



# A Focus Group Assessment to Determine Motivations, Barriers and Effectiveness of a University-Based Worksite Wellness Program

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#### ABSTRACT

**Background:** This study explores university employee perceptions and understanding about its Worksite Health Promotion Program (WHPP). The WHPP included a Health Risk Appraisal (HRA), biometric screening, publicity for oncampus health programs and facilities, and health coaching.

**Methods**: A qualitative design was used based on a grounded theory approach. Four 90 minutes focus groups with 6-8 participants in each were conducted within a two 2 week period among employees, representing faculty/participants, faculty/nonparticipants, staff/participants, and staff/nonparticipants. Responses to questions about motivations, barriers, and perceived health benefits that impacted participation in the WHPP were digitally recorded, transcribed and coded for themes.

**Results**: Incentives effectively motivated participation. Biometric screening had the largest impact on behavior change, followed by the information learned from the HRA. However, despite two-thirds of the employees participating in the program, lack of a full understanding of WHPP benefits and services lowered participation in follow-up services and supplemental programs.

**Conclusions**: Biometric screening and HRAs effectively motivate program participation. Communication of benefits and services are important when providing WHPPs.

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#### Introduction

The most prevalent chronic diseases (e.g., heart disease, cancer) are largely preventable and directly attributable to behavioral and lifestyle choices<sup>1</sup>. Evidence-based programs, which educate, teach skills and offer support to eliminate unhealthy behaviors, can have a major impact on health. While the United

States spends more than any other nation on healthcare per capita, poor dietary and physical activity behaviors have contributed to their ranking 36<sup>th</sup> in life expectancy and 37<sup>th</sup> in health outcomes in the world<sup>2, 3</sup>. Hence, the need exists for healthcare reformers to give attention to promoting the design,

funding, evaluation, and delivery of tailored interventions that address preventable causes of death<sup>3</sup>.

In 2010, the Affordable Care Act established a prevention council comprised of 17 interdisciplinary health professionals. The aim of this council is to prioritize disease prevention efforts, improve health and save lives by integrating recommendations and actions across multiple settings<sup>4</sup>. The emphasis that healthcare reform places on prevention directs the attention of policymakers toward improving health promotion and education services availability.

In the United States and elsewhere, worksite health promotion programs are increasingly being used to promote better employee health behaviors, prevent disease, and improve productivity.

# Healthcare Cost and the Role of the Workplace

Healthcare costs have risen at a rate of over seven percent annually over the past four years and represent an area of critical concern nationwide<sup>5, 6</sup>. Employers share substantially in the burden of these increasing costs, and they are increasingly interested in encouraging and fostering facilitating, healthy employee behaviors. The workplace has been identified as an ideal place to promote health because of existing channels of communication, the worksite culture and support structure, and because most employed Americans spend an average of 43 hours a week at work<sup>7,8</sup>.

## Health Promotion Solutions

Worksite health promotion programs (WHPPs) are becoming a core strategy to prevent disease, as evidenced by the National Prevention Strategy, which states that workplaces are key "partners in prevention"<sup>4</sup>.Employers view WHPPs as a way to improve employee health and wellbeing, boost employee productivity and morale, decrease employee absenteeism, and lower overall healthcare costs<sup>9-11</sup>. The United States Department of Health and Human Services has recognized the value of WHPPs by making them part of its Healthy People Initiatives. For example, Healthy People 2010 specifically aimed to increase the number of worksites with 50 or more employees offering nutrition and weight management services from 55% to 75%<sup>12</sup>.Healthy People 2020 objectives furthered that initiative by striving to "promote the health and safety of people at work through prevention and early intervention"<sup>13</sup>.

## Design

AWHPP, when properly designed, is likely to increase employee health, well-being, and productivity while decreasing healthcare costs<sup>8</sup>. Key elements in successful and effective WHPPs include Health Risk Appraisals (HRAs), biometric screening, and incentives<sup>14</sup>.

## Health Risk Appraisal

HRAs have been used as a method for making individuals aware of their health behaviors, especially those that, if not mitigated, could result in illness or death<sup>15</sup>.HRAs substantially aid work-based health interventions, not only because they personalize the intervention for each participant, but also because they provide valuable feedback to improve future interventions. For example, HRAs make employees aware of their personal health concerns and allow them to self-select programs that address their needs. Most HRA vendors can aggregate HRA data before and after program implementation to help evaluate program effectiveness.

## Biometric Screening

Health risks can also be identified through biometric screening. Screening results, in conjunction with survey responses, provide a complete picture of health status. With this information, appropriate behavior modifications can then be taken. In 2007, the Centers for Disease Control and Prevention (CDC) Community Guide branch of the National Center for Health Marketing (NCHM) conducted a thorough review of literature and identified how to best use HRAs in the workplace<sup>16</sup>.Findings supported prior literature that HRAs in conjunction with screening results, comprehensive health promotions, and education programs yielded the best results in promoting overall behavior change<sup> $\delta$ </sup>.

#### Incentives

WHPPs that use incentives to promote participation achieve greater success. Well over 70% of WHPPs use some sort of incentive system to increase employee enroll $ment^{17}$ . These incentives can take many forms, including financial bonuses, reduction in insurance premiums, paid time off from work, t-shirts, gym bags and gift cards, but most researchers believe that financial incentives work most effectively<sup>17,18</sup>. Of course, indirect motivations for enrolling in WHPPs, such as facility accessibility, ability to include family members, a supportive work environment and management or coworker encouragement, can also have a large impact on participation<sup>19</sup>.

#### Setting

WHPPs should, in theory, work effectively in university settings because universities have many of the advantages worksites have for promoting health, but also often have vast health facility resources. However, few researchers have published university WHPP outcome studies, and the few research articles that have typically cite literature from non-university based worksite wellness programs<sup>20</sup>.

One reason for the lack of reporting on such programs may be due to an absence of university health promotion programs. It may be that although universities theoretically have more resources for developing successful WHPPs than most business and industry settings, bureaucratic structure and departmental boundaries can prevent worksite health promotion efforts from getting off the ground<sup>21</sup>. In addition, the number and diversity of employees on a university campus can create challenges for program planners, such as promoting the program to a very diverse population, which may include students.

In response to these challenges, Reger and associates aspired to develop a university health promotion program by involving

employees in the planning process, which involved creating a five-member steering committee, a 37-member advisory committee, and focus groups<sup>21</sup>. Allowing employees to participate extensively in the worksite health promotion program's development enabled the university to devise an exceptional wellness program and a "university environment conducive to social and individual empowerment toward high-level wellness"21. The designers of the program also identified community resources off-campus. This helped overcome institutional barriers and facilitated wellness activities in every aspect of the employee's life<sup>21</sup>. Thus, potential challenges in developing a successful university based WHPP were addressed by involving employees in the programs design and by incorporating creative solutions.

#### Intervention

The University of Utah Employee Wellness Program started in 2007 called WellU, with the goal to increase university employee awareness of their health behaviors and current health status<sup>22</sup>. It was assumed that appropriate health behavior change required knowledge of current health behaviors and risks. By completing an outsourced HRA, employees became eligible for a discount of \$40/month toward their monthly health insurance premium.

#### Enrollment

During the five-year history of the program, two-thirds of the university's 15,000 benefits-eligible employees participate in WellU. In response to employee feedback and financial implications, program enrollment requirements changed year to year. In the first year of the program, employees had to complete the HRA in order to participate in WellU. After completing the HRA, they personalized would receive feedback through the HRA vendor, WebMD. Initially, the program did not require participation in biometric screening however that changed in years two and three of the program. During the 2008-2010 fiscal years, HRA and biometrics, height, weight, BMI, cholesterol/glucose screening, heart rate and blood

pressure, became participation requirements. The program dropped biometric screening requirements in 2010-2011 fiscal year and changed HRA Vendors in the 2011-2012 fiscal year. Beginning with open enrollment in 2011, in addition to completing the HRA, the program required participation in two or more specified programs and/or wellness activities, such as enrolling in an exercise class on campus or visiting a personal physician for preventive screenings.

After the HRA assessment and feedback, enrollees were encouraged to participate in a number of wellness programs that the university campus offers, including fitness classes offered through the Exercise and Sports Science (ESS) department and the Employee Wellness Center individualized health, fitness, and nutrition consulting program (started in 2010). Employees are also encouraged to use university or off-campus fitness and recreation facilities. However, whether or not the program effectively stimulates employee health improvement has yet to be seen.

## Motivation and Barriers

WHPP success depends on a thorough understanding of the factors that motivate participation and barriers that limit involvement. Such information is critical in directing the design of a program to maximize employee participation. However, this information is currently not available for WellU<sup>21,23</sup>. The purpose of the current study was to provide a qualitative assessment of the effectiveness of a university health promotion program. Factors that motivate program participation and barriers to entry will be explored.

# Materials and Methods

## Research Questions

The current study involved the following research questions:

> • How did participation in the WellU program impact behavior change in this population? (A participant is defined as an em

ployee who completes the HRA and receives a personalized report and tailored behavior change messages. Health coaching was only available in the first couple years of the program.) For example, did an employee quit smoking or lose weight as a result of the information provided in the HRA report?

- How did the incentive influence employee participation? Would participants have gotten involved without such a generous incentive?
- What were the motivations and barriers for participation in the WellU HRA component of the program?
- Did participation in the WellU HRA influence employee participation in WellU-sponsored programs and/or community activities to improve their health?

## Research Design

We conducted four 90-minute focus groups during a two-week period. Two of these groups consisted of those enrolled in the WellU program  $(n_1 = 7, n_2 = 8)$ , while the other two consisted of those who were not in the program ( $n_3 = 6$ ,  $n_4 = 6$ ). The focus group administrator asked employees about the barriers and motivations that affected their participation in the WellU program and, for those who participated, if they felt that their health behaviors had changed because of their involvement in the program. Participants also had the opportunity to offer suggestions about how to improve the program. Participants received \$25 as compensation for their time. This money was made available as part of an internal university grant.

After conducting all four focus groups, we summarized qualitative feedback from each one to determine overall perceived behavior change, motivators, and barriers of WellU participation.

#### Participant Selection Criteria and Recruitment

Representativeuniversity employees participated in one of four 90-minute focus groups. The four groups were sorted into faculty/participants, faculty/nonparticipants, staff/participants, and staff/nonparticipants. Those involved in the study were recruited by verbal encouragement from department administration, flyers, e-mail notifications and word of mouth. Focus group participants represented a diverse cross-section of university faculty and staff. Recruitment efforts took place across campus in order to obtain a representative employee sample.

Institutional Review Board approval was received before beginning focus group interviews. Focus group participants were asked to sign an informed consent at the time of the focus group that explained the study's objectives, possible risks, and benefits. In order to maintain the confidentiality and integrity of the focus group responses, responses were de-identified. To protect privacy, members of the focus groups were encouraged to respect and maintain the confidentiality of their fellow group members.

#### Instruments

To stimulate discussion, questions were incorporated from the validated 2004 Healthstyles Survey that focused specifically on worksite health promotion. The 2004 Healthstyles Survey was a national health habits survey developed by experts from several health agencies, including the Centers for Disease Control and Prevention. Specific and unique questions from WellU administrators also facilitated discussion. Questions asked of WellU Participants:

- How did you become aware of the WellU program?
- Are you aware of the premium discount that you receive on your health insurance when you participate in WellU by taking a health risk appraisal and biometric assessment?
- Did you learn something new about your health from com-

pleting HRA? Did the process of completing the HRA and the final score make sense to you?

- Did you make changes in your behavior as a result of the HRA and WellU program? If so, please elaborate.
- In 2008, WellU/Human Resources rolled out a preventive care benefit; did you participate in this benefit? If, so did you identify any health issues and did you go to a doctor to seek further treatment for this health concern?
- Did you receive a call from a health coach? If so, did the health coach help you address any health issues?
- Are you aware of your individual health consulting benefits (passport program) through the employee health center? If so, did you use them and what were the results?

Questions asked of non-participants:

- Are you aware of the WellU Program?
- If so, did you ever attempt to enroll in the program? If so, why did you stop or not continue the process?
- Why are you not participating in this program? (Barriers)
- What would motivate you to participate?

#### Data Collection

The lead author and two note-taking observers facilitated the focus group discussions and digitally recorded each group to validate the notes taken. Notes and recording for each session were transcribed and thoroughly reviewed for common themes. All data collected during focus group discussions were organized into thematic constructs (Table 1).

#### Data Analysis Procedures

The qualitative data collection methodol-

ogy used in this study was typical to a grounded theory methodology of qualitative research, which generally uses an interview strategy either in groups or individually. According to Morse and Richards, notes and recordings are often taken simultaneously to ensure that all data are recorded and taken into account<sup>24</sup>. Focus groups are often used to highlight issues within a particular research environment or domain. Because open-ended questions are asked there is the potential of learning more about an issue than originally intended. This requires the researcher to skillfully code, simplify and focus on the specific characteristics of the data that provides  $insight^{24}$ .

Inherent to qualitative research, and particularly to the analysis of interview and recorded focus groups, data coding must take place. Descriptive and topic coding serves to categorize and store data while analytic coding develops themes and constructs out of the data<sup>24</sup>. The researcher received notes from the two note-takers and personally transcribed the voice recordings. A careful and thorough comparison of these two data sources was conducted and subsequently coded to identify the themes and constructs discussed in the results section. The analytic coding then took place manually by categorizing common responses to each area of questioning and identifying the number of times these responses were articulated. The recurring responses were then used to establish the themes characterizing these commonalities. These themes and supporting quotes are reported in the results section of this article.

## Results

The major themes and constructs that arose from the coding of the focus group discussions are in Table 1.

#### Awareness and Behavior Change

Research Question: How did participation in the WellU program impact behavior change in this population? (Participation is defined as employees who

completed the HRA and received a personalized report and tailored behavior change messages.) For example, did an employee quit smoking or lose weight as a result of the information provided in the HRA report? The focus group data collected from participants in the program supported the hypotheses that the information learned from the HRA prompted behavior change and reduced health risks. Selections of the verbatim comments recorded were: "I did learn something about my health and I look forward to seeing improvements next year," and "it was consistent with what I expected, no surprises." Twelve of 15 focus group participants (80%) agreed that having biometric information was the most important and motivating factor for change. Watching those changes year after year was reported as a motivator. One participant said,

"Biometrics were more helpful than HRA," and another, "Biometrics would be more likely (than the HRA) to motivate me to make a change." One participant felt that actual behavior change was not emphasized enough and that the program "should push behavior change."

On the other hand one participant stated he "didn't learn anything from the results" and another was "offended by the results, and didn't know what to do with [them]." Eight of 15 (53%) agreed that the program didn't seem to reward or encourage behavior change because "they do not ask you to do anything except take the tests."

Questions came up about the worksite health promotion process itself. For example, one individual asked, "do they do anything if you do not 'pass' the biometrics?" Ten of 15 (67%) agreed that the promotion of the program they had seen was more about the incentives than the potential behavior changes.

Stated concerns with biometric assessment included one participant who found it "de-motivating" (participant was obese), and another who considered it less than accurate. Conversely, others found it to be the most motivating part of the assessment process.

#### Table 1: Focus Group-Derived Themes and Constructs

Time - to complete HRA, to participate in WellU sponsored programs

- *Communication* lack of communication, lack of knowledge about available programs and services related to WellU, communication difficult to read and understand Trust in results HRA, biometrics
- *Satisfaction* all participants were generally satisfied the incentive made most people happy because the cost/benefit ratio was huge. One hour of time for \$480 worth of benefit with no commitment to behavior change

Confidentiality - concerns over who had access to the individual HRA reports and biometric data

#### Increased Participation in Health Related Activities

Research Question: Did participation in the WellU program affect the employee's participation in WellU-sponsored community activities to improve their health? Eight of 15 (53%) indicated that the WellU-sponsored community activities were either too distant from their home or that they did not understand these services were connected to the WellU program. For example, one respondent said, "I would love (to) participate, but I am off-campus. Remote locations do not lend themselves to participation in these on-campus programs," while another reported, "I didn't understand this was part of the worksite health promotion program."

Regarding the onsite employee wellness facility (Passport program), only two out of 15 (13%) were aware of it, and both had used this service with positive results. For example, one said, "the nutrition consultation was very helpful to me." In fact, after learning about this program, most participants thought it would be the most valuable program that WellU could offer. However, many stated that finding time to use this service would still be an issue.

One participant (female) had the personalized nutrition consultation through the employee wellness center and commented, "it made a big impact on my health." She realized that she was mainly concerned with her calorie intake and not what she was actually eating. Her consultations made her more aware of what she needed to eat in order to be healthy. She also commented on how "good" these consultations were because they were individualized: "they took my height, weight, [and] exercise habits, and this was beneficial to making my portion sizes and food choice right for me." She commented that, being more aware of what she was eating made a positive change in her life. Another female participant saw the dietitian because her son had become a vegan and she wanted to know more about giving him the proper nutrients. She gave this dietitian a "10," and said, "she gave me incredible information."

#### Participation and the Incentive

Research Question: How did the incentive influence employees to participate in the program? Would they have done so without such a generous incentive? Regarding the motivators for participation, focus group data cited predominantly the financial incentive; 60% of participants said that the \$40 per-month premium reduction was their primary motive for participation, and it was generally considered a more significant motivator than the HRA's personalized health feedback. Seven of 15 (47%) stated that while they were motivated by learning more about their health, the incentive helped initiate the process.

When asked if they would participate without the incentive, only half said they would. One commented that she would, but that she did not believe any of her co-workers would participate without the incentive. Another commented that he would not have participated because he already knew enough about his health and didn't believe he would learn anything new from the HRA. Another enrollee stated that she "couldn't quite understand the purpose of taking it, (the HRA)" and, when asked about the results, his comments included: "[I] didn't care about the score. [I] just wanted the \$40."

#### Barriers

Non-enrolled employees cited the following as the greatest barriers to participation:

- Time restrictions
- Feeling that the program was a low priority
- Distance problems
- Professional and personal responsibilities getting in the way

• Confidentiality concerns/ worries about strange people calling and asking questions about that individual's health.

Other reasons voiced for not participating included keeping one's own health records, already knowing they are healthy, the incentive not being enough, locations for participation in biometrics being inconvenient, scheduling of biometric being inconvenient, and feeling the program was irrelevant because they were on a spouse's insurance program. Ten of 12 (83%) indicated that program communication was weak. Nonparticipants claimed that they didn't understand how the program worked, and completing the HRA was confusing and cumbersome. In order to enroll in the program, for example, the participant needed to register and create a pin number. Some gave up after attempting the process mostly due to confusion about pin numbers and how to access the product on-line. Seven of 12 (58%) thought the HRA site was too difficult to access; the pin numbers were inconvenient. Comments ranged from "get rid of the pin numbers" to "it took too long" to "[the process] should be more concise."

#### Health Coaching

In the first two years, WebMD, the HRA vendor, offered health coaching by phone to those employees determined to be at moderate and high risk. Many participants in the focus group had received a call, some of whom found it helpful, positive and encouraging. One, for example, found that her coach did "everything right." However the majority found it invasive and commented that it was like getting a call from a call center. "I didn't get any positive help from the coach," one said, and wondered how long the phone calls would go on. One participant found the goal setting to be "redundant" and "intrusive" and believed that her coach was "unskilled" and impersonal. The participant added, "When I would get a call it would be a different coach each time who didn't know me. This was very frustrating."

#### Suggestions for Improving the Program

After discussing the research questions, the focus group facilitator asked for suggestions on how to improve the program. The common responses included communication, accessibility, and management support for participation. Specific responses are as follows:

#### Communication

• Educate employees about the services available. "People could benefit from the individual employee wellness services, but no one knows about it."

• Show how much money participants can save by using Wel-IU instead of an outside program.

• Interview people who have done it and put it in a newsletter, because it means much more hearing about it from co-workers.

• Tell what the programs can actually do for you (testimonials).

• Make specific newsletters for each program service.

• Make the WellU newsletter more accessible, readable and understandable.

• Make the subject headers on the promotional e-mails more interesting, because that will determine whether an individual will want to read it or not. One participant explained that he would not bother opening a link from an e-mail. Everyone in the group agreed that subject headings make the difference.

• Improve communication with participants about the program's benefits.

#### Accessibility

Provide program services closer to my work location. (One woman, for example, had started a yoga group in her office building and wondered if the program could get an instructor to come to them once a week to make sure they did the poses correctly. Another mentioned bringing a variety of classes to the different colleges/locations on campus each month, which might encourage people to sign up for the permanent classes offered by the Exercise and Sports Science Department.)

#### Support

• More support from my supervisors and time off for exercise.

• Paid time to exercise so I won't have to ask for time off of work.

• Make biometrics more private (they are completed in an open room where everyone can see and/or hear).

• Allow spouses to get the biometrics test, even if they have to pay for it. Since they are under the same insurance, why not help the spouses as well?

## Discussion

Participants in the WHPP are employees who completed the HRA and received a personalized report and behavior change message. Participants in the focus group who had participated in the WHPP program indicated that awareness of their current health status through the HRA, primarily the biometric information, was useful in helping them identify where behavior change was needed. However, there was a general feeling that the behavior change messages were not sufficient, and that clear recommendations were needed. In addition, the focus group participants thought that better advertising was needed of the various health-promoting services available through the university. The university currently provides several opportunities for employees to follow through with behavior change intentions using onsite facilities and services. These include an active employee recreation program, on-site exercise classes run through the Exercise and Sports Science Department, a campus field house, which serves as an on-site fitness center, and an employee wellness center, which provides individualized services such and coaching and nutrition consultation. Other researchers have found that employers who administered HRA's but did not provide meaningful follow-up interventions were less likely to see changes in employees' health and related outcomes<sup>8,9</sup>.

Incentives, primarily financial incentives, were the strongest motivating factor for participation. Approximately 55% said this was the only reason why they participated in the WHPP. Other research has shown that there is a direct relationship between monetary incentives and level of participation in wellness programs<sup>25</sup>. The fact that some WHPP participants completed the HRA merely because of the incentives raises the question how likely they were to follow through on recommended behavior changes, if any. Further research in this area is warranted. Primary barriers to participation, as consi-stent with the literature,<sup>26,27</sup> included insuffi-cient time, lack of communication or under-standing about the program, lack of perceived need for participation, and concern that confidentiality would not be maintained.

Research has shown that health coaching can be an effective component of worksite health promotion programs<sup>28,29</sup>. Some participants felt that clearer recommendations were needed on how to improve their health behaviors. Health coaching may be an effective way to address this concern. That is, a health coach can review HRA results with the employee and provide meaningful recommendations and follow-up. As noted above, telephonic health coaching was offerred to participants in the first two years of the program. Although most of the employees found it helpful and a positive experience, not all were happy with their health coaching experience. Their comments suggest that if health coaching is going to be included in the WHPP again in the future, it should focus primarily on those individuals with a clear need to make health behavior change.

Common themes on ways to improve the WHPP involved better communication, accessibility, and support for participation. Focus group participants suggested that communication about the WHPP would be more effective if it came from actual participants instead of the university. The need for breaking down skepticism and building up trust was emphasized, and it was thought that this could be done by providing simple, readable information and testimonials from people who have benefited from the WHPP. A clear weakness in the program was the general lack of knowledge about the extensive health services available across the University. The accessibility issue may be partly solved by addressing this problem.Finally, the comments about a need for better support are consistent with other research that has shown that WHPPs perform better if they have the support of company leadership through policies and environments making it feasible for employees to exercise

during the day, eat healthy at work, and feel that their employer has interest in their physical and mental health<sup>30,31</sup>.

# Conclusion

Biometric screening and HRAs effectively motivate program participation. Communication of benefits and services are important when providing WHPPs.

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# References

- Schoenborn CA, Adams PE. Health behaviors of adults: United States 2005-2007. Vital Health Stat 10 2010; (245):1-132.
- List of Countries by Life Expectancy. Wikipedia. [Cited July 10, 2013]. Available from http://en.wikipedia.org/wiki/List\_of\_countr ies\_by\_life\_expectancy. Is Wikipedia allowed?
- Murray CJL, Phil D, Frenk J. Ranking 37th

   Measuring the performance of the U.S. health care system. N Engl J Med 2010; 362: 98-99.
- 4. National Prevention, Health Promotion and Public Health Council.National Prevention Strategy Report. US Department of Health and Human Services, Office of the Surgeon General. Washington, DC:s.n., 2011.
- 5. Kenealy B. Health care costs explode. 2011, *Employee Benefits News.*
- Mayne L, Girod C, Weltz S. The Milliman Medical Index. Milliman. 2011. [Cited July 10, 2013] Available from http://insight.milliman.com/article.php?cnti d=8078&utm\_source=milliman&utm\_medi um=web&utm\_content=MMImktg&utm\_campaign=Healthcare&utm\_ter ms=Milliman+ Medical+Index.

- American Time Use Survey. Bureau of Labor Statistics. [Cited December 2, 2012]. Available from http://www.bls.gov/tus/charts/.
- 8. Goetzel RZ, Ozminkowski RJ. The health and cost benefits of worksite health promotion programs. *Annu Rev Public Health* 2008; 29:303-323.
- 9. Chapman LS. Meta-evaluation of worksite health promotion economic return studies. *Am J Hlth Promo* July/Aug 2005; 19: 1-10.
- Harden A, Peersman G, Oliver S, et al. A systematic review of the effectiveness of health promotion interventions in the workplace. *Occup Med* 1999; 49: 540-548.
- 11. Pronk N.ACSM's Worksite health handbook. Human Kinetics. Champaign, IL; 2009.
- Healthy People.gov. Healthy People.gov. 2011. [Cited August 15, 2013]. Available from http://healthypeople.gov/2020/about/objec
- tiveDevelopment.aspx.
  13. Healthy People 2020 Objectives. Healthy People 2020. 2011. [Cited INSERT DATE]. Available from

http://healthypeople.gov/2020/.

- 14. Della LJ, DeJoy DM, Mitchell SG, et al. Management support of workplace health promotion: Field test of the leading by example tool. *Am J Hlth Promo* 2010; 25: 138 -146.
- 15. Huskamp HA, RosenthalMB. Health risk appraisals: How much do they influence employees health behaviors. *Health Affairs* 2009; 28: 1532-1540.
- 16. Health Risk Appraisals. CDC. [Cited February 9, 2013]. Available from http://www.cdc.gov/nccdphp/dnpao/hwi/programdesign/health\_risk\_appraisals.htm.
- 17. Anderson DR, Grossmeier J, Seaverson ELD, et al. The role of financial incentives in driving employee engagement in health management. *ACSM's Health Fit J* 2008; 12: 18-22.
- Merrill RM, Hyatt B, Aldana SG, Kinnersley D. Lowering employee health care costs through the Healthy Lifestyle Incentive Program. J Public Health Manag Pract 2011; 17(3): 225-232.
- 19. Kruger J, Yore MM, Bauer DR, et al. Selected barriers and incentives for worksite

health promotion services and policies. *Am J Health Promot* 2007; 21: 439-447.

- 20. Linnan L, Brooks A, Haws S, et al.Community colleges as settings for promoting employee health.*AmJ Health Stud* 2010; 25: 86-91.
- 21. Reger B, Williams K, Kolar M, et al. Implementing a university based wellness: A participatory planning approach.*Hlth Promo Prac* 2002; 3: 507-514.
- 22. Gines J.The WellU Program. [interv.] Dee Hill-Mey. November 2009.
- 23. Ball T.Selected barriers and incentives for participation in a university wellness program. UtahStateUniversity: unpublished. Thousand Oaks, CA: 2009. Thesis.
- 24. Morse J, Richards L.Read me first for a user's guide to qualitative methods. Sage Publishers. Thousand Oaks, CA; 2002.
- 25. Seaverson E, Grossmeier J, Miller TM, et al. The role of incentive design, incentive value, communication strategy and worksite culture on health risk assessment participation. *Am J Hith Promot* 2009; 23: 343-352.
- Kruger J, Yore MM, Bauer DR, Kohl HW. Selectedbarriers and incentives for worksite health promotion services and policies. *Am J Health Promot* 2007; 21(5): 439-447.
- Person AL, Colby SE, Bulova JA, Eubanks JW.Barriers to participation in a worksite wellness program.*Nutr Res Pract* 2010; 4(2): 149-154.
- 28. Merrill RM, Aldana SG, Bowden DE. Employee weight management through healthcoaching. *Eat Weight Disord* 2010; 15(1-2): e52-e59.
- Merrill RM, Aldana SG, Ellrodt G, Orsi R, Grelle-Laramee J. Efficacy of the Berkshire-Health System Cardiovascular Health Risk Reduction Program. J Occup Environ Med 2009; 51(9): 1024-1031.
- Merrill RM, Aldana SG, Pope JE, et al. Selfrated job performance and absenteeism according to employee engagement, health behaviors, and physical health. J Occup Environ Med 2013; 55(1): 10-18.
- 31. MerrillRM, Aldana SG, Pope JE, Anderson DR, Coberley CR, Whitmer RW. Presenteeism according to healthy behaviors, physical health, and work environment. *Popul Health Manag* 2012; 15(5): 293-301.
- 1.