MOBILE AND ONLINE TECHNOLOGY: BRIDGING THE GAP TO LASTING BEHAVIOR CHANGE.

by Dr. Robert Grant

Abstract

This whitepaper examines the potential of using mobile and online technologies as part of a workplace wellness program in order to achieve lasting changes in health-related behavior. Getting employees engaged in workplace wellness plans has the potential to lead to significant savings for employers. However, engaging employees in wellness plans and helping them make lasting changes to their health-related behaviors is a notoriously difficult thing to achieve. Recent research has shown that simply communicating unbiased information to employees, while important, is not sufficient to create the kind of changes in behavior that are needed. This white paper suggests mobile and online technology can be used as a part of a wellness program to help bridge this gap to lasting behavior change. It can do this by making the process of getting healthy simple, social and fun. Ultimately, mobile and online technology can make it easy and enjoyable for people to consistently make healthy choices. This leads to increased engagement in wellness programs, which is necessary in order to create meaningful and sustainable change in behavior.

Overview

The value of workplace health and wellness programs is becoming increasingly apparent to employers. The epidemic-levels of obesity and related conditions (diabetes, hypertension, stroke, etc.) are driving up health care costs, while also resulting in substantial losses due to increased absenteeism and low-productivity[1]. According to *Gallup-Healthways Well-Being Index*, it is estimated that full-time workers in the U.S. who are overweight or obese, and have other chronic health conditions, miss an estimated 450 million additional days of work each year compared with healthy workers. This results in an estimated cost of more than $153 billion annually. The U.S is not alone however as obesity rates across the globe are reaching unprecedented levels[2].

Yet, this lost revenue is preventable. Obesity and related chronic diseases of lifestyle are caused in large part by unhealthy behaviors: bad eating habits, sedentary lifestyle, lack of exercise, etc[3]. Getting employees to change these behaviors and replace them with healthy ones could result in significant savings. However, motivating long-lasting behavior change is a notoriously difficult thing to achieve[4].

'OVERWEIGHT, OR UNHEALTHY EMPLOYEES COST

$153 BILLION

EVERY YEAR, IN THE UNITED STATES ALONE... YET, THIS LOSS OF REVENUE IS PREVENTABLE'.

Many traditional approaches to public health-based initiatives and workplace wellness programs have attempted to achieve this behavior change mainly through the communication of health-related information, for example: significant health risks to employees, foods to avoid, or helpful exercise programs. The

idea here was that if employees understand this information, then they should agree that it is in their best interests to act on it, and behave accordingly. They should simply start making healthier choices based on the knowledge that such choices will benefit them:

"EVEN WHEN PRESENTED WITH CLEAR, UNBIASED INFORMATION, PEOPLE OFTEN FAIL TO ACT ON THIS INFORMATION WHEN MAKING HEALTH-RELATED DECISIONS"

longer life expectancy, less risk of disease and illness, more energy, feel better and so on. On this approach, people are assumed to be "rational actors" and are expected to behave in ways that maximise personal benefits[5].

However, recent research in the fields of *Behavioral Economics* and *Behavioral Psychology* suggests that this approach is flawed when it comes to predicting certain complex human behaviors[6]. Even when presented with clear, unbiased information, people often fail to act on this information when making health-related decisions[7]. For example, billions of dollars are spent every year on health-based initiatives, awareness campaigns, and the distribution of health-oriented information, yet obesity, heart-disease and diabetes remain on the rise[8]. Similarly, most smokers are aware of the hazards associated with cigarette smoking, yet continue this behavior.

It is becoming clear, in terms of workplace wellness programs, that simply communicating objective information to employees is not enough: "Knowledge is a necessary, but usually not sufficient factor in changing individual or collective behavior"[9].

"KNOWLEDGE IS A NECESSARY, BUT USUALLY NOT SUFFICIENT FACTOR IN CHANGING INDIVIDUAL OR COLLECTIVE BEHAVIOR"

Information alone is not enough

In part, this is due to the fact that our health-habits are to a large extent dictated by the environment in which we live[10]. We live in a culture that makes it extremely *easy* and *convenient* for us to make unhealthy choices. It has been proven that when overwhelmed with choice and information – as is the case when it comes to what people should eat – people often sacrifice thoroughness in favor of convenience[11]. Rather than go through the complicated process of weighing up the costs and benefits of every health-related decision, people will often go for the option that is most convenient.

In the USA and Western Europe this means we often choose processed foods, salty snacks and sugary drinks. These types of food and drink are cheap, easily accessible and persistently advertised everywhere we look. Such an environment makes it difficult to consistently avoid unhealthy choices.

As well as environmental factors, there are psychological factors that influence our health behavior. That is, unhealthy choices offer individuals a level of *instant-gratification*: a feeling of immediate pleasure gained from eating certain foods. This is the case even if an individual would later come to regret this decision[12]. For example, someone may decide to eat a chocolate bar just because they happen to walk past a vending machine in their office and experience a strong urge for instant gratification. Yet, often they will come to regret this and had the vending machine not been there, they would not have even considered walking to the shop to make such a choice.

Furthermore, the vast majority of workplace environments are characterized by their passive and sedentary nature. Less than 20% of jobs in America require a minimum of moderately intense physical activity[13]. The infrastructure of daily life (better transport facilities, lifts in all buildings, prevalence of desk-jobs) signifi-

cantly reduces the opportunity for people to engage in physical activity unless they purposely set out to do so.

When taken together, these factors show that even when people have the requisite knowledge, they do not always act on this knowledge to make healthy choices. The ease and convenience of unhealthy lifestyles can be a more powerful influence on behavior than objective information.

However, there is reason to believe that use of mobile and online technology as part of an overall wellness program offers a way to respond to these behavioral factors, and hence, increase the likelihood of a wellness program successfully facilitating sustainable changes in health-related behavior.

In brief, incorporating such technology into a wellness program would allow employees to use their mobile and/or online devices to enter or log-in their health related behaviors each day. This would allow them to track their progress over time and also compare their achievements with their colleagues, thus creating a virtual-community or "social-network" based around health-promotion. Use of this technology would also allow employees to receive targeted, personalised feedback based on the health behavior data the log in.

LESS THAN 20%

OF JOBS IN AMERICA REQUIRE A MINIMUM OF MODERATE PHYSICAL ACTIVITY

Incorporating technology in this way has the potential to make the process of getting healthy *simple, fun* and *rewarding*, along with offering a network of support and motivation. These factors can help create the kind of sustainable behavior change that is required for a successful wellness program.

How can mobile and online technology facilitate behavior change leading to healthier lifestyles for employees?

1   Make it simple and easy to make healthy choices.

Mobile and online technology can be used to deliver simple, clear and actionable advice to employees that can help *ease the transition* towards healthy behavior change. This can help employees avoid becoming overwhelmed with health-based information, or complicated calorie counting regimes which often result in failed attempts to change behavior. Recent research by Behavioral Psychologist B.J. Fogg at Stanford University suggests that people respond much better when presented with simple, practical steps rather than being overloaded with information that focuses on the long-term results[14].

"THE FOCUS OF COMPANY WELLNESS PROGRAMS NEEDS TO BE SHIFTED ONTO

STEP-BY-STEP SOLUTIONS

THAT, WHEN TAKEN TOGETHER, LEAD TOWARDS LONG LASTING CHANGE".

His findings maintain that in order to create sustainable behavior change it is necessary to approach the transition in a *step-by-step* manner. He found that often times those who develop worksite wellness programs underestimate the steps that are necessary to make this transition from years of deeply embedded unhealthy habits towards a more healthy lifestyle. In this way, many traditional programs ask people to do things they simply cannot do. They are often based around goals such as "Eat better", "Be healthy", or "Lose weight". The problem is that these goals are abstrac-

tions, not *behaviors* that can be changed[15] and can seem overwhelming when faced with the convenience of less-healthy choices. Hence, the focus of wellness programs needs to be shifted onto step-by-step solutions that, when taken together, lead towards long lasting change.

Mobile and online technology can help provide these step-by-step solutions by delivering clear and simple messages that call for reasonable, actionable steps. For example, it is much easier for someone to act on a message like "remember to walk for at least ten minutes today!" or "don't forget to eat your five pieces of fruit and vegetables today!" than it is for someone to act on the advice to "eat better" or "do more exercise".

Incorporating mobile and online technology into a wellness program helps users focus on the tangible, achievable steps which will help them make the transition to a healthier lifestyle. In essence, delivering this type of step-by-step program makes it *easy* for people to do what they already want to do.

2   Give personalized, targeted feedback to individual employees.

There is a growing body of evidence that suggests that individuals are far more likely to act on health-related advice if the message is tailored to suit their individual needs and desires[16]. While it is true that addressing a group of employees as a whole is certainly beneficial for raising general awareness of the benefits of healthy living, this type of conventional communication fails to foster the type of engagement needed for long-term changes in behavior.

Mobile and online applications can be used here to deliver such personalized programs and advice. This can be done by incorporating actual data from individual users, both from an initial *biometric screening*[17] process as well as ongoing real-time feedback on eating and exercise behaviors from user data-entry.

This information can then go into the development of a personalized program that is tailored to suit the needs of the individual. An individual is far more likely to act on the information they receive if they know it is specifically for them, rather than a one-size-fits-all approach.[18] In a poll conducted by the *Consumer Health Information Corporation* 79.9% of respondents said they would be more likely to use an application that provided personalized feedback.[19]

'79.9% OF RESPONDENTS SAID THEY WOULD BE MORE LIKELY TO USE AN APPLICATION THAT PROVIDED PERSONALIZED FEEDBACK'

Furthermore, the *Health Belief Model* of health-behavior states that people's beliefs about their own health status influence their willingness to take preventive action. Thus individuals will react differently to certain messages or advice based on how they view their health-status[20]. A wellness provider should take account of this information when designing a program for each individual.

Until recently, this type of personalized program was mainly conducted through face-to-face interaction with health experts. Such programs were often expensive and time-consuming. However, since the development of mobile and online technology has become so common, such face-to-face interaction is no longer the only way to create these programs. High-quality, evidence-based personalized programs can also be developed and delivered through this technology and can help to increase employee engagement in wellness programs.

3 Make healthy choices fun and rewarding by providing positive reinforcement.

Mobile and online technology can offer a way to make the process of getting healthy a positive and rewarding experience, which makes it more likely that employees will remain committed to the program long enough to create behavior change.

There is much scientific evidence to suggest that people adapt and behave in ways that reward and reinforce positive emotions and thoughts[21]. That is, people respond better to *positive-oriented* messages and are more likely to continue a certain behavior if it is associated with a positive feeling, rather than a negative one. Mobile and online health applications provide an avenue through which employees can be instantaneously "rewarded" for their healthy behaviors.

For example, when employees log-in some particular healthy behavior (e.g. eating some fruit or taking a walk) they receive feedback that acknowledges this behavior in a positive way. Additionally, the use of a points-system – whereby points are awarded on the basis of performing healthy tasks – creates a sense of reward and achievement for performing health behaviors. "Points" can be collected and compared with colleagues, and more traditional incentives (financial or otherwise) can be offered to those who perform well.

This positive reinforcement acts as a counterbalance to short-term pleasure received from engaging in unhealthy behaviors (eating chocolate, drinking sugary drinks etc.). It also helps employees focus on the creation of *new* healthy behaviors, as opposed to concentrating on trying to stop the old ones. Positive reinforcement helps to make the process of getting healthy fun and rewarding, which increases engagement in wellness programs.

4 Create a virtual-community of social support and motivation among employees

Integrating mobile and online technologies into a work-site wellness program also has the benefit of creating a virtual-community of peers that can offer real-time motivation and support. There is significant research that suggests that social relationships can have powerful effects on health behaviors[22][23]. In a recent survey by *Virgin Health Miles* 56% of employees agree that peers provide motivation and helpful support with health improvement efforts. In addition, 55% agree that sharing information about progress with peers helps them remain accountable for their success.

"USING MOBILE TECHNOLOGY AS PART OF A WELLNESS PROGRAM CREATES AN OPEN AND TRANSPARENT COMMUNITY THAT IS FOCUSED ON CREATING A HEALTHY WORKPLACE CULTURE."

Using mobile and online technologies as part of a wellness program allows users to share their experiences with one another. This is particularly true when considering the significant growth of smart phone technology, which allows users to benefit from this virtual community at any time of the day or night [24]. This kind of real-time support (as opposed to weekly meetings, for example) is of huge benefit to those trying to take the steps towards a healthier lifestyle.[25]

For example, when employees log the healthy things they did each day, an update could be sent out to others in their group. This kind of social interaction can help motivate others to complete their tasks and also provide support and feedback to those who did. Employees can use this virtual-community to ask for

help, give advice, and motivate competition, all from the convenience of a mobile or online device.

Based on *Social Cognition Theory* and *Social Marketing Practice*, the concept proposed is that using mobile technology as part of a wellness program creates an open and transparent community that is focused on promoting healthy values and creating a healthy workplace culture.

Conclusion

In conclusion, mobile and online technologies can be used, as part of an overall workplace wellness program in order to achieve lasting behavior change among employees.

Creating this kind of behavior change is necessary for employers if they wish to reduce the overall costs associated with obesity and related conditions, as well as positively impact the lives of individual employees. The opportunity to make these savings has increased since the introduction of the *Affordable Care Act* which has significantly changed the landscape of health care in the U.S.

Research suggests that simply communicating objective information about health-risks is not enough. A successful workplace wellness program must take account of the complex and dynamic factors that influence how people behave when it comes to health-related decisions.

Incorporating mobile and online technology into a wellness program offers a way to do this by making the process of getting healthy easy, personal and rewarding, while also creating a social-network among employees that can offer the necessary support and motivation.

Appendix

1 – Gallup Poll Gallup-Healthways Well-Being Index

2 – http://www.oecd.org/health/49716427.pdf

3 – http://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/

4 – http://publications.nice.org.uk/behaviour-change-ph6/public-health-need-and-practice

5 – http://applications.emro.who.int/dsaf/EMRPUB_2012_EN_1362.pdf

6 – http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/C/PDF%20ConsumersInHealthCareBurdenChoice.pdf

7 – https://www.buckconsultants.com/portals/0/publications/white-papers/2006/it-hap-engaging_consumers_in-changing-health-behaviors-us.pdf

8 – George Miller, Charles Roehrig, Paul Hughes-Cromwick, Craig Lake, (2008) "Quantifying national spending on wellness and prevention", , Vol. Iss: 19, pp.1 - 24

9 – Green L, Kreuter M. Health promotion planning: an educational and environmental approach. Palo Alto, California, Mayfield Publishing, 1991:20.

10 – See: Social Cognitive Theory, Social Marketing Theory, The Ecological Perspective

11 – http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/C/PDF%20ConsumersInHealthCareBurdenChoice.pdf

12 – http://onlinelibrary.wiley.com/doi/10.1111/j.1467-789X.2007.00337.x/full

13 – http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0019657

14 – http://www.bjfogg.com/

15 – http://www.slideshare.net/captology/stanford-6401325
16 http://www.juliekientz.com/papers/Halko-Personality-Persuasive2010.pdf

17 – A biometric screening process takes blood samples from employees and runs a health risk assessment by categorising individuals in terms of their risk of developing chronic lifestyle diseases (obesity, heart disease, diabtetes etc.)

18 – http://www.ijbnpa.org/content/8/1/43;

19 – http://www.prweb.com/releases/2011/04/prweb5268884.htm

20 – http://www.cancer.gov/cancertopics/cancerlibrary/theory.pdf

21 – http://updegrafflab.org/files/8913/3886/8229/GallagherUpdegraff_-_Annals_of_Behavioral_Medicine.pdf

22 – http://www.nejm.org/doi/full/10.1056/NEJMsa066082

23 – http://www.health.harvard.edu/blog/social-networks-can-affect-weight-happiness-201112163983

24 – Darrell West, How Mobile Devices are Transforming Healthcare

25 – http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222182/

Author: Dr. Robert Grant

Rob completed his PhD at Trinity College Dublin, Ireland, specializing in Philosophy and Linguistics, where he was an *Irish Research Council Post-Graduate Research Scholar*. Before taking his PhD at Trinity, Rob spent four years in North America on a full athletic basketball scholarship at Berkshire School, MA, USA, and Memorial University, Canada.

GetHealth is a mobile and online platform which aims to increase employee engagement in workplace wellness programs. The application allows users to check-in to their daily health tasks under the Move, Munch and Mind categories and earn points for achieving personalised health-goals, while competing against friends and colleagues. By making the task of getting healthy simple, social and fun, GetHealth facilitates the creation of lasting behavior change in users which results in healthier employees and a more productive workplace culture.

If you have any questions please contact us at: hello@gethealthapp.com