IncentFit

Incentivizing Health:

Unlock the Power of Financial Rewards

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Incentivizing Health:

Unlock the Power of Financial Rewards

Embarking on the journey to enhance employee well-being, organizations very often grapple with persistent challenges that hinder active employee participation and long-term engagement in wellness programs. The paradox prevails—despite the universal desire for good health, the allure of immediate gratification often overrides their commitment to long-term well-being.

A wellness program is meant to cultivate the adoption and retention of healthy habits among an organization's employees. People desire good health and longevity. The steps to attaining and maintaining good health are generally understood and agreed upon at a base level.

Despite this, however, people are often swayed by their environments, habits, and circumstances to make choices that will give them a tangible, immediate reward, but may not be in their best long-term interest. Simply put, regular exercise and a healthy diet are objectively good for you, so why do so many people actively choose not to incorporate those behaviors into everyday life?

A comprehensive understanding of why people gravitate toward unhealthy behaviors in the first place can be helpful when structuring wellness programs that incline and empower people to make healthier choices for themselves.

This white paper aims to uncover effective strategies to address the challenges hindering employee participation and long-term engagement in wellness programs. We turn to a wealth of research drawn from some of the world's most esteemed academic and government sources to provide evidence-based solutions to guide organizations striving to enhance the well-being of their workforce.

HIGHLIGHTS

- Financial incentives are a **necessary** part of successful wellness programs.
- When applied strategically to wellness programs, real-time financial incentives are proven to be effective catalysts for **positive behavioral change**.
- Wellness program success hinges on the **intricate interplay** between key factors explored in this report. Join us on this deep dive to see what they are!

Our insights are not just theoretical; they are grounded in the practical realities of fostering engagement and positive behavioral change, supported by over a decade of hands-on experience working with hundreds of organizations to develop and manage successful wellness programs for thousands of employees.

The crux of this exploration lies in **financial incentives** as proven catalysts for positive behavior change.

Join us on this journey through the intricacies of employee engagement in wellness programs, as we explore the influence of behavioral economics on long-term rational choices, summarize the findings from dozens of the most respected research organizations and academic institutions, to demonstrate the transformative power of financial incentives—a tool that, when wielded strategically, empowers organizations to cultivate a workforce actively participating in the realization of better health.

The Role of Behavioral Economics in Irrational Decision Making

Behavioral economics breaks down the underlying psychology behind irrational decision making and why individuals may not always make choices that are in their best interest.

Complications arise when factoring in the reality that people are emotional beings who are influenced by the world around them, which often leads to irrational decision making.

Five Key Behavioral Economics Factors:

There are several notable concepts within behavioral economics that are potential obstacles in making consistent healthy choices:

- **Present bias:** the tendency to prioritize immediate gratification and rewards over future benefits, even when the long-term benefits may be more favorable
- **Anticipated regret**: the negative feeling that comes from contemplating a decision and expecting unfavorable consequences from potentially making the wrong choice
- **Default bias:** the tendency to maintain the status quo over actively making a change
- **Probability weighting:** the habit of over-weighting low probability events and under-weighting high probability events
- **Social pressure:** the impact by social norms, peer comparison, public image, etc...

In practical terms...

Let's suppose that "John Doe" wishes to cut back on and, ultimately, cease smoking. The rational choice theory states that he will pursue the necessary avenues to achieve this goal.

Rationally, John knows that smoking comes with guaranteed health risks that he does not want to subject himself to.

On the other hand...

Behavioral economics acknowledges that John will be influenced by factors such as emotions and stress, advertising that promotes smoking, the discomfort of nicotine withdrawal, and his social network.

Several obstacles are at play here:

John may decide to continue smoking despite its negative effects. The immediate gratification of present benefits appeals to him more than the long-term benefits of quitting.

Present Bias

He could be affected by anticipated regret because he may miss out on social rituals.

Anticipated Regret

He could feel social pressure from friends who smoke that breaks his commitment to quitting.

Social Pressure

He may have formed habits around smoking or been surrounded by it his entire life, so he defaults to this learned behavior.

Default Bias

Probability Weighting

Probability weighting could cause him to brush off the high risk of lung cancer.

Similarly, while the benefits of exercise and fitness are touted and widely recognized, without discipline or motivation, people will often take alternative, easier actions that result in **immediate rewards**. Ones they can see the benefits of in the present moment, rather than an abstract reward in the unforeseeable future.

RESEARCH STUDY: American Journal of Preventive Medicine

"In the case of exercise, the 'costs' are experienced in the present; whereas the benefits (e.g., health, a more attractive appearance) are delayed, resulting in notorious resolutions to 'exercise more tomorrow.'

"According to behavioral economics, increasing the immediately rewarding aspects of exercise (e.g., by offering financial incentives such as cash or vouchers) may increase people's propensity to exercise."

(Michelle, et. al., 2013)

Advertisers frequently leverage the concept of present bias as a marketing tool to promote their products. People are not always rational, but they are often predictable, which businesses can use to their benefit to anticipate and influence purchasing patterns. It's equally advantageous to keep these trends and tendencies of human behavior in mind when running a wellness program.

The following case study offers additional insights on why so many weight loss attempts fail:

CASE STUDY: "Specious Reward: A Behavioral Theory of Impulsiveness and Impulse Control"

"...the benefits of weight loss are not salient; foregone health and quality of life are not visible and, therefore, these opportunity costs may be underestimated.

"...while the discomfort of dieting and exercise is immediate, the benefits take longer to be realized, and the effectiveness of rewards declines as they are delayed from the time of choice."

(Ainslie, 1975)

Given the various behavioral obstacles in the mix, what stands out as the most potent external motivator to drive positive behavior?

It's a financial incentive.

What are Financial Incentives?

Financial incentives are monetary rewards that are provided by a company with the intention of increasing motivation among employees and guiding them toward certain behaviors.

According to the American Medical Association, most individuals are motivated by actions that produce "measurable, tangible benefits" versus ones that "do not produce tangible progress toward a goal." In other words, when it comes to healthy behaviors, the costs of time are tangible, whereas the benefits, such as reduced long-term health risks, are intangible and often delayed. Thus:

> *Losing weight is difficult because any single indulgence has no discernible effect on weight. The lack of motivation for actions with intangible benefits also helps explain poor adherence to treatments for disorders such as hypertension and hyperlipidemia, which show no tangible manifestation (i.e. are usually asymptomatic) for patients.*

(Loewenstein, et al., 2007)

The use of financial incentives has seen a surge in popularity over time, as companies come to recognize their effectiveness in motivating employees to prioritize their health. This, in turn, leads to reduced healthcare costs, decreased absenteeism, and a boost in employee mood and morale.

How do Financial Incentives work?

There are various financial incentive structures. Each of them is designed to achieve the same overall outcome, but employs different methods of getting there.

Three of the most common, and effective, design structures are:

- Loss Aversion
- Gain-framed Incentives
- Variable Reinforcement

1. Loss Aversion

Incentives are set up in a way that motivates people to avoid losing out on a desired or valuable reward/benefit. People are more likely to avoid loss than they are to pursue gains, as the loss is often perceived more severely than the gain. Decision isolation plays a key role:

> *People react so powerfully to small losses and gains, in part because they consider them in isolation and fail to integrate them psychologically with the often much larger fluctuations in income arising from work-earnings and investments.*
>
> (Volpp, et. al., 2008)

Studies on loss aversion incentives show that they have proven effective in altering behavior related to physical activity.

For instance, 281 adult employees participated in a 13-week randomized, controlled trial conducted at the University of Pennsylvania. The study surveyed whether gain-framed financial incentives, lottery incentives, and loss aversion financial incentives increased physical activity among participants by rewarding them for achieving a daily goal of 7,000 steps.

RESEARCH STUDY: Loss Aversion

- The gain incentive group was given $1.40 each day the goal was met.
- The loss incentive group was given $42 monthly and had $1.40 deducted each day the goal was not met.
- The results showed that the loss incentive group had "a 50% relative increase in the mean proportion of time participants achieved physical activity goals."
- Loss aversion incentives had a more significant impact on physical activity than either the control or gain-framed incentive groups.

(Patel, et al., 2016)

In this instance, loss aversion lended itself to greater success than other incentive structures.

2. Gain-framed Incentives

Alternatively, gain-framed incentives focus on the potential gain of engaging in a particular behavior, emphasizing the positive outcome of completing the goal.

With the use of pedometers, a randomized controlled study was conducted in Raleigh-Durham, North Carolina over the course of four weeks surveying 51 participants all over the age of 50.

A fixed amount of $75 was given to the control group. While a fixed amount of $50 was given to the intervention group, there was also the possibility of earning up to an additional $25 per week depending on how many weekly aerobic minutes were recorded by their pedometers.

RESEARCH STUDY:
Gain-framed Incentives

- The potential gain of an additional $25 showed an increase in engagement for the intervention group.
- On average, the control group logged 2.3 hours per week, while the intervention group averaged 4.1 hours per week.

The potential gain caused an increase in aerobic activity and was particularly effective in this study. (Finklestein, et al., 2008)

3. Variable Reinforcement

This type of incentive involves offering rewards at unpredictable intervals for certain behaviors. It can be used in a plethora of ways, including:

- **Wellness Challenges:** Rewards can be administered unpredictably when health goals are met or for surpassing fellow participants, leading to consistent engagement throughout the competition.
- **Health Apps:** Apps that support physical health, mental health, diet, etc., often give users rewards and badges for completing activities in varying intervals to encourage them.

When positive reinforcement via feedback or rewards is given in intermittent, fluctuating periods, it has the potential to inspire persistent engagement in the desired behavior.

Types of Financial Incentives

There are many forms of financial incentives available which can support the budget, culture and structure of almost any organization:

Direct deposits or HSA/HRA contributions

Gift cards, discounts, or certificates to retailers

Reduced healthcare costs or premiums for completing preventative health activities

Health-promoting prizes, such as Fitbits, Apple Watches, etc.

Deposit on committing to a goal. Employees can earn or lose money depending on whether they meet that goal.

All employees are entered to win a prize, but only those who meet certain criteria can remain in the final drawing.

Having an array of options is valuable, as companies are able to choose what works best for the internal framework of their systems and employees. Distributing gift cards may be easiest and most engaging for one company, while another may benefit more from HSA deposits.

Financial Incentives & Wellness Programs

Reception

How wellness programs are perceived affects their success. To that end, a key element to consider is acceptability.

Acceptability refers to the perception among stakeholders that a given intervention or program is agreeable, palatable, or satisfactory. When it comes to health-promoting financial incentives (HPFI), acceptability is a critical dimension influencing the overall effectiveness of these programs.

> *The available evidence suggests that HPFI are acceptable when they are considered effective and cost-effective; if they provide benefits to individual recipients and wider society; when they are considered fair, and when they are delivered to individuals who are deemed acceptable recipients.*
>
> (Giles, et al., 2015)

Understanding the concept of acceptability is paramount in assessing the success of wellness programs, particularly those incorporating financial incentives.

The evidence presented in our systematic review suggests that HPFI is considered acceptable under certain conditions:

- **Effectiveness and Cost-Effectiveness**: when financial incentives are perceived as effective and cost-effective in driving behavior change.
- **Individual and Societal Benefits**: when they provide tangible benefits to both individuals and the broader society, creating a win-win scenario.
- **Fairness**: when individuals perceive the distribution of incentives as fair, it enhances their acceptability.
- **Targeting Acceptable Recipients**: when incentives are directed toward the most suitable recipients. The greater the suitability, the more likely the program will be positively received and embraced. The acceptability of HPFI is crucial, and delivering it to the right recipients enhances its effectiveness.

In the broader landscape of behavioral change research, understanding and optimizing the acceptability of financial incentives in wellness programs emerge as essential considerations. As we advocate for the integration of financial incentives, recognizing and addressing factors that enhance acceptability becomes a strategic imperative in fostering positive health outcomes and sustained behavior change.

Efficacy

In the realm of wellness programs, the effectiveness of financial incentives has been a subject of extensive exploration, with numerous studies employing diverse experimental architectures conducted by some of the most esteemed and influential academic and government institutions.

Behavioral Change Research encompasses a diverse range of studies conducted by esteemed academic institutions and nonprofit research entities. This field is driven by the academic prowess of institutions like the Department of

Social and Decision Sciences at Carnegie Mellon University and the Center in Behavioral Economics and Health at the University of Pennsylvania.

Key contributors to the funding landscape of these studies include government agencies such as the National Institute of Health, the Center for Disease Control, and various Health and Human Services departments, including the National Center for Advancing Translational Science.

Internationally, non-US research and academic institutions, such as The National Institute for Health Research in England and the Research Council of Norway, also play a vital role in advancing behavioral change research.

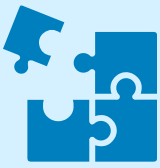
In addition to public funding, private sector sponsorship is present, with companies like CVS, Weight Watchers, and insurance giants such as Oscar Insurance and UnitedHealthcare occasionally backing studies.

However, it is crucial to emphasize that our analysis intentionally excludes studies sponsored by private companies, underscoring our commitment to prioritizing the credibility and objectivity of our findings. This focus remains solely on studies from reputable academic and research institutions.

With that in mind, below are the most common types of behavioral studies that address wellness and financial incentives.

The Most Common Types of Behavioral Studies

Randomized Controlled Trials (RCTs): Rigorous experiments assessing the impact of financial incentives on behavior change. Often considered the 'Gold Standard' of research types among the most respected academic institutions.



Synthesis Studies: Comprehensive reviews and analyses of multiple studies to identify patterns and trends. Summarizing the key findings across a broad spectrum of studies in order to ascertain the most compelling data.

Field Experiments: Investigations into 'what actually happened' in real-world cases, e.g. data from health insurance claims or other practical settings. While these studies are often less structured than RCTs, they tend to cover more data.

Academic Research: Rigorous and peer-reviewed research by experienced behavioral scientists, published in esteemed scientific or academic journals contributing to the overall understanding of acceptability, efficacy, and incentive structures.

Key Aspects of Wellness Programs

Adressed by our comprehensive review of the most popular synthesis studies:

Financial Incentive Structure/Design: Analyzing the architecture of financial incentives to discern patterns in their impact on behavior change.

Increasing and Maintaining Physical Activity: Evaluating the role of financial incentives in both initiating and sustaining physical activity levels.

Weight Loss Goals: Investigating the effectiveness of financial incentives in achieving and maintaining weight loss objectives.

Preventative Care: Assessing the impact of financial incentives on adherence to preventive care measures.

Gym Attendance: Exploring how financial incentives influence attendance and engagement in gym activities.

Use of Fitness Trackers/Pedometers: Examining the integration of financial incentives with technology, specifically in the context of fitness trackers and pedometers.

Smoking Cessation: Investigating the role of financial incentives in promoting and sustaining smoking cessation efforts.

OUR METHODOLOGY

To ensure a thorough understanding of the broader landscape, the IncentFit team placed a particular focus on **Synthesis Studies**.*

These studies, which collate and analyze data from various sources, offer a comprehensive overview distilling insights from a multitude of experiments that encompassed a substantial sample size drawn from 438 studies, including both randomized controlled trials and field experiments.

**see Addendum for details on each study*

The synthesis studies were particularly instrumental in uncovering trends and patterns across the diverse landscape of wellness programs.

By aggregating findings from a multitude of experiments conducted by the likes of the University of Pennsylvania, these studies contribute to a nuanced understanding of when and how financial incentives are most effective in promoting positive health behaviors.

SYNTHESIS STUDY HIGHLIGHTS

The Effectiveness of Financial Incentives in Promoting Positive Health Behaviors

Financial incentive interventions are more effective than usual care or no intervention for motivating healthy changes to behavior.

Financial incentives have **no detrimental effect** on an employee base, even with small incentives.

Financial incentives designed **using concepts from behavioral economics** are effective for promoting healthy behavior changes. Further analysis of incentive structure implies a connection between the effectiveness of financial incentives, incentive design, and factors such as income or race.

Breastfeeding, adherence to medication, smoking cessation, and vaccination tend to be **more difficult targets of incentivization** than physical activity, weight loss, and self-management.

When using monetary incentives, previously **sedentary adults have responded favorably** in initiating physical activity and maintaining it throughout the program.

Financial incentives have shown to be **acceptable** when they are both effective and cost-effective.

A wellness program that benefits participants and society as a whole and is perceived to be fair sees the most success in acceptability.

RESULTS

In short, the commonalities found among these studies demonstrate that monetary incentives do indeed show favorable results, with incentive design and wellness program structure being a major catalyst in levels of effectiveness.

Financial Incentives & Wellness Programs (cont'd)

Applying the concepts of behavioral economics has seen consistent positive outcomes, and success has been particularly potent in incentivizing weight loss and physical activity.

Simple programs tend to get more engagement; therefore, certain behaviors are more difficult to incentivize than others and shouldn't necessarily be treated equally. An incentive for weight loss that procures positive results may not be as successful in promoting smoking cessation, for example, and may require a different design.

> *Our recent systematic review of the effectiveness of HPFI (health promoting financial incentives) found that financial incentives were around 1.5 to 2.5 times more effective for promoting healthy behaviors than no intervention or usual care.*
>
> (Giles, et al., 2015)

That being said, studies have also shown that wellness programs with financial incentives **could still perform poorly** and have low engagement rates. When this occurs, they tend to have the following issues in common:

Common Issues

with low-performing wellness programs

There is **not enough** of an incentive

People are **unaware** of the incentive or program

The program is not **easy to use**

What can be done to address these issues? The **EAST framework** can be applied to wellness programs to help counter some of the issues that cause low engagement by making those habits more appealing, convenient, and rewarding.

What is the EAST Framework?

Minimize the effort required to engage in healthier habits
e.g. *wellness apps that automatically track and credit activities*

Make activities visually and emotionally appealing
e.g. *motivational challenges with visually attractive graphics, posters, etc.*

Promote a sense of community and accountability
e.g. *team challenges and community-based activities*

Present incentives & reminders with intentional timing to encourage desired behavior
e.g. *offer incentives for flu shots during flu season*

Employees have been shown to enjoy programs that are exactly that: simple, appealing, communal, and relevant.

> *Drawing on extensive experience working with hundreds of organizations and thousands of their employees for over a decade, the IncentFit team of wellness program experts have seen first-hand the enduring impact of real-time financial incentives in motivating participants and ensuring overall program success.*

Key Takeaways

In conclusion, the implementation of **real-time financial incentives** stands out as a crucial and powerful component within successful wellness programs.

The desire for improved health is inherent, yet translating this aspiration into tangible, sustainable changes demands a nuanced approach. Real-time financial incentives play a pivotal role in not only motivating individuals but also in fostering a positive and lasting impact on their well-being.

The multifaceted nature of wellness program success hinges on the intricate interplay between acceptability, effectiveness, and thoughtful program design.

Acceptability, as illuminated by the systematic review by Giles et al., emerges as a linchpin factor. It is intricately linked to the perceived effectiveness and cost-effectiveness of financial incentives, the delivery of individual and societal benefits, the fairness of incentive distribution, and the strategic targeting of acceptable recipients. These considerations contribute to the overall success of wellness initiatives, driving participant engagement, adherence, and sustained behavior change.

Delving into the **efficacy of financial incentives**, our analysis of synthesized studies offers a comprehensive view of their impact across diverse wellness domains. From physical activity and weight loss to preventative care, gym attendance, and smoking cessation, financial incentives exhibit higher degrees of success. The synthesis studies shed light on the importance of **incentive structure and design**, the nuanced approach required for different health objectives, and the integration of technology to enhance engagement.

While the evidence suggests that financial incentives, particularly those rooted in behavioral economics, are generally effective for promoting healthy behavior changes, the success of a wellness program is contingent on more than just the presence of incentives. The landscape is nuanced, with certain behaviors proving more challenging to incentivize than others. The

intricate dance between program simplicity, appeal, communal aspects, and relevance surfaces as a key determinant of engagement.

In addressing potential pitfalls encountered by wellness programs, it becomes evident that the insufficiency of incentives, lack of awareness, and issues related to program usage are common culprits for low engagement rates. The EAST framework demonstrates an effective strategic guide, emphasizing the importance of making healthier habits **easy, attractive, social, and timely.**

That being said, the research clearly shows that even if a program is designed to be simple and informative but still lacks some sort of immediate financial incentive or reward it will still struggle to achieve high employee engagement.

Drawing on extensive experience working with hundreds of organizations and thousands of their employees for over a decade, the IncentFit team of wellness program experts have seen first-hand the enduring impact of real-time financial incentives in motivating participants and ensuring overall program success. The affirmation that these incentives serve as effective motivators aligns with the broader body of research, reinforcing their status as a corner stone in empowering employees and prioritizing their health.

In essence, the journey toward a healthier, more engaged workforce necessitates a thoughtful integration of real-time financial incentives within wellness programs. This journey is guided not only by the desire for health, but by a nuanced understanding of human behavior, program dynamics, and the strategic application of behavioral economics. As the workplace landscape continues to evolve, **financial incentives remain indispensable tools** in fostering a culture of well-being, ensuring that employees not only desire health but actively participate in its realization.

About IncentFit

For over a decade, IncentFit has pioneered health and wellness benefits for hundreds of organizations and thousands of their employees. The company's unique incentive-driven programs consistently generate heightened participation, contributing to the overall success of clients' wellness initiatives. Whether it's boosting employee morale, improving retention rates, increasing productivity, reducing healthcare costs, or cultivating a healthier and happier workforce, IncentFit delivers tangible results. For more information, please visit **www.IncentFit.com/**.

Addendum

This table summarizes key studies in our comprehensive review.

Synthesis Study Name	Author(s)	Date	Summary	Results
A systematic review of gamification in e-Health	Lamayae Sardi, et al.	1 Jul 2017	A systematic literature review conducted across 46 studies to explore the various gamification strategies employed in e-Health.	Gamification in e-Health has grown in popularity, but has only resulted in short-term engagement.
Acceptability of financial incentives for health-related behavior change: An updated systematic review	Katelin Hoskins, et al.	28 Jun 2019	A study conducted across 47 empirical and scholarly papers to identify what is known about financial incentives and behavioral change regarding health, analyze the acceptability of these incentives, and acknowledge what has proven acceptable and what has not.	Physical activity and weight loss are easier to incentivize. Rewards are more effective than penalties, vouchers more effective than cash, smaller values more effective than larger, and particular rewards more effective than lotteries.
Economic incentives for preventive care	RJ Town, et al.	2005	A review across 56 studies investigating how “preventive care" and "economic incentive" have been defined in the literature, and whether or not incentives work.	System-level economic incentives have shown the potential to change the larger health care environment, which causes individuals to adapt to this new environment. Provider incentives show positive results, although they may not promote long-term change.
Financial incentives for decreasing and preventing obesity in workers	Keikha M, et al.	1 Jul 2021	A study evaluating the effectiveness of financial incentives in decreasing and preventing obesity in employees.	Results pending.
Effectiveness of monetary incentives in modifying dietary behavior: a review of randomized, controlled trials	Joanne Wall, et al.	1 Dec 2006	A review conducted across 4 randomized controlled trials to research the effectiveness of financial incentives in modifying dietary behavior.	Financial incentives showed promise in encouraging dietary change. Further research is needed to address gaps in evidence. Larger, long-term randomized controlled trials that survey populations who are at high risk of nutrition-related diseases would aid in closing those gaps.
Financial incentives for exercise adherence in adults	Marc S. Mitchell, et al.	1 Nov 2013	A systematic review and meta-analysis across 11 studies analyzing the effectiveness of financial incentives for exercise initiation and maintenance in adults.	Financial incentives greatly increased exercise in those surveyed, with previously sedentary adults responding favorably to incentives in the short-term (6 months or less).
Incentive-based interventions for increasing physical activity and fitness	O'Malley GC et al.	18 Jan 2012	Determining the effectiveness of incentive-based approaches (financial and non-financial) to increase physical activity in community-dwelling children and adults.	Results pending.

Addendum

(continued from p. 15)

Synthesis Study Name	Author(s)	Date	Summary	Results
How do financial incentives compare with usual care or less intensive interventions for helping women stop smoking during pregnancy?	Nkengafac Villyen Motaze	16 Oct 2017	A study analyzing whether financial incentives aided in smoking cessation during pregnancy.	Compared to less intensive interventions, more women abstained from smoking in late pregnancy (on average, 304 vs 83 per 1000 women) and at 0 to 5 months postpartum (on average, 214 vs 59 per 1000 women) when financial incentives were included as part of multiple interventions.
The role of behavioral economic incentive design and demographic characteristics in financial incentive-based approaches to changing health behaviors: a meta-analysis	Nancy Haff, MD, et al.	1 May 2015	Meta-analysis of 7 studies evaluating use of behavioral economics to design financial incentives to promote healthy behavior change and to investigate the connection to demographic characteristics.	Financial incentives designed using behavioral economics concepts were effective for promoting health behavior change. Implication: there is a relationship between the financial incentive effectiveness, incentive structure, and demographic characteristics.
What are the effects of financial incentives for providers and recipients of healthcare?	Jane Burch, et al.	10 Sept 2020	Assessed the effects of financial incentives for providers and recipients of health care.	Due to the potential risk of bias/quality of studies, conclusions were difficult to reach. Varying results were shown.
Workplace interventions for smoking cessation	Cahill K, et al.	26 Feb 2014	A review of 57 studies to categorize workplace interventions for smoking cessation tested in controlled studies, determine whether they assist employees with quitting, and to evaluate cost and cost-effectiveness of workplace interventions.	People utilizing these interventions had a higher chance of quitting, the absolute numbers who quit are low.
Acceptability of financial incentives for encouraging uptake of healthy behaviors: A critical review using systematic methods	Emma L. Giles, et al.	1 Apr 2015	A critical review of 81 papers exploring the acceptability of financial incentives for encouraging healthy behaviors.	Financial incentives tend to be acceptable to the public when they are effective and cost-effective. Programs that benefit recipients and wider society and are considered fair are seen as the most acceptable.
Incentives for smoking cessation	Notley C, et al.	17 Jul 2019	A review of 33 studies to determine the long-term effect of incentives and contingency management programs for smoking cessation.	Overall there is high-certainty evidence that incentives improve smoking cessation rates at long-term follow-up in mixed population studies. The effectiveness of incentives appears to be sustained even when the last follow-up occurs after the withdrawal of incentives.

Addendum

(continued from p. 16)

Synthesis Study Name	Author(s)	Date	Summary	Results
Paying the Patient: Improving Health Using Financial Incentives	Karen Jochelson	1 Dec 2007	A study across 41 papers investigating what interventions are effective in encouraging healthy behavior and how the NHS can help people become healthier.	Financial incentives are effective when the required behavior is simple and time limited. On the other hand, they were less effective when complex behavior change was required.
The effectiveness of financial incentives for COVID-19 vaccination: A systematic review	Gabriela K. Khazanov, et al.	1 Jul 2023	A systematic review of 38 studies that analyzed the effectiveness of incentives for COVID-19 vaccinations, with various study designs and incentive types.	Political views and income affected the response to incentives, and that financial incentives are likely to increase COVID-19 vaccinations.
The effectiveness of financial incentives for health hehaviour change: Systematic review and meta-analysis	Emma L. Giles, et al. - PLoS ONE	11 Mar 2014	A systematic review of 17 studies that investigated financial incentive effectiveness in motivating healthy behavior change.	The results concluded that financial incentives are more effective in encouraging behavioral change than usual care or no intervention.

Citations

Burch, J., & Bhat, S. (2020). "What are the effects of financial incentives for providers and recipients of Health Care?" *Cochrane Clinical Answers*. https://doi.org/10.1002/cca.3069

Cahill, K., & Lancaster, T. (2014). "Workplace interventions for Smoking Cessation." *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.cd003440.pub4

Finkelstein, E. A., Brown, D. S., Brown, D. R., & Buchner, D. M. (2008). "A randomized study of financial incentives to increase physical activity among sedentary older adults." *Preventive Medicine*, 47(2), 182–187. https://doi.org/10.1016/j.ypmed.2008.05.002

Giles, E. L., Robalino, S., Sniehotta, F. F., Adams, J., & McColl, E. (2015). "Acceptability of financial incentives for encouraging uptake of healthy behaviors: A critical review using systematic methods." *Preventive Medicine*, 73, 145–158. https://doi.org/10.1016/j.ypmed.2014.12.029

Giles, E. L., Robalino, S., McColl, E., Sniehotta, F. F., &; Adams, J. (2014). "The effectiveness of financial incentives for Health Behaviour Change: Systematic review and meta-analysis." *PLoS ONE*, 9(3). https://doi.org/10.1371/journal.pone.0090347

Haff, N., Patel, M. S., Lim, R., Zhu, J., Troxel, A. B., Asch, D. A., &; Volpp, K. G. (2015). "The role of behavioral economic incentive design and demographic characteristics in financial incentive-based approaches to changing health behaviors: A meta-analysis." *American Journal of Health Promotion*, 29(5), 314–323. https://doi.org/10.4278/ajhp.140714-lit-333

Hoskins, K., Ulrich, C. M., Shinnick, J., & Buttenheim, A. M. (2019). "Acceptability of financial incentives for health-related behavior change: An updated systematic review." *Preventive Medicine*, 126, 105762. https://doi.org/10.1016/j.ypmed.2019.105762

Huang, M., Li, Z., & Su, X. (2022). "Anticipated regret, entrepreneurial cognition, and entrepreneurial persistence." *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.788694

Keikha, M., Jahanfar, S., Christie, J., Abedi, P., Danowski, M., Yoneoka, D., & Ebrahimi, M. H. (2021). "Financial incentives for decreasing and preventing obesity in workers." *Cochrane Database of Systematic Reviews*, 2021(7). https://doi.org/10.1002/14651858.cd014576

Khazanov, G. K., Stewart, R., Pieri, M. F., Huang, C., Robertson, C. T., Schaefer, K. A., Ko, H., & Fishman, J. (2023). "The effectiveness of financial incentives for covid-19 vaccination: A systematic review." *Preventive Medicine*, 172, 107538. https://doi.org/10.1016/j.ypmed.2023.107538

Loewenstein, G., Brennan, T., & Volpp, K. G. (2007). "Asymmetric paternalism to improve health behaviors." *The Journal of the American Medical Association*, 298(20), 2415. https://doi.org/10.1001/jama.298.20.2415

Mitchell, M. S., Goodman, J. M., Alter, D. A., John, L. K., Oh, P. I., Pakosh, M. T., & Faulkner, G. E. (2013). "Financial incentives for exercise adherence in adults." *American Journal of Preventive Medicine*, 45(5), 658–667. https://doi.org/10.1016/j.amepre.2013.06.017

Motaze, Nkengafac Villyen (2017). "How do financial incentives compare with usual care or less intensive interventions for helping women stop smoking during pregnancy?" *Cochrane Clinical Answers*. https://doi.org/10.1002/cca.1733

Notley, C., Gentry, S., Livingstone-Banks, J., Bauld, L., Perera, R., & Hartmann-Boyce, J. (2019). "Incentives for smoking cessation." *Cochrane Database of Systematic Reviews*, 2019(7). https://doi.org/10.1002/14651858.cd004307.pub6

O'Malley, G. C., Baker, P. R., Francis, D. P., Perry, I. J., & Foster, C. (2012). "Incentive-based interventions for increasing physical activity and fitness." *Cochrane Database of Systematic Reviews*, 2022(12). https://doi.org/10.1002/14651858.cd009598

Patel MS, Asch DA, Rosin R, et al. "Framing Financial Incentives to Increase Physical Activity Among Overweight and Obese Adults: A Randomized, Controlled Trial." *Ann Intern Med*. 2016;164(6):385-394. doi:10.7326/M15-1635

Paying the patient - The King's Fund. (n.d.). https://www.kingsfund.org.uk/sites/default/files/field/field_document/paying-the-patient-kicking-bad-habits-supporting-paper-karen-jochelson.pdf

Sardi, L., Idri, A., & Fernández-Alemán, J. L. (2017). "A systematic review of gamification in e-health." *Journal of Biomedical Informatics*, 71, 31–48. https://doi.org/10.1016/j.jbi.2017.05.011

Town, R., Kane, R., Johnson, P., & Butler, M. (2005). "Economic incentives and physicians' delivery of preventive care." *American Journal of Preventive Medicine*, 28(2), 234–240. https://doi.org/10.1016/j.amepre.2004.10.013

Volpp, K. G., John, L. K., Troxel, A. B., Norton, L., Fassbender, J., & Loewenstein, G. (2008). "Financial incentive–based approaches for weight loss." *JAMA*, 300(22), 2631. https://doi.org/10.1001/jama.2008.804

Wall, J., Mhurchu, C. N., Blakely, T., Rodgers, A., & Wilton, J. (2006). "Effectiveness of monetary incentives in modifying dietary behavior: A review of randomized, controlled trials." *Nutrition Reviews*, 64(12), 518–531. https://doi.org/10.1111/j.1753-4887.2006.tb00185.x

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