of what they consider to be a beneficial incentive, there is no simple answer to this question. One employee may find the \$50 gift card example a reasonable value, while another employee may not. Trying to determine the right mix of incentives for a workforce or target

population may require making assumptions based on past experience or other evidence (VanWormer & Pronk, 2009). Wellness experts and benefits consultants believe \$100 seems to be the amount that for a single instance of behavior drives participation in a wellness activity, or motivates completion of a HRA. This amount can be gradually increased to boost or maintain participation. Conditioned items of value usually consist of, but are not limited to: cash, coupons, discounts, and gift cards.

Magnitude. The *magnitude* of the incentive is very important because it measures how much or how strong the incentive needs to be in order for the target population to value it. For example, offering a \$10 incentive gift card to employees with a median annual salary of \$75,000 will probably not be enough for them to value it. Offering this same group of employees a \$500 discount on their health insurance premium may be a sufficient amount for them to feel the incentive is a valuable benefit. The incentive magnitude should correlate with how deprived the population is of the incentive you are giving, and should be proportional to the work (VanWormer & Pronk, 2009). However, if the incentive is too high then employees may feel they are being coerced which may result in a decreased level of motivation.

Frequency. Another consideration is the *frequency* of when an incentive is delivered. Should incentives be given once a year or at various intervals? The answer to this lies with the proportion to work. If more work is being done then it should be incentivized more frequently. Wellness programs typically focus on lifestyle changes some of which occur over long periods of time (e.g., weight management). It makes more sense to reward the target behavior at regular intervals, particularly in the beginning, so that it reinforces and motivates those behaviors over the long-term. The time between when the target behavior is achieved and the delivery of the incentive is called the *immediacy* component. This component is commonly overlooked, but it does play a crucial role in an incentive program. VanWormer and Pronk point out that “incentives

are most effective when they are delivered immediately after the target behavior is performed” (2009: 241). When there is too much lag time in between the behavior and incentive, the incentive becomes weaker and less certain.

Contingency. The *contingency* principle means that the incentive must be earned, or must follow the work. A contingent relationship is based on whether the behavior of interest is performed in order to receive the incentive. A true contingent relationship needs to be communicated and delivered with clarity and consistency. Individuals must know exactly what they need to do in order to qualify for the promised incentive (VanWormer & Pronk, 2009).

Expectancy Theory

Expectancy Theory (Porter & Lawler, 1968; Vroom, 1964) is a model of motivation that is used to explain individual behavioral decision-making. As a model of behavioral choice it can be used to predict and explain the decisions of individuals with respect to health-related behaviors. Expectancy Theory posits that individuals make choices in considering behaviors and behavioral outcomes. With respect to health care, they make decisions about initiating behaviors that are related to health (e.g., behaviors designed to reduce blood pressure). According to Expectancy Theory each behavioral option under consideration has a motivational force. Individuals choose the behavioral option with the greatest motivational force. Motivational force is comprised of three components: expectancy, instrumentality, and valance.

Expectancy. The expectancy component is the belief that an individual’s effort will yield the desired health-related behavior. For example, will participation in an aerobic exercise program lead to reduced weight or reduced blood pressure? An individual’s expectancy belief is based on their past experience, coupled with their self-efficacy, or confidence that they have the ability to perform the perceived difficulty of the tasks required.

Instrumentality. This is the belief that performance of the required tasks will lead to desired outcomes. For example, will participation in an exercise program actually lead to the rewards promised by the employer, or will meeting the weight targets be rewarded.

Valance. Valance is the perceived value to employees for the rewards being offered by the company. This is much like the variable magnitude in the VanWormer and Pronk (2009) model. The reward or outcome in question can be thought of as extrinsic or intrinsic. Extrinsic valance refers to the value of the incentive being offered by the employer. Intrinsic rewards are mediated by the individual and are based on the individual's satisfaction with performing a task, achieving a goal, or meeting a health-related outcome. In general, the lower the valance for intrinsic rewards associated with a behavior, the greater the need for extrinsic rewards to be valued in order to motivate that behavior.

THE TRANSTHEORETICAL MODEL OF BEHAVIOR CHANGE

*"Change is a process, not an event."
– James O. Prochaska*

James Prochaska and his colleagues at the University of Rhode Island Cancer Prevention Research Center developed the Transtheoretical Model (TTM) to promote effective interventions for evidence-based health behavior change. The integrative model applies stages of change to complex health behaviors such as smoking cessation, exercise, diet, alcohol abuse, weight control, and a wide range of others. TTM is a model of intentional change. It primarily focuses on the decisions of the individual to modify an existing behavior(s) in order to achieve optimal health. This theory is relevant to the research question in that it directly relates to the various stages an employee may go through before deciding to participate in a wellness program, and the stages that occur after action has been taken. The success of a health promotion program is dependent on employee participation and behavioral modification. Wellness programs grounded in TTM may achieve desired outcomes

when and if employee behavior is modified and sustained over a period of time. The following explains the five stages of change (Prochaska & Velicer, 1997):

Precontemplation. This is the stage in which individuals have no intention of changing their behavior within the foreseeable future, usually measured as the next six months. Many people in this stage are unaware of their problem(s), or that there is a need for change. They may also be uninformed or underinformed about the consequences of their high risk behaviors, and characterized as not ready to participate in a health promotion program. Individuals at this stage may have tried to change a number of times, but the inability to modify their behavior is degrading. Avoidance is common with people in this group. They tend to avoid reading, talking, or thinking about their high risk behaviors. Using various methods of employee engagement to communicate program information may be futile at this stage. However, having a healthy worksite culture with a strong support system can be a catalyst for nudging them from precontemplation into contemplation.

Contemplation. Contemplation is the stage in which individuals have identified a problem, but are contemplating whether or not there is a need to take action in the next six months to correct it. They are looking at the pros and cons of participating in a wellness program and weigh the positives against the negatives, but they are still unable to commit. This balance between the costs and benefits can potentially prolong the time an individual remains at this stage. Wellness incentives and/or disincentives can serve as a motivating force to counterbalance behavioral procrastination, and move them from this stage into the next.

Preparation. Preparation is the stage entered into once the individuals have decided there is a need to take some action, usually measured as the next month. They actively plan to change their behavior in the immediate future and tailor their needs to the wellness and health education programs that are offered. At this stage

individuals may be prompted to complete a health status assessment and/or biometric screening. These data will be crucial for developing an effective targeted intervention plan that focuses on the modifiable risk factors, and methods for achieving health-related behavior change.

Action. Action is the stage in which individuals implement their plans and change their behavioral patterns. At this point they are actively participating in a wellness program and making specific overt modifications to their lifestyle. They must meet specific criterion that is sufficient to reduce risks for disease, and to qualify for certain financial rewards, or in some cases avoid penalties.

Maintenance. Finally, maintenance is the stage in which individuals work to prevent relapse and consolidate the gains attained during the action stage. Health behavior modification is sustained through continuous participation and improved health. Self-efficacy research and temptation indicate that maintenance can last from six months to about five years. Wellness programs and incentive strategies should be evaluated on a continuous basis to ensure that individuals in this stage remain motivated, and rewarded for maintaining a healthy lifestyle.

For a wellness program to be successful, it must offer incentives for each stage of change. The question as to how long do new health-related behaviors last, and whether rewards used to modify these behaviors have to be continued is paramount in this model. These questions are also the focus of Self-Determination Theory

SELF-DETERMINATION THEORY

“To be self determined is to endorse one’s actions at the highest level of reflection.”

– Edward Deci and Richard Ryan

Initially developed by Edward L. Deci and Richard M. Ryan at the University of Rochester, Self-Determination Theory (SDT) is a macro-theory of human motivation, personality development, and well-being. The theory focuses on volitional or self-determined behavior, and

how social and cultural factors facilitate or undermine an individual’s sense of volition, initiative, behavior and well-being (Deci & Ryan, 2008). The core concept of SDT postulates a set of basic and universal psychological needs – autonomy, competence, and relatedness – “which when satisfied yield enhanced self-motivation and mental health, and when thwarted lead to diminished motivation and well-being” (Ryan & Deci, 2000: 68). The most central distinction in SDT is the difference between autonomous and controlled motivation derived from the five mini-theories framework (Deci & Ryan, 2008). The theories of SDT have been applied in a wide range of research fields such as health and medicine, education, organizations, sports and physical activity, religion, and more recently in behavioral economics (Deci & Ryan, 2008; Pugno, 2008).

The Self-Determination Health Behavior Model

From the perspective of SDT, and based on the behavioral mediators, more attention should be given to the individual’s experience and motivation. When the individual internalizes values and skills for change, thus experiencing self-determination, modified behavior will be sustained. Additionally, when the individual experiences autonomy, competence, and relatedness, the “regulation of health-related behaviors is more likely to be internalized” and modification will be better maintained (Ryan, Patrick, Deci, & Williams, 2008: 2). There are many approaches to initiating change, such as the use of external pressure (e.g., financial penalties), control, and the positive use of tangible and intangible rewards. However, most of these approaches do not address what happens after health behavior modification is achieved. In contrast, SDT specifically focuses on the processes “through which a person acquires the motivation for initiating new health-related behaviors and maintaining them over time” (Ryan et al., 2008: 2). SDT posits that autonomy and competence are core components for the internalization and integration processes, through which a person comes to self-regulate and sustain healthy behaviors (Ryan et al., 2008).

Autonomy. Most health-related behaviors (e.g., medication adherence) are not intrinsically motivated. Therefore in order for these behaviors to be achieved and maintained outside of a treatment setting or controlled environment, they must be valued by the individual and viewed as important (Ryan et al., 2008). The use of wellness incentives to motivate behavior change is labeled as controlled motivation or external regulation. SDT argues that an individual will only act to get an external reward, avoid a penalty, or comply with social pressures.

Competence. A person must not only have a sense of autonomy, they must also feel confident and competent to change. SDT supports competence through effective feedback and relevant inputs. With SDT, individuals are given skills and tools for change and supported when competence and control-related obstacles emerge. In the SDT model of change, autonomy facilitates competence and when a person is “volitionally engaged and has a high degree of willingness to act,” they are most likely to gain knowledge of new strategies and competencies (Ryan et al., 2008: 3). SDT posits that adherence is not achieved by competence alone, it must be associated with volition and autonomy.

Relatedness. Like many models of intervention and change, the relationship between an individual and a practitioner can serve as an important catalyst for change. In most cases, the individual is relying on the expert for guidance and inputs (e.g., information about wellness programming and targeted intervention). The individual must feel respected, understood, and cared for so that a sense of connection and trust can be formed. When this happens internalization occurs. At this point the impact of relatedness on the individual is high, which allows them to be more open to receiving information necessary for change (Ryan et al., 2008).

SDT is relevant to the research question in that it shows how intrinsic and extrinsic motivation affect wellness participation and health behavior modification. The SDT continuum

further demonstrates the impact of internal (e.g., self-awareness) and external regulation (e.g., penalties) on participation and behavior modification (Ryan & Deci, 2000). Having a healthy worksite culture and a wellness program with an integrated support system that emphasizes positive reinforcement, increases the probability of an individual moving along the continuum and achieving intrinsic regulation. It is at this point that they will be “self-determined” to maintain a healthy lifestyle.

RESEARCH HYPOTHESES

The model for wellness incentives is driven by the wellness program structure, financial incentive strategies, and employee motivation. Program structure may include characteristics such as employee-specific and/or target population behavior change interventions; method of delivery; health risk assessment and/or biometric screening; and communications strategy. The financial incentives and penalties (i.e., outcomes-based, participation-based) are independent variables that drive program participation and serve as a motivational force to induce behavior change. The effectiveness of an incentive strategy depends on certain factors – moderator variables. Moderator variables include incentive value, magnitude, frequency, and contingency. Other moderators include major dimensions of health status determinants, but are not limited to: genetics; health care; worksite, physical, social and service environments; and lifestyle. The moderators have a direct impact on employee motivation, lifestyle choices, and behavior modification. For instance, someone who is genetically predisposed to having high cholesterol might find it difficult to meet specific outcomes-based criteria and qualify for this type of incentive. Consequently, their health status may be a deterrent for them to participate in a wellness program. The desired outcomes are dependent (variables) on the effectiveness of the wellness incentive strategies. Desired outcomes may include lower absenteeism, reduced health care costs, improved employee health, and

increased job performance. The wellness incentives model is illustrated in Figure 1.

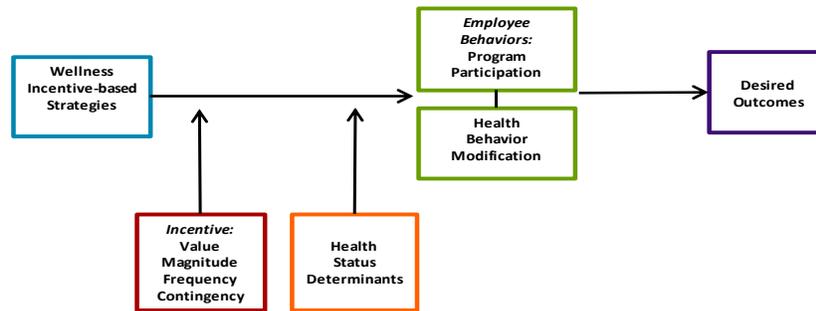


Figure 1 Wellness Incentives Model

The following hypotheses are suggested based on the theories and strategies reviewed.

- Hypothesis 1a: The use of financial incentives will increase employee participation in a wellness program.
- Hypothesis 1b: When the magnitude of a financial incentive increases, employee participation in a wellness program will increase.
- Hypothesis 2: Financial incentives (positive reinforcement) will promote health behavior modification, but lifestyle changes will not be sustained once the reinforcement is no longer offered.
- Hypothesis 3: Financial penalties (negative reinforcement) will promote health behavior modification, but lifestyle changes will not be sustained once the reinforcement is removed.
- Hypothesis 4: Having a healthy supportive worksite culture will increase employee participation in a wellness program.

ANALYSIS OF STUDIES ON BEHAVIORAL ECONOMIC-BASED INTERVENTIONS

Financial incentives have been used for changing health-related behaviors since the 1960s and the advent of behavior modification and behavior therapy (Higgins et al., 2012). The addiction field has done extensive research on health-related incentives and commonly refers to this approach as contingency management. Higgins et al. posit that the systematic use of financial and other material incentives can effectively reinforce healthy behavior modification to promote health and prevent disease, because it draws from the “same powerful process of reinforcement and associated neurobiological processes that drives unhealthy behavior” (2012: S4). In other words, “financial incentives activate the very same dopamine-based, mesolimbic brain reward systems that drive repeated drug use, fatty food consumption, and other operant behavior” (Higgins et al., 2012: S3; Knutson, Adams, Fong & Hommer, 2001). The following analyses of studies on economic-based interventions will try to answer and substantiate the hypotheses put forth in this paper.

The Impact of Participation-based Incentives on HRAs

Seaverson et al. (2009) did a cross-sectional study of 36 employers (n = 559,988 employees) to determine the impact of financial incentives,

including incentive design and value, on health risk assessment (HRA) participation rates. Because HRAs serve as a catalyst for other health behavior management programs, this study examined other factors that influence employee participation such as communications strategy and worksite culture. Seaverson et al. (2009) hypothesized that these two factors support the intrinsic value of good health, and will demonstrate higher participation rates than organizations that rely solely on incentive strategies.

The sample consisted primarily of large companies (those with $\geq 10,000$ employees) from a broad range of public and private sector industries. Participation was voluntary and only companies that offered a comprehensive wellness program and financial incentives for completing a HRA were included. The study was based on a two year program (2004–2006). Detailed information on communications strategies, program design, and worksite culture were collected using semi-structured interviews.

Results. Of the eligible employees (559,988) 49% participated in the HRA. The results showed that program maturity did not have a significant impact on HRA participation, but rather factors such as communications, incentive value, and incentive design had a greater influence. The study found that most companies used cash-based incentives (44%) or benefits-integrated incentives (44%), and the rest used nonfinancial incentives ($< \$25$). The mean incentive value was just over \$100 with most companies offering incentives between \$50 and \$100. “Sixty-seven percent of organizations ($n = 24$) met the criteria for strong communications, whereas 42% ($n = 15$) met the criteria for strong culture” (Seaverson et al., 2009: 347). After comparing worksite culture and communications strategy, the study found that “39% of the organizations were strong in both factors, 31% were weak in both factors, and 28% had a strong communications strategy but a weaker culture” (Seaverson et al., 2009: 347). The results show that companies understand the role of communications in creating a healthy worksite culture, and implement stronger

strategies than those that do not focus on building a healthy environment. In the organizations that had a strong culture, HRA participation rates were significantly higher than that of the organizations with a weaker culture (58% vs. 44%, respectively). Seaverson et al. concluded from the study that “although extrinsic motivators – such as financial incentives – may play a useful role in initiating change processes (i.e., engagement, and even short-term adherence), the processes of change must transition individuals to intrinsic motivation to maintain long-term change in the absence of extraordinary, and probably unsustainable, extrinsic motivators” (2009: 349). The findings of the study support *hypotheses 1a, 1b and 4*.

The Impact of Financial Incentives on Behavior Change Program Participation

Gingerich, Anderson and Koland (2012) conducted a retrospective cohort study of twenty-four large public and private employers to see what impact financial incentives had on health behavior change, program participation and risk reduction rates. The outcome variables were registration and completion rate, and risk change rate for participants in health behavior change programs. Each employer created its own incentive structure that consisted of companies without incentives, companies with incentives of less than \$100, and companies with incentives of \$100 or more. The results of the study showed that financial incentives were associated with significantly higher health coaching completion rates compared with companies that did not offer an incentive (82.9% vs. 76.4%, respectively). There was not a statistically significant difference in intervention registration rates and risk improvement rates between companies with and without incentives. Gingerich et al. (2012) point out that although financial incentives increase participation rates, they may not be effective at improving population health or cost-effective for the employer. These results support *hypothesis 1a and 2*.

A Meta-analytic Study on Outcomes-based Incentives for Weight Loss

Burns, Donovan, Ackermann, Finch, Rothman, and Jeffery (2012) did a meta-analytic literature review of studies that utilized material incentives to promote weight loss, and obesity-related lifestyle behaviors (e.g., physical activity) linked to weight loss among adults. After reviewing relevant articles from 1965 – 2011, of the 942 articles only 27 met the inclusion criteria. Upon reviewing the literature the researchers proposed using an operant conditioning framework (Skinner, 1953) to determine the effectiveness of the four incentive-based strategies (i.e., cash rewards, lotteries, deposit contracts, gifts) reviewed. Unlike prior studies, this one utilized operant conditioning theory because it considers changes in behavioral patterns over time relevant to the weight loss domain. Volitional behaviors are followed by consequences and reinforcement is achieved through positive (i.e., reward for engaging in target behavior) or negative reinforcement (i.e. stimuli to increase frequency of target behavior). Burns et al. (2012) also hypothesized that once an incentive was discontinued (i.e., extinction) the target behavior or outcome would return to baseline levels.

Results. The study found that incentives were most effective within six months or less of delivery, and had diminishing effects over longer periods of time, especially if they were discontinued altogether. “Consistent with classic findings of extinction, weight loss was rarely sustained after the reinforcement was removed – a finding that is predicted by economic models” (Burns et al., 2012: 385). The researchers point out that from a cognitive perspective sustaining behavior modification is difficult because the individual must transition from extrinsic motivation to internal reinforcements. Weight loss was better maintained in group-based deposit contracts possibly because this dynamic allowed participants to develop a close support network of friends they trusted. Burns et al. (2012) argue that because people are not always rational in their decision making processes, they may need mechanisms such as financial

incentives to guide them to a healthier lifestyle. Extrinsic motivators do not always work especially for those people who tend to engage in behavior that they find to be intrinsically rewarding. The researchers posit that these people will be less receptive to external rewards consistent with Self-Determination Theory (Burns et al., 2012). Perhaps material incentives would be better suited for individuals who are not intrinsically motivated to engage in behaviors that will be instrumental for weight loss. Although the size of the incentive varied greatly, the literature suggests that larger incentives are more effective than smaller ones, particularly in the studies with deposit contracts. The research showed that increasing the size of a deposit contract (\$30, \$150, and \$300) had a positive correlation with weight loss (Burns et al., 2012). The results from the meta-analysis support *hypotheses 1b, 2 and 3*.

Outcomes-based Incentives for Cardiovascular Risk Reduction

Gomel, Oldenburg, Simpson, and Owen (1993) conducted a randomized efficacy study of four worksite based cardiovascular disease risk factor interventions: health risk assessment (HRA), risk factor education, behavioral counseling, and behavioral counseling with financial incentives. They hypothesized that behavioral counseling interventions would have a greater impact on the risk factors than would the HRA and educational interventions. The study recruitment and interventions were conducted in the Ambulance Service of New South Wales, Australia over an eighteen month period. Twenty-eight stations were randomly selected and employees were recruited on a voluntary basis. Four hundred thirty-one employees, out of 488 eligible staff, participated (88% participation rate). The behavioral changes were self-reported and validated using biochemical and physical measures.

Intervention conditions. Ambulance stations, rather than individuals, were assigned to each of the four risk factor conditions. Participants were grouped by *health risk assessment, risk factor education, behavioral counseling, and behavioral*

counseling plus incentives. The behavioral counseling plus incentives group were offered a range of graduated outcomes-based incentives based on making lifestyle modifications, and risk factor reduction targets at three and six month intervals.

Results. Participation remained high with rates of 94%, 86% and 84% over the 3, 6, and 12 month assessment period, respectively. The study provided evidence that interventions that use behavioral counseling produced greater changes in some of the cardiovascular risk factor measures when compared with the education or HRA screening alone (Gomel et al., 1993). The behavioral counseling group had significantly higher cessation rates than that of the HRA and risk factor education groups. Although all the groups had an overall increase in weight over the twelve month period, the increase was lower for the behavioral counseling and behavioral counseling plus incentives groups. The behavioral counseling group achieved greater long-term reductions in blood pressure over the twelve month period, than did the behavioral counseling plus incentives group. Gomel et al. point out that this could be attributed to the “negative effects of incentives, to the additional counseling, or to the more frequent contact that participants in the behavioral counseling group received” (1993: 1237). Physical activity increased significantly for all groups; however it was not maintained at twelve months. Although participation rates remained high which appears to support *hypothesis 1a*, the findings for some of the risk factors were mixed for the group that received behavioral counseling plus incentives. Therefore, based on the inconclusive results *hypothesis 2* is unsupported.

Supplementing a Smoking Cessation Program with Incentives and Competition

Koffman, Lee, Hopp, and Emont (1998) conducted a twelve month study of three large worksites in California to determine the effectiveness of a multicomponent smoking cessation program supplemented by financial incentives and team competition. All eligible

participants were regular tobacco users. A quasi-experimental design was used to compare the effectiveness of three different smoking cessation programs, one for each worksite.

Intervention. Worksite one (5943 employees) was assigned to a multicomponent program and an intervention plan based on the Transtheoretical Model of Behavior Change to promote maintenance and prevent relapse. Worksite two (3300 employees) was assigned the same type of program plus a cash incentive contest for abstaining from smoking. Evaluations were done at 5, 6, and 12 month intervals to assess abstinence rates, and to determine which participants were eligible for the cash incentives. Worksite three (2500 employees) served as the control group and was assigned to a typical cessation program with no cash incentive. Participants in this group had to pay a \$20 fee to join that was refundable upon completion of the program, and was not contingent upon smoking cessation.

Results. At six months, the incentive-competition group had a significantly higher percentage of smokers who quit (41%), than the multicomponent group (23%) or the traditional group (8%). Because the incentive group received rewards on a continuous basis for 5 months, Koffman et al. (1998) argue that this could have motivated higher abstinence rates. At twelve months, the incentive-competition group had a 37% quit rate which was not significantly different than that of the multicomponent group (30%). Koffman et al. (1998) suggest if the rewards were offered for the full twelve months at regular intervals, the incentive-competition group would have had a better performance. The results support *hypotheses 1a and 2*.

The Effectiveness of Financial Incentive-based Approaches for Weight Loss

Lahiri and Faghri (2012) did a study on the cost effectiveness of an incentivized behavioral weight management program. The study was conducted at four nursing home facilities, and employees who were overweight or obese were voluntarily recruited for the study. One of the

major concerns with determining the effectiveness of worksite weight loss programs has been program adherence and participation. The goal of the study was to examine the use of monetary and non-monetary incentives for a motivationally enhanced behavioral education weight loss program. Lahiri and Faghri (2012) wanted to evaluate the cost-effectiveness of a Behavioral Weight Management Program for both incentivized and nonincentivized sites. An outcomes-based incentive strategy was used during a 16-week intervention with a 12-week follow-up period. Participants were paid \$10 per pound or pound and a half of weight loss depending on their weight. Participants could also deposit money into the Win Big plan (deposit contract), and depending on how much weight they lost the employer would then match each dollar deposited.

The results showed that there was a significant difference in the average per-participant weight change between the incentivized and nonincentivized sites. The incentivized participants lost on average 5.2 more pounds than the nonincentivized participants. However, the nonincentivized participants also had favorable weight loss results. Lahiri and Faghri (2012) point out that because participation was voluntary, individuals who were motivated to lose weight joined and adhered to the program. This type of intrinsic motivation appears to be in alignment with autonomy and competence as described in the Self-Determination Health Behavior Model. Overall the participants at the incentivized sites were appreciably more motivated. Based on the findings of the study *hypothesis 1a* is supported. Because this study was conducted over a 16-week period and further research is required, there is no way of knowing whether health behavior modification was sustained once the incentive was removed. Lahiri and Faghri's (2012) data findings on presenteeism showed that productivity levels had increased between 25% to 30% for the incentivized sites, and those who participated in the control group only had a 10% increase in productivity.

The results of Lahiri and Faghri's (2012) study were consistent with the four randomized controlled trials that Wall, Mhurchu, Blakely, Rodgers and Wilton (2006) reviewed to determine the effectiveness of monetary incentives in modifying dietary behavior. The goal of the incentives was either to reward the adoption or maintenance of a behavior outcome (contingency management), or "to facilitate the adoption of the desired behavior/outcome by reducing a financial barrier (e.g., farmers' market coupons, price discounts, or free food)" (Wall et al., 2006: 520). All behavioral intervention groups showed greater weight loss compared with the control group (no behavior intervention or incentives). Across all four studies there was a positive effect of monetary incentives on healthy eating or weight loss, however "the evidence in support of sustained positive effects is more tenuous" (Wall et al., 2006: 524). The key findings support *hypotheses 1a* and 2.

Volpp, Johns, Troxel, Norton, Fassbender and Loewenstein (2008) conducted a 16-week study using three randomized weight loss plans. Fifty-seven participants were randomly assigned to either a weight monitoring program involving monthly weigh-ins; or one of two incentive programs that consisted of the same weigh-ins plus a lottery incentive plan; or a deposit contract that allowed participant matching. The objective of the study was to determine "whether common decision errors identified by behavioral economists such as prospect theory, loss aversion, and regret could be used to design an effective weight loss intervention" (Volpp et al., 2008: 2631). The main outcomes of the study showed that about half the participants in both the lottery (52.6%) and deposit contract (47.4%) groups met the 16-pound target weight loss, whereas only 10.5% in the control group met the 16-pound target. The net weight loss between enrollment in the study, and at the end of the seven months was not statistically significant for the incentive groups than that of the control group. However, the incentive participants weighed significantly less at seven months than at the start of the study. Volpp et al. (2008) point

out that although the use of economic incentives produced significant weight loss during the sixteen week intervention period, it was not fully sustained once the incentives were no longer offered. The findings support *hypotheses 1a and 2*. The deposit contracts have a built in negative reinforcement component to them (punishment). Although the participants in this group did hit their target weight goals, they did not fully sustain them once the negative reinforcement was removed. This would appear to support *hypothesis 3*.

Financial Incentives for Extended Weight Loss.

John, Loewenstein, Troxel, Norton, Fassbender, and Volpp (2011) did a study to evaluate a longer-term weight loss intervention using financial incentives. The randomized control trial consisted of a 24-week weight loss phase followed by an 8-week maintenance phase. The trial involved two financial incentive plans that used deposit contracts with a dollar for dollar matching component. If the participants failed to meet the weight loss goals they would lose the money. Participants in one of the incentive plans were told that the period after twenty four weeks was for weight loss maintenance, and no distinction was made for the other group of participants. The results of the study showed that although there was significant weight loss over the eight month intervention, participants regained the weight following cessation of the financial incentives. The results support *hypotheses 1a and 2*. John et al. (2011) point out that the intervention was based on behavioral economics including over-optimism and loss aversion. Participants were overly optimistic with predicting their weight loss so they took advantage of the deposit contract incentives and put down money at the beginning of the month. Loss aversion was used to motivate weight loss, and staying consistent with the research showing that small rewards and punishments can have great incentive value, participants were given immediate feedback. Participants were not deterred from making monthly deposits even though they did not attain their weight loss goals. “This point attests to the utility in using decision

errors to help people to attain their goals” (John et al., 2011: 626). These results support *hypothesis 3* financial penalties.

MEASURING RETURN ON INVESTMENT

Measuring the impact of a health promotion program can be statistically complex and a difficult challenge for most employers. Experts agree that there is no one industry standard for calculating return on investment (ROI), but “hard ROI” and “soft ROI” are typically the two most common forms of measurement. Hard ROI measures savings in direct medical costs, and soft ROI looks at productivity gains from factors such as reduced absenteeism and employee retention (Tu & Mayrell, 2010). Benefits consultants advise companies implementing wellness programs to expect a loss on hard ROI in the first two years, possibly break even in the next year or two, “and begin to see reasonable returns in the fourth and fifth year” (Tu & Mayrell, 2010: 11). Some employers have unrealistic expectations about ROI, and should consider the return on investment timeline before embarking on any wellness initiative.

Baicker, Cutler, and Song (2010) conducted a meta-analysis of more than twenty peer-reviewed controlled studies on the cost and savings associated with wellness programs. They found that medical costs fall by about \$3.27 for every dollar spent on wellness programs, and absenteeism costs fall by about \$2.73 for every dollar spent. However, there were limitations with this review due to the underlying literature, and the design and methodology constraints inherent with most ROI studies. Bolnick, Millard and Dugas argue that even carefully reviewed studies can be influenced by limitations such as “limited and/or selective participation and completion rates of health risk assessments; lack of or not comparable control groups; a short study period that cannot capture long-term consequences of behavioral changes; and an inability to distinguish the direction of causal pathways (in particular, self-selection vs. program effects)” (2013: 4). Because most ROI studies generally only examine aggregate changes in

medical care costs, the primary focus is on short-term savings. As such, typically no analysis is done on how managing specific risk factors modify their consequent medical conditions, and related health care costs (Bolnick et al., 2013). Therefore, much confusion still remains about the effectiveness and potential achievements of wellness programs.

Disadvantages of Wellness Incentives

Although wellness incentive systems have many positive attributes, there are also some disadvantages associated with them. Identifying the right mix of incentive rewards that will “function as effective or salient inducements for behavior change” can be somewhat of a trial and error process (Hunnicuttt & Chapman, 2005: 21). Rewards can also produce some unintended artifacts and/or undesirable consequences. These are unforeseen by-products of the system and can be counter-productive to the actual purpose of the incentive (Hunnicuttt & Chapman, 2005). With some incentive schemes, a participant could gain a reward by undermining the rules and inadvertently be rewarded for unhealthy behaviors. For example, if a program was designed with a twelve week weight loss competition and no limit on weight loss per week, it could entice some individuals to use unhealthy and hazardous weight loss techniques such as starvation. Incentive programs that use a self-reporting mechanism without any verification process could increase the potential for participants to be dishonest about the activities they performed. Incentives also have the potential to create a dependency, meaning that once the reward is removed the desired behavior ceases. For instance, a reward for a one year gym membership may cause participants to cease their exercise programs once the membership expires. Some participants might try to outwit or “game” the incentive system. For example, beach towels given out as an incentive at the beginning of a wellness information session, could entice participants to show up for the reward and then leave once they receive it. In essence, they are being rewarded for performing a behavior without having to fully comply with the

requirements. Incentive systems must be designed with these potential pitfalls in mind, and continuously evaluated so that disadvantages can be minimized and cost effective advantages maximized.

Wellness Incentives – Evaluate Outcomes and Refine Strategies

An evaluation of wellness incentive features and related programs should be conducted at least once a year. When the behavioral goals of an incentive strategy are clearly defined, the evaluation process is much easier. Wellness experts advise using a set of specific metrics to consistently measure various aspects of the incentive’s performance on an annual basis. Also, in order to optimize the effectiveness of wellness programming, it is recommended that the economic return of incentive strategies’ be measured annually. Efficient record keeping and data play a crucial role in measuring and evaluating desired outcomes. This may include “participant satisfaction levels, participation patterns, risk factor prevalence, patterns of changes in individual health habits or clinical test results, achievement of program objectives or collection of anecdotal success stories, and change in key organizational economic indicators” (Hunnicuttt & Chapman, 2005: 31). Participant data is pivotal for making program adjustments on selected behavior change interventions and to refine incentive strategies. Additionally, return on investment is much easier to calculate when a company uses good record keeping practices.

LEGAL IMPLICATIONS: THE FAMILIAR AND THE OBSCURE

Wellness incentives add a whole new dimension to wellness programs, and with employers developing innovative ways to get their employees to change unhealthy behaviors, firms need to be aware of the legal constraints particularly when rewards and penalties are involved. Wellness compliance experts say that as companies become more focused on wellness programs to reduce costs, lawsuits filed by workers, regulators and unions are becoming more common. Some of the accusations include

discrimination; violation of benefit reporting requirements and tax obligations; violation of medical privacy; and breach of collective bargaining agreements (Dunning, 2012). Some of the more common compliance issues that employers fail to meet involve federal anti-discrimination statutes under the American with Disabilities Act (ADA,) and the Health Insurance Portability and Accountability Act (HIPAA). The ADA has rules for preventing companies from making medical inquiries or conducting exams that are not directly related to an employee’s job description (Dunning, 2012). Under the Equal Employment Opportunity Commission and ADA, requests for medical information such as biometric screening, health risk assessment, and blood tests, must be done on a voluntary basis. Employers need to be cognizant of how they are using medical data as it is illegal to use it for hiring and firing decisions. Experts suggest employers should limit the amount of information to “include only what is necessary to pay incentives or apply penalties to avoid even the appearance of taking an employment action based on the data” (Dunning, 2012: 6). Federal courts have differed on rulings concerning the extent to an employee’s right to privacy in matters related to medical information and wellness related requests.

Statutes Affecting Wellness Program Classifications

There are generally two types of wellness program classifications: (1) part of and/or a health plan; and (2) part of and/or a non-health plan. Different laws and regulations apply to both types and therefore must be carefully considered. Programs that would fall under the category of non-health plans may include, but are not limited to: health fairs (if employer does not provide payment for testing); referral service (e.g., EAP) without counseling; Weight Watchers; gym memberships; and health information sessions. Those that are considered health plans may include, but are not limited to: blood pressure testing; flu shots and other preventative care; cholesterol screening or similar types of blood tests; professional counseling; disease

management programs; and smoking cessation programs. Non-health plans typically fall under the Genetic Information Non-discrimination Act (GINA), Internal Revenue Code (IRC), and state laws. Wellness programs that offer incentives in the form of vacation days, cash payments, and health club membership reimbursement may be subject to applicable provisions and considered taxable compensation under the IRC. Those that are considered health plans have many more statutes that must be followed such as the Employee Retirement Income Security Act, HIPAA, COBRA, ESERRA, GINA, ADA, Title VII Pregnancy Discrimination Act, Age Discrimination in Employment Act, Cafeteria Plan Rules, and Health Savings Account eligibility rules.

Under HIPAA an employer cannot discriminate based on health status. As a “general rule a plan can’t charge different premiums or provide different benefits or barriers to coverage based on health status” (Chordas, 2011: 3). However some exceptions apply and are acceptable under HIPAA. An outcomes-based plan must meet specific criteria to be considered a bona fide wellness program. A reward based on satisfying a standard related to a health risk factor cannot exceed 20 percent of the total cost of the health coverage, and eligible individuals must be given the opportunity to participate and qualify for the reward at least once per year. Also, the reward must be available to all similarly situated individuals, and the program must allow for a reasonable alternative standard (or waiver of initial standard) for obtaining the reward when it is unreasonably difficult to obtain due to a medical condition, or medically inadvisable to satisfy the initial standard.

Wellness programs that limit or deny benefits to smokers may violate certain state laws that prohibit employment discrimination against smokers, including discrimination as to benefits (Kendall & Ventura, 2005). For instance, in North Carolina it is unlawful for an employer of three or more workers to discriminate against employees based on the use of lawful products (including tobacco) during nonworking hours outside the workplace. Experts suggest that the safest legal

option for employers is to have voluntary and education-based wellness programs. Employers may be able to limit compliance issues by hiring an outside firm to administer their wellness program; however “that may not totally eliminate their potential liability particularly if they self-fund their health insurance plan” (Dunning, 2012: 6). Using a subcontractor to manage a self-funded plan will not be enough to insulate firms from liability, and therefore they must actively monitor their business partners (Dunning, 2012).

Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act (PPACA) has an incentives component for wellness programs. Starting January 1, 2014 the new law will permit group health plans to give reductions up to 30 percent of the cost of premiums to employees who participate in a wellness program. The PPACA further increases the maximum reward to as much as 50 percent for programs designed to reduce or prevent tobacco use. However, wellness programs that offer wellness discounts must meet certain criteria to be eligible. The proposed rules are: (1) participatory and health-contingent wellness programs must be reasonably designed to promote health or prevent disease; (2) programs cannot be discriminatory (i.e. health status); (3) an individual must be given the opportunity to qualify for rewards at least once per year; and (4) reasonable alternative standards must be set for obtaining rewards. Small employers became eligible for federal grant monies to help launch wellness programs starting in 2011 (United States Department of Labor, 2013).

ETHICAL CONSIDERATIONS: STRIKING A BALANCE

What role should employers play in their employees' health? Should they serve as a facilitator rather than using authoritative means such as financial penalties to motivate health behavior change? Some employers are facing criticism from organized unions and other interest groups “who contend that workplace incentive programs, particularly penalty programs, are unethical” because it violates individual liberties

and discriminates against the unhealthy (Pearson & Lieber, 2009: 845). Workers' rights protection groups and some employees contend that penalty programs are being used to discriminate against sicker individuals to make them bear the burden of increased health care costs. Wellness incentive programs that use positive rewards “raise many of the same ethical concerns, but penalties heighten the potential for coercion and inequity” (Pearson & Lieber, 2009: 845). There are many, including medical experts, who feel that the goal should be to strike an ethical balance between holding employees accountable, and protecting their liberties. Ethical considerations are relevant to the use of incentives, and therefore several factors should be considered before using them. Blumenthal-Barby and Burroughs argue that consideration must be given to the following factors: “the amount of incentive offered, whether the incentive will disadvantage the people most in need, whether the incentive will result in the group that fails to meet the criteria for receipt being treated unfairly, whether the incentive will harm the patient-physician relationship, and whether the incentive is fairly directed” (2012: 2). When the amount of the incentive is too high, then the offer could be construed as coercion and interfere with an individual's ability to make an autonomous decision. At this point it becomes a “shove” rather than a “nudge.” Also, if a lesser incentive amount could have achieved the same effect, then resources are not being used efficiently. Typically, the employees who face the most significant barriers are of a lower socioeconomic status and the ones who have the most to gain from financial incentives. Employers have an ethical obligation to reduce the potential for unacceptable discrimination, and lower the barriers to healthy behaviors (Madison, Volpp, Halpern, 2011). Cost shifting is another concern especially when incentive programs are aimed at obesity and smoking. Arguably these conditions are not entirely under a person's control, and the ability to achieve desired results varies greatly. If some employees in these risk factor groups fail to attain the incentive and have to pay more for health care in part to subsidize the cost of the

incentive programs, then it would be unfair. Experts suggest setting different standards for the attainment of incentives based on the difficulty of individuals or groups in achieving it. The impact on the patient-physician relationship must also be considered. There is concern that physicians may be perceived as “police” and this may cause some individuals to withhold medical information. Measuring patient adherence should not be used as a surveillance tactic as this could jeopardize the relationship with the physician. Finally, discrimination concerns arise if incentive programs have the purpose or effect to discourage unhealthy job applicants, encourage unhealthy employees to leave an organization, or discourage unhealthy employees from taking advantage of company health benefit packages (Madison et al., 2011).

With the expansion of wellness incentives under the Affordable Care Act, there have been many in the medical community and some interests groups that have lobbied for the use of participation-based incentives over outcomes-based incentives. Schmidt, Asch, and Halpern (2012) did a study to draw a distinction between the fairness of incentives that targeted behavioral processes (participation) and those that targeted outcomes (achievement). They concluded that assessments of fairness should focus on “the extent to which an activity or outcome might be feasible and under an individual’s control, not on whether it targets a process or outcome” (Schmidt et al., 2012: S118).

CONCLUSION AND RECOMMENDATIONS

This paper explored whether the use of financial incentives and penalties can be effective for motivating participation in wellness programs and sustaining health behavior modification. I put forth several hypotheses to determine the effectiveness of wellness incentives and discussed some of the legal and ethical concerns associated with these types of economic-based interventions. Overall the results from the analysis support the hypotheses, but it is important to note that because the use of employer-based financial penalties is a relatively

new practice, there is very little empirical data available. As a way to compensate for this I reviewed and applied studies that incorporated the use of negative reinforcement mechanisms, particularly the use of deposit contracts, to test *hypothesis 3*. Based on behavioral economics and the theory of loss aversion, negative reinforcements act in the same way as penalties and typically trigger the same employee behaviors. The results from the studies do show a positive correlation between wellness incentives and program participation. However, the studies also revealed that once the incentives were removed the employees for the most part did not sustain their healthy behaviors. It has been shown that the use of incentives can be an effective component of employee engagement, but further research is needed to ascertain whether financial incentives and disincentives can produce sustainable health outcomes. Supportive environmental and organizational policies that help increase employee motivation, build skills, and enhance awareness can create a catalyst for individuals to adopt and maintain healthy behaviors.

Avoiding Potential Pitfalls with Wellness Incentives

Financial incentives can have a positive impact on participation rates, but in programs intended for long-term behavioral change, they should be used cautiously. The research on motivation “clearly establishes that a combination of extrinsic and intrinsic motivators is needed to optimally engage individuals in long-term behavior change, with the latter being essential to sustaining change” (Seaverson, Grossmeier, Miller, & Anderson, 2009: 343; Benabou & Tirole, 2003). However, when the financial incentive is significant, individuals tend to attribute their behavior changes to the extrinsic reward, which decreases the likelihood they will make the link intrinsically. Consequently, this lack of causal attribution will make it more difficult for them to sustain long-term behavior change (Seaverson et al., 2009). Additionally, if the employee perceives that the employer is trying to limit their freedom of choice with coercion, then “financial incentives

have the potential to create psychological reactance” (Seaverson et al., 2009: 343; Dowd, 2002). When this happens an individual may be more openly resistant to change, and have negative attitudes about the change agent (Seaverson et al., 2009).

Financial incentives need to be carefully evaluated and should be used in conjunction with alternative strategies that focus on increasing intrinsic motivation. Wellness incentives can be effective in the short-term, but the primary goal should be to move an individual from extrinsic motivation to that of intrinsic so that the incentives can eventually be phased out. As an individual moves through the various stages of the Transtheoretical Model, incentives can be used to nudge them from precontemplation into action. However, as the individual reaches the maintenance stage they should be at the point where they are internalizing these newly acquired health-related behaviors in order to sustain them. With the Self-Determination Health Behavior Model, autonomy, competence, and relatedness are core components for the internalization and integration process. The SDT model will be instrumental in helping the individual acquire the intrinsic motivation to maintain their healthy lifestyle changes long-term.

The field of health and wellness has evolved considerably over the past thirty years. With the passage of the Affordable Care Act and its expansion of wellness incentives, many more companies will be contemplating whether to implement these types of programs as a way to reduce health care costs. Based on the research, it appears as though the trend toward stricter standards and requirements will continue to grow and so will the controversy surrounding it. Ultimately employers must decide which incentive schemes and behavioral approach they will use, “carrots or sticks.”

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