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Understanding Key Players and Factors Involved in the
Implementation of Physical Activity Push Strategies into
Organizational Settings

A dissertation submitted in partial satisfaction
of the requirements for the degree
Doctor of Public Health

by

Jammie Mack Hopkins

2012

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ABSTRACT OF THE DISSERTATION

Understanding Key Players and Factors Involved in the
Implementation of Physical Activity Push Strategies into
Organizational Settings

by

Jammie Mack Hopkins

Doctor of Public Health

University of California, Los Angeles, 2012

Professor Antronette K. Yancey, Chair

Background: Integrating physical activity “active-by-default” or “push” strategies into the standard conduct of organizational settings is a promising approach to engage sedentary and overweight individuals in regular physical activity. However, organizations must navigate a number of factors to ensure these strategies remain sustainable over time and elicit favorable outcomes. This dissertation project examined the implementation process that human services worksites undertook while participating in the UCLA WORKING Project, a NIH-funded intervention promoting physical activity and healthy eating.

Methods: Process evaluation notes obtained from worksites assigned to an active intervention group (N=24) were used to classify worksites according to four implementation success categories. Key informant interviews (n=13) with employee program champions and middle managers provided insight into roles and responsibilities, organizational dynamics, and factors associated with implementation success and failure. Individual clinical indicator and survey data

collected on a voluntary sample of individuals (n=989) employed at participating worksites (N=40) were analyzed to determine any associations between the degree to which a worksite implemented strategies and changes in individual outcomes over a 6-month observation period. Organizational-level data collected from worksite representatives (n=4) were assessed to determine any associations between degree of implementation success and changes in organizational-level physical activity policies and practices over time.

Results: Middle managers played a crucial role in translating and enforcing priorities for their worksites, supporting the efforts of program champions, participating in PA breaks, and advocating for the prioritization of PA strategies. Clear and explicit PA policies, leadership support, pre-existing wellness infrastructure, and the ability to negotiate heavy workloads were cited as factors most strongly associated with successful implementation. Worksites that most successfully implemented the PA strategies had greater improvements over time in employees' BMI, systolic blood pressure, weight, and perception of co-workers initiating PA breaks than less successful worksites.

Conclusion: These findings suggest that implementation success may be linked to favorable outcomes, and that the WORKING Project may have successfully elicited favorable changes among employees with the poorest outcomes and highest risk of obesity and its related co-morbidities. Lessons learned from this project can inform future physical activity implementation and dissemination efforts within organizational settings.

The dissertation of Jammie Mack Hopkins is been approved.

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DEDICATION

I dedicate this dissertation to my everlasting “legacy of love.” At the foundation of this legacy reside my mother, Annie Mae Hopkins (RIP), and my father, Mack Q. Hopkins Jr. Thank you both for instilling in me a sense of purpose and confidence from the beginning, supporting my dreams and aspirations, and refusing to let me fall short of my true potential. I love you with all of my heart, and I intend to make you proud for the rest of my life.

To my brothers, my beautiful sister, cousins, and extended family: Thank you for all of the lessons you’ve taught me over the years. Without them I would not be the man I am today. I hope that my journey will continue to inspire you as much as you have inspired me.

To my amazing nephews, nieces, and future children: Let this dissertation serve as proof that you can do anything you set your mind to! I may be the first, but I will certainly not be the last to cross this academic threshold. I encourage you to push against the grain, have the audacity to be excellent, and go for yours! It may take everything you’ve got, but you’ve got what it takes!

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Jackson P, Hopkins J, Yancey A. (2010). Overview of Interventions to Prevent Obesity in African American Children & Adolescents. In *Childhood Obesity Prevention – International Research, Controversies and Interventions*. Oxford University Press.

CHAPTER 1: Introduction and Background

Preface

This dissertation will explore the adoption and implementation processes involved in integrating physical activity (PA) promotion “push” or “active-by-default” strategies into health and human services organizational settings. Push strategies are designed to modify culture and environment to make healthier activities the ‘default’ or easier options that one must opt out of to avoid (e.g. PA breaks during meetings), while making less healthy activities more troublesome to do (e.g. prolonged sitting) (Yancey et al., 2007, Garcia et al., 2009). Utilizing quantitative and qualitative data obtained from worksites that participated in a NIH-funded cluster-randomized wait-list control intervention, I intend to:

- 1) Assess how well worksites implemented the core intervention strategies of an organizational-level physical activity and healthy eating promotion project;
- 2) Gather insights into the roles, responsibilities, and actions of key worksite personnel involved in the implementation process;
- 3) Explore organizational, situational, and cultural factors that may encourage or hinder the implementation of PA strategies into organizational routine; and
- 4) Explore significant associations between the extent to which worksites integrated the PA strategies into their organizational routine (implementation success), and individual/organizational outcomes.

These findings and observations will be synthesized into a summary of recommendations that are intended to inform the conduct of organizations looking to either integrate PA push strategies into their own organizational structure, or actively disseminate and integrate strategies into other settings.

Findings from this body of work may directly impact the practical application of obesity control and organizational wellness, thus addressing the gap between research and practice

identified by researchers, policymakers, and public health practitioners (Glasgow & Emmons, 2007; Glasgow, Lichtenstein et al, 2003).

Background

Escalation of obesity and its associated co-morbidities. Despite significant prevention and treatment efforts targeted at multiple levels of influence over the past three decades, the United States continues to struggle with epidemic rates of obesity and its associated co-morbidities. Research by the National Health and Nutrition Examination Survey (NHANES) estimates that over one third (approx. 35.5%) of U.S. adults are classified as obese using BMI-based criteria, a prevalence rate that has doubled within the past 25 years (Flegal et al., 2012). Los Angeles County adult obesity rates increased by over a third between 1997 to 2007 from approximately 13.6% to 22.2% (Los Angeles County Department of Public Health, 2011c, Los Angeles County Department of Public Health, 2006). Overweight and obese adults are at heightened risk of developing heart disease, strokes, diabetes, cancer, chronic orthopedic conditions, and dying prematurely (U.S. Surgeon General, 2010). Furthermore, obesity and its co-morbidities impose a disproportionate burden on low-income, US-born ethnic minority communities (Sanchez-Vaznaugh et al., 2009). Rates of obesity, and obesity's behavioral underpinnings, physical inactivity and unhealthful eating, are significantly higher among ethnic minorities, even after taking into account socio-economic status (Ogden et al., 2006, Harper and Lynch, 2007, Wang and Beydoun, 2007, Adams et al., 2006). The epidemic of expanding waistlines also places a financial burden on Americans. Estimates of medical spending attributable to obesity totaled approximately \$147 billion in 2008, or roughly 10% of total U.S. health care spending (Finkelstein et al., 2009). Obese adults incur an additional \$1,429 in medical costs per year compared to their normal-weight peers (Finkelstein et al., 2009). The

direct medical costs attributable to physical inactivity are approximately \$77 billion annually (Wang et al., 2004).

Physical inactivity and sedentary behaviors perpetuate obesity trends. There are several schools of thought for explaining the root causes of the U.S. obesity epidemic. While genetics may play a role in predisposing certain populations to increased risk and incidence of obesity and its associated co-morbidities, much of the current literature points to the confluence of environmental, behavioral, and sociocultural factors that have produced an “obesogenic society” that encourages sedentariness and discourages (or, in some cases prevents) leisure-time fitness, recreational activities, and physical activity required for daily functioning (Yancey, 2010, American College of Sports Medicine, 2006). The Centers for Disease Control and Prevention (CDC) estimates that over half of all Americans are not engaging in the minimum levels of physical activity recommended to promote health and decrease morbidity; in fact, 14.2% of Americans are completely sedentary and approximately 25% of Americans do not engage in any form of physical activity beyond the modest requirements for daily functioning (CDC, 2005). A 2004 study found that more than 40% of Los Angeles County adult residents reported less than 10 minutes of continuous moderate activity per week (Yancey et al., 2004c). Bad as they are, the statistics on sedentariness don’t tell the whole story. There is consistent evidence that survey respondents tend to over-report levels of physical activity. Through analyzing objectively measured NHANES accelerometry data, Troiano et al. (2008) found that U.S. adults totaled, on average, only 6-10 minutes of moderate to vigorous physical activity per day and less than 5% of adults met the American College of Sports Medicine (ACSM) recommendations for physical activity (Troiano et al., 2008). Sisson et al. (2012) used accelerometer-determined steps taken per

day in their assessment of physical activity levels and estimated that only 16.3% of the U.S. population were accumulating the recommended 10,000 steps per day (Sisson et al., 2012).

Excessive sedentariness presents health consequences even among adults who do engage in regular moderate to vigorous physical activity (MVPA). A recent summary article published by Owen et al. (2010) discussed adverse cardiometabolic consequences such as increased blood triglyceride levels for individuals who sit for long periods of time (e.g. television viewing, clerical tasks, etc.) on a regular basis, regardless of whether they obtained regular MVPA or not (Owen et al., 2010). In a similar fashion, Matthews et al. (2012) found that sedentary behaviors such as television watching and overall sitting were positively associated with all-cause and cause-specific (e.g. cardiovascular, cancer) mortality, after adjustment for age, sex, smoking, diet, and physical activity levels (Matthews et al., 2012). These startling findings suggest a serious need for innovative strategies that not only encourage regular participation in moderate to vigorous physical activity, but also discourage or interrupt prolonged periods of inactivity as independent contributors to chronic disease risk. Such strategies may reduce metabolic risk factors in both predominantly sedentary and physically active individuals (Owen et al., 2010, Healy et al., 2008).

How do we turn the tide? Escalating rates of obesity and pervasive sedentariness pose serious threats to the health and economic security of the United States. As demonstrated by the tobacco control efforts in the last third of the 20th century, arresting the obesity epidemic will require a paradigm shift in prevention policies and practices at multiple levels of influence to effectively discourage sedentary behavior, reduce the proliferation of high-calorie, nutrient poor foods, increase access to and the appeal of nutrient-rich foods and beverages, and encourage obligatory and leisure-time physical activity (Yancey, 2010).

The current state of PA promotion research. Research aimed at reducing obesity and improving physical activity (PA) and eating patterns, particularly among historically vulnerable ethnic minority populations, has been limited (Physical Activity Guidelines Advisory Committee, 2008). Furthermore, most obesity control efforts have been targeted to individuals, with limited engagement, effectiveness and sustainability, particularly among ethnic minority populations (Kumanyika and Yancey, 2009, Yancey and Tomiyama, 2007, Yancey et al., 2006b). Intervening at the organizational level in workplaces and other settings where individuals convene for business and social interactions (e.g. churches, schools, and volunteer settings) has emerged as a promising physical activity promotion strategy. As most U.S. adults spend the majority of their waking hours working, worksites may constitute a captive environment where such promotions can reach large proportions of individuals simultaneously. This may be especially true in socioeconomically disadvantaged populations, where extensive work hours and long commutes are often necessary to sustain livelihood (Burton and Turrell, 2000). Organizational leadership may be receptive to employee wellness strategies that may be useful in reducing or mitigating well documented work-related concerns such as repetitive strain injuries, absenteeism, loss of productivity, increased health insurance premiums, poor employee morale and staff retention, work-related anxiety and stress, and mental strain related to intense job demands (Karasek, 1979, Karasek, 1996, Beresford et al., 2000, Yancey et al., 2006a, California Department of Health Services, 2004b). In addition, employees are also potential vehicles for the spread of behavioral and social norm change as the “gatekeepers” and “change agents” for their families and communities (Yancey et al., 2004b). Employees that embrace a message of health, wellness, and physical vitality at work may be more likely to spread that message, resulting in larger scale change through a ripple effect (Drummond et al., 2009).

Worksite wellness programs instigate organizational cultural change. Worksite wellness and health promotion efforts in public, private, and corporate organizational settings are becoming increasingly prevalent among the US workforce. According to a study by Hewitt Associates in 2001, 93% of US companies are offering some type of health promotion and management program (Kickbusch and Payne, 2003). Although worksite-based wellness promotion programs show promise in engaging diverse sedentary populations, there is debate as to how these programs should be positioned within organizational settings to yield the most robust and sustainable outcomes. Wellness programs utilizing an individually-based “volunteer” approach (i.e., subsidies for local gym membership, incentives for attending health education classes, enrollment in intramural sports, etc.) have been criticized as being best-suited to engage more fit, more internally motivated individuals and less well-suited to engage more sedentary, less fit individuals who may feel less inspired to actively pursue exercise on non-paid time (Yancey et al., 2006a, Yancey et al., 2004b, Lara et al., 2008). On the other hand, programs and interventions employing organizational social norm change by way of weaving physical activity, healthy eating, and other wellness activities into the standard “conduct of business” have shown promise in effectively engaging obese, sedentary individuals and eliciting favorable individual and organizational outcomes (Lara et al., 2008, Pronk et al., 1995, Wilcox et al., 2007, California Department of Health Services, 2004a).

Modifying organizational norms through employing “push” policies and practices. There is a growing need to investigate interventions: (i) implemented in diverse organizational settings where ‘captive audiences’ already spend much of their time and (ii) promoting ‘push’ policies and practices at the organizational level. Push strategies are designed to modify culture and environment to make healthier activities the ‘default’ or easier options that one must opt out of to

avoid (e.g. PA breaks during meetings), while making less healthy activities more difficult (e.g. prolonged sitting). This is in contrast to the ‘pull’ strategies traditionally employed in past worksite-based PA and nutrition interventions that rely on individual motivation (e.g. offering discounted gym memberships on non-paid time) (Yancey et al., 2007, Garcia et al., 2009). The corresponding language in behavioral economics for push strategies is ‘nudge’ strategies (Thaler and Sunstein, 2009). Thaler and Sunstein (2009) argue that the success with which “interventions” (e.g. programs, policies, changes to environment, etc.) engage individuals in desirable activities will depend on the degree to which the intervention is implemented as an ‘opt out’ rather than an ‘opt in’ strategy (Thaler and Sunstein, 2009). Behavioral economics has shown that ‘choice architecture’ can nudge individuals to make healthier choices even while preserving their freedom to make less healthful choices (Thaler and Sunstein, 2009). There is evidence to suggest that such ‘choice architecture’ can result in 90+% participation rates in organizations employing wellness push strategies (Yancey et al., 2004b, Pronk et al., 1995, Taylor, 2011). Movement towards the endorsement of PA and healthy eating push strategies is further evidenced by several organizations and governing bodies recently adopting formal policies to institutionalize structured activity breaks and healthy food options accessible on ‘company time.’ (Orange County Health Care Agency, 2008, First 5 LA Commission, 2011).

The push strategy approach can elicit measurable positive outcomes. A small but steadily growing evidence base exists that shows measurable improvements in employee health and organizational productivity outcomes can be achieved through integrating PA push strategies into work-based settings. A review of literature conducted by Barr-Anderson et al (2011) identified 11 unique worksite-based interventions that involved the integration of brief physical activity breaks into organization routine, on paid time. Significant improvements in worksite

social support for physical activity, managerial support for physical activity, and stair usage were reported among employees in participating worksites (Barr-Anderson et al., 2011). The following examples further illustrate the feasibility and effectiveness of incorporating brief bouts of physical activity to improve employee health and productivity outcomes.

Westinghouse Strength and Flexibility Program. Pronk et al (1995) examined the impact of a six-month daily 10-minute strength and flexibility program among computer board assembly workers at a Westinghouse manufacturing plant in College Station, TX. Participation rates among plant workers was very high (97-100%), and significant improvements in grip strength and lower back flexibility, improved mood, and reduced anger were identified compared to a group of employees who did not participate in the exercises (Pronk et al., 1995).

Pausa para tu salud! Lara et al. (2007) evaluated the effect of the integration of daily structured 10-minute group activity breaks on individual physiologic (e.g. blood pressure) and clinical (e.g. waist circumference) measures among predominantly overweight office workers at the Mexican Ministry of Health headquarters building in Mexico City, Mexico. Activity breaks were scheduled at a time convenient for all employees to participate, employees convened in the main lobby of the building to join PA breaks (or did at their workstations under supervision), and lively music was transmitted over the PA system. Annual health assessments conducted on employees (n=335) revealed, on average, significant reductions in diastolic blood pressure, weight (-1.0 kg), and waist circumference (-1.6 cm) after one year of integrating activity breaks into the organization's daily scheduling (Lara et al., 2008).

Booster Breaks. Taylor et al (2010) examined the feasibility, sustainability, and potential impacts of integrating brief bouts (15 min) of physical activity and meditation exercises (“booster breaks”) into the standard conduct of a 14-employee legal services business.

Employees participated in daily booster breaks led by a trained peer facilitator for a period of six months. One hundred and seventeen sessions were conducted over the six-month period, and monthly participation rates averaged between 76-86% of total staff. Employees significantly improved their HDL cholesterol levels and lost an average of 14 pounds at the end of the six-month period (Taylor et al., 2010).

Kaiser Permanente South Bay Medical Center (2011). Yancey et al (2012) profiled the implementation of Instant Recess® physical activity breaks within the Kaiser Permanente South Bay Medical Center, a large urban medical center located in Southern Los Angeles County, CA. Instant Recess® is an evidence-based physical activity strategy centered on the inclusion of brief 10-minute low to moderate-intensity activity bouts into organizational routine (Yancey, 2010). Over an eight month time span in 2011, Instant Recess® was launched in 12 departments of the facility, including a call center (85 employees), clinical laboratory (86 employees), and in-patient medical/surgical unit (100 employees). Implementation efforts were coordinated by the center's wellness coordinator in collaboration with unit-based teams (UBTs) comprised of departmental employees and managers charged with carrying out established departmental goals and objectives for each unit (Yancey, 2012, in press). Instant Recess® breaks were tailored to the specific needs and scheduling of each unit (e.g. use of abbreviated three minute breaks in call centers), and conducted by peer leaders within each unit.

Significant improvements in injury rates and absenteeism were reported in each of the three large departments that implemented Instant Recess® over the 8-month launch period. The call center experienced a decrease of 1.8 sick days per full time employee (FTE) (from 7.5 to 5.7), reduced accepted injury claims from 3 to 0, and reported no ergonomic injuries since the IR launch. The laboratory unit recorded a 35% decrease in injury reports between 2010 and 2011,

and also reported no ergonomic injuries. The medical/surgical unit experienced a decrease of 1.9 sick days per FTE (6.2 to 4.3), and reported no workplace injuries since the launch of IR in their unit (Yancey, 2012, in press).

These findings suggest that well planned, strategically positioned physical activity strategies can be feasible, sustainable, and yield desirable results even in high stress, time-sensitive organizational settings where productivity, customer service, and/or patient care may be prioritized above employee wellness.

Statement of the Problem

Challenges with integrating PA into organizational culture and routine. Although organizational push strategies have begun to disseminate broadly and show promise in engaging populations in physical activity, successfully implementing and sustaining these strategies long-term has been a persistent challenge for researchers and health promotion professionals (Weiner et al., 2009). Factors at the individual and organizational level have been cited as barriers to the effective adoption, implementation, maintenance, and evaluation of culture and behavioral change-oriented interventions (Rogers, 2003, Weiner et al., 2009). Examples of these factors include the organization's readiness for change, the congruence of wellness strategies to standing organizational priorities, leadership engagement, influence and decisional latitude of peer "change agents" tasked with facilitating strategies, availability of resources and time to facilitate activities, and the social climate of the organization have the potential to greatly enhance implementation, or can serve as formidable barriers to undermine implementation success (Dreisinger et al., 2011, Dzewaltowski et al., 2004, Glasgow et al., 1999, Owen et al., 2006, Weiner, 2009, Hopkins et al., 2012). Unfortunately, these organizational dynamics are rarely critically examined in the creation and administration of intervention studies, and detailed

process evaluations of these interventions are rarely published, making variability in implementation outcomes difficult to interpret (Weiner et al., 2009).

Challenges with disseminating PA strategies into the greater population. Additional challenges may emerge when attempting to broadly disseminate and implement organizational push strategies into dynamic “real world” organizational settings; particularly within the context of rigidly structured intervention control trials. Tensions may surface when structured strategies are uniformly applied to organizations (to ensure intervention fidelity) without accounting for the specific culture and climate of each organization involved. Conversely, strategies that allow for too much flexibility may not be generalizable to the greater population. This “fidelity vs. fit” tension, and its associated implementation challenges, has been documented in numerous studies (McEachan et al., 2011, Driessen et al., 2008). Efforts must be made to better understand and account for organizational context to ensure that intervention project goals and desired outcomes are consistent with the specific needs and culture of the organizations of interest. Such efforts may bring forth an “integrative validity” that strikes a balance between scientific and practical efficacy (Chen, 2010).

Having a better understanding of the factors most closely associated with successful implementation and maintenance of worksite-based physical activity strategies may improve the uptake, adherence, and sustainability of programs and interventions, thus enhancing the likelihood of positive individual and organizational-level outcomes. Furthermore, increased knowledge of the organizational dynamics and processes involved in adopting and sustaining such strategies across a diverse mix of organizational settings may inform the conduct of broader dissemination efforts. This information is of particular utility to local health departments with their budgetary constraints and ever-increasing population need and demand for services. It is

critical that health departments and other organizations select the most promising venues in which to expend limited outreach resources.

CHAPTER 2: Organizational Profile - Los Angeles County Department of Public Health

The Los Angeles County Department of Public Health (DPH) is responsible for health surveillance, health promotion, primary care, and delivering preventive health services to approximately 10 million individuals residing in 88 cities and 140 unincorporated areas within the 4,300 sq mi. land area of Los Angeles County, California (Los Angeles County Department of Public Health, 2011b). The population served by DPH is very diverse in terms of race/ethnicity, income, and education, and is home to the largest proportion of ethnic minority groups among any county in the United States (Los Angeles County Department of Public Health, 2011b).

History of Los Angeles County Department of Public Health (DPH)

Formal public health services for Los Angeles residents began with the creation of the Los Angeles City Health Department in 1879 (Cousineau and Tranquada, 2007). The Los Angeles County Health Department was founded in 1903 when the County Board of Supervisors passed an ordinance for the provision of a county public health department to serve residents of smaller cities and unincorporated areas surrounding the city of Los Angeles (Los Angeles County Department of Public Health, 2012a, Cousineau and Tranquada, 2007). The key priorities for both the city and county health departments at that time were the control of communicable diseases and indigent care. Both health departments ran concurrently until the merger of the city health department into the county health department in the 1960's (Cousineau and Tranquada, 2007). Efforts to further consolidate and integrate county services led to the merging of county departments of hospitals, public health, mental health, and the county Veterinary Office to form the Department of Health Services (DHS) in 1972 (Cousineau and Tranquada, 2007). In 2006 Public Health separated from DHS to become a freestanding

Department of Public Health (DPH) under the direction of public health director and county health officer Dr. Jonathan Fielding (Los Angeles County Department of Public Health, 2012a).

Mission and Vision

The mission of DPH is “to protect health, prevent disease, and promote health and well-being” (Los Angeles County Department of Public Health, 2011b). DPH carries out this mission through its vision of “Healthy People in Healthy Communities,” and its workforce is guided by seven core values:

- *Leadership* – “We are recognized at the local, regional, national, and international levels for our proactive, trusted, innovative, and future-oriented approach to public health.”
- *Customer Service* – “We provide outstanding customer service to both internal and external customers. We deliver our services sensitively and confidentially, with dignity and compassion.”
- *Quality* – “We are known for our efficient, effective, and responsive performance that is evidence-based, fact-based, and driven by data. We are dedicated to improving quality through performance monitoring and use of public health research and best practices.”
- *Collaboration, Coordination, and Cooperation* – “We strive to develop, sustain, and leverage participatory relationships both internally and externally. This is inherent in all that we are and all that we do.”
- *Accountability* – “We are faithful stewards of the public’s trust and the public’s funds. In fulfilling this role, we are responsive, transparent, and demonstrate integrity and honesty.”
- *Respect* – “We demonstrate respect for the diversity of people, cultures, communities, ethnicities, opinions, and ways of doing things.”

- *Professionalism* – “Our professionalism is demonstrated by a well-trained, competent workforce that is open-minded and flexible, involved in continuous learning, and performs at a high level within the scope of each person’s responsibility regardless of the circumstances.” (Los Angeles County Department of Public Health, 2011b)

In its 2008-2011 Strategic Plan, DPH identified six strategic priority areas of focus to fulfill their organizational mission and vision:

1. *Health Improvement*: Improve the quality of life in the cities and communities of Los Angeles County and increase years of healthy life among residents while reducing disparities.
2. *Health Protection*: Protect the public’s health by minimizing the impact of communicable, food borne, and environment-related illnesses.
3. *Preparedness*: Improve preparedness and readiness for the identification of and response to emergencies.
4. *Organizational Effectiveness*: Improve organizational effectiveness
5. *Workforce Excellence*: Enhance the quality and productivity of the workforce.
6. *Fiscal Accountability*: Develop fiscal strategies to support program commitments within financial targets. (Los Angeles County Department of Public Health, 2012a)

Organizational Structure and Workforce

Currently DPH boasts a workforce of over 4,000 employees operating within 39 public health programs and 14 public health clinics with offices located throughout Los Angeles County (Los Angeles County Department of Public Health, 2011b). Due to the large size of the county, DPH organizes services and surveillance efforts through four local Area Health Offices (AHOs) to reach Los Angeles County cities and residents organized into eight geographically-designated

Service Planning Areas (SPAs): Antelope Valley (SPA 1), San Fernando (SPA 2), San Gabriel Valley (SPA 3), Metro (SPA 4), West (SPA 5), South (SPA 6), East (SPA 7), and South Bay (SPA 8). This configuration allows DPH to better address the specific needs and challenges of distinct regional areas within the county. Population health services (e.g. immunization, food safety, tobacco control) and health surveillance efforts typically involve the Los Angeles County population at large, whereas personal health services and advocacy efforts (e.g. public health clinics, AIDS Policy and Programs) are often targeted to communities and populations with the highest need, usually the low-income and historically under-resourced. DPH operates with an annual budget in excess of \$850 million (Los Angeles County Department of Public Health, 2011a).

DPH employees occupy a broad array of service-oriented, technical, clinical, administrative, and managerial positions in seasonal, temporary, contract, part-time, and full-time capacities. The ethnic and socio-demographic makeup of DPH is diverse and reflective of the LA County resident population it serves. DPH has a disproportionately high percentage of female and middle aged employees compared to other LAC departments (LA County DPH Human Resources, 2008). Full-time DPH employees are generally well compensated in wage and benefits, and have union representation through Service Employees International Union (SEIU) Local 721 (LA County DPH Human Resources, 2008).

Worksite Wellness and Physical Activity Promotion within DPH.

Los Angeles County DPH has participated in employee wellness activities, both informally and formally, over the past two decades. Wellness activities for all Los Angeles County employees were first formalized with the creation of the Los Angeles County-wide Employee Wellness Program (EWP) in the mid-1990s. Administered by the Los Angeles

County Department of Human Resources (DHR) and accessible by all Los Angeles County employees, EWP offered occasional brown bag “lunch and learn” seminars, access to exercise classes in a centralized LAC administrative building, and organized an annual health fair for LAC employees. In 2003 the LAC Department of Human Resources instituted a county-wide Wellness Committee. Employees from each LAC department were appointed as “wellness managers” to convene quarterly to discuss wellness-related topics and disseminate health promotion information and materials to their department’s employees and leadership (Los Angeles County Department of Public Health, 2008).

Prompted by lackluster employee participation rates in the existing wellness program, rising concerns over increasing health insurance costs for LAC employees, and growing incidence of chronic diseases (e.g. diabetes) among employees, in 2007 the Los Angeles County Board of Supervisors ordered the LAC Chief Executive Office (CEO) and DHR to examine new strategies to improve employee health and slow the rise of health insurance costs (Los Angeles County, 2008). A joint labor agreement between the LAC Department of Human Resources, LAC employee union groups (SEIU 721 Local, Coalition of County Unions), and LAC employee health insurance carriers (Blue Cross/Anthem, Kaiser Permanente, PacifiCare) was then established to employ Cost Mitigation Goals and Objectives (CMGO) to control health care costs among LAC employees (Los Angeles County, 2008). Implementation of the CMGOs led to the reorganization of the County-wide Employee Wellness Program with the intentions of maximizing employee participation and engagement, expanding wellness offerings, including union and health plan-sponsored employee incentives, and reinvigorating communications among wellness managers belonging to the county-wide wellness committee (DPH Department

of Human Resources, 2012, Los Angeles County, 2008). Components of the new LAC Wellness Program include:

- *Wellness Fairs*: conducted up to 4 times annually through request of wellness manager, upon the approval of DHR;
- *“Lunch and Learn” seminars*: limited number offered through request of wellness manager and approval of DHR;
- *Worksite Wellness Workshops* (e.g. “Active for Life”): Conducted quarterly (upon request) in select departments throughout LAC, sponsored by employee health insurance carriers.
- *Wellness webinars*: Monthly access granted to LAC employees.
- “Health is Your Wealth”: Incentivized individual health assessment and lifestyle management programs sponsored by health insurance carriers (e.g. Kaiser HealthWorks, PacifiCare HealthCredits, etc.)
- *Countywide Fitness Challenges* (e.g. “The Biggest Loser, “ “Move Across America,”): Competitions among LAC individual work units held in 12-week cycles throughout the year, accessible to all LAC employees (Los Angeles County, 2008).

Under the revised County-wide Wellness Program wellness managers are tasked with relaying information about the county-wide programs to their departmental staff, fielding requests for seminars and other activities from their department’s work units, and submitting quarterly utilization reports to DHR (Los Angeles County, 2008).

Shortly after the reorganization of the County-wide wellness committee, DPH created its own internal wellness committee and recruited “wellness coordinators” from each DPH unit to convene regularly to discuss wellness topics and coordinate DPH employee participation in

County-wide wellness program activities (Bendana, 2008, Weathersby, 2008). Shortly thereafter in 2008, DPH created a Wellness Coordinator job position to lead the DPH wellness committee, provide general oversight to DPH sanctioned wellness activities, and maintain rapport with other LAC wellness managers and the DHR administration. In early 2012, after several months of poor attendance at wellness committee meetings, DPH Director Dr. Jonathan Fielding released a memo instructing DPH program directors to reassign their wellness committee representatives (Interview with M. Horejs, 2012). The newly formed wellness committee recently re-convened in April 2012 and discussed updates for the existing county-wide wellness programming, persistent challenges to engaging employees, and plans to implement additional wellness strategies within their work settings (e.g. incorporating *Instant Recess*[®] 10-minute physical activity breaks at meetings) (Interview with M. Horejs, 2012).

DPH Outreach to Support Physical Activity in Organizational and Community Settings

DPH has played an integral role as a strategic partner in the development, dissemination and implementation of physical activity promotion strategies to impact organizations and individuals in the greater Los Angeles County population. In 1999 under the leadership of then Director Dr. Antronette Yancey, the DPH Division of Chronic Disease and Health Promotion created *Fuel Up Lift Off!* (FULO), a 10-minute low-impact, low-to-moderate intensity group physical activity break set to up upbeat ethnically inspired music. FULO was then pilot tested for feasibility within DPH organizational meetings lasting longer than one hour and was found to be readily accepted by staff (~90% participation) (Yancey et al., 2004b). The successful feasibility study prompted DPH to produce and broadly disseminate a *FULO!* DVD and CD in 2000. Following her tenure at the Los Angeles County Department of Public Health, Dr. Yancey transitioned into a full-time faculty position at UCLA School of Public Health to continue her

work in organizational-based physical activity promotion. In 2005, DPH Director Jonathan Fielding signed a memorandum of understanding (MOU) to solidify a strategic partnership between DPH and the UCLA School of Public Health to support formative research activities and actively participate in the first and second phases of the UCLA WORKING Project, a NIH-funded organizational-level physical activity and healthy eating randomized wait-listed control intervention (see Chapter 3: Description of UCLA WORKING Project). In 2007 DPH partnered with the California Department of Public Health to introduce and film *Instant Recess*[®] (the current branding for *FULO* physical activity breaks) at a large youth fitness event held at the Rose Bowl in Pasadena, and at a biennial Childhood Obesity Conference in Anaheim, CA.

Physical activity in the workplace has been incorporated into several of DPH's health promotion outreach programs and collaborative efforts. DPH's *Get Healthy, Get Active LA!*, a multi-stakeholder driven physical activity initiative, lists "change policy at the workplace" as a strategy to increase opportunities for individuals to engage in physical activity throughout the day (Get Active Get Healthy LA!, 2010). DPH also functions as the lead agency for the Los Angeles region of the *Network for a Healthy California*, a California Department of Public Health (CDPH) funded program created to build innovative partnerships that empower low-income communities to increase fruit and vegetable consumption, physical activity, and food security with the goal of preventing obesity and other chronic diseases (Los Angeles County Department of Public Health, 2012b). DPH lists "physical activity integration" and "worksite wellness" as two of the six key areas of focus for the Network agenda, and offers "train the trainer" physical activity leader trainings, technical assistance to support PA integration, and wellness-related resources to communities and worksites throughout LA County (California Department of Public Health, 2012).

Statement of Problem within the context of DPH

Despite making considerable investments in time, personnel, and financial resources to promote physical activity wellness strategies among their own workforce and throughout the greater Los Angeles County population, DPH has faced persistent challenges in engaging high-risk individuals, modifying organizational norms to accommodate physical activity on “paid time,” and sustaining strategies long-term. These challenges have likely undermined DPH’s ability to realize robust individual, organizational, and population-level improvements in health and behavioral outcomes.

Large size and broad scope of the organization. As one of the largest departments of public health in the country, DPH contends with supporting a large and widely distributed workforce to serve the needs of a large, diverse, geographically broadly-distributed population with limited resources. The complex organization of work units and offices, multiple layers of hierarchy, and heavy bureaucracy make it difficult to diffuse information about PA strategies through the chain of command to establish broad-based support and buy-in to adopt the PA strategies. When it comes to implementing these strategies, the heavy chain of command must again be navigated to ensure that all pressing concerns have been addressed (e.g. liability/safety concerns, concerns about productivity losses) and that all employees are given opportunity to engage in PA strategies. DPH is also sensitive to external factors such as funding shortfalls and emerging health threats that may shift priorities away from physical activity and wellness promotion among the workforce and the greater population. For example, funding shortfalls caused by the 2008 economic downturn resulted in a 2.6% budget reduction for Los Angeles County in fiscal year 2008-2009, which led to a net loss of \$36 million in spending across all departments and the net loss of approximately 35 staff positions (Hammond, 2008). Such

personnel shortages may place additional strain on managers and workers, limiting their ability (or desire) to support, facilitate, and participate in wellness activities.

Fragmented and inefficient wellness infrastructure. Although LAC and DPH have capacity in place to support PA and other wellness strategies “in house,” these elements may not operate synergistically, and the strategies employed may not adequately engage employees at the highest risk of obesity and sedentariness. The LAC county-wide wellness committee is essentially a network of wellness managers charged with disseminating information about county-wide wellness efforts sponsored by the health insurance carriers. There appears to be no uniform plan action or robust two-way conversation between wellness managers and DHR administration about how to overcome organizational barriers and maximize employee uptake of the wellness strategies (Interview with M. Horejs, 2012). Also, many of the strategies readily accessible to DPH employees (e.g. “Biggest Loser”, health insurance carrier-sponsored incentive programs) are still “voluntary” in nature, rely heavily on individual motivation to secure participation, and may not provide the “nudge” often necessary to entice less motivated to participate high-risk employees that have the most to gain from wellness offerings.

Lack of clarity regarding “sanctioned” PA policies and activities. Although the 2007 revisions to the county-wide wellness program did reinvigorate interest in wellness and expand wellness opportunities to employees, there were no enforceable policies implemented that granted employees and managers non-discretionary paid time to participate in physical activity at work. Modifications to organizational practice such as clearly articulated policies can be powerful factors in determining effectiveness and sustainability of wellness endeavors especially among ethnic minority populations (Lucove et al., 2007, McNeill et al., 2006). Without standardized written policies and parameters in place to articulate what is and isn’t considered a

“sanctioned” activity, individual DPH programs and work units have resigned to implementing their own PA strategies on an informal basis. Unfortunately, these informal strategies often do not secure long-term managerial support and active participation, may not be allowed on county paid time, are often subjected to liability mitigation measures (e.g. waivers of liability), and may be scaled back or even dismissed when challenges arise. Without clearly articulated policies in place to legitimize PA strategies, employees and managers may be reluctant to prioritize participation in PA strategies such as activity breaks a “priority” activity, especially if participating may negatively affect other work priorities or cause tension with managers or leadership.

Opportunities for DPH to Address the Problem

As the primary purveyor of population-level preventive health services for the County, The Los Angeles County Department of Public Health (DPH) is in the precarious position of effectively responding to the health threats of obesity with ever diminishing funding streams, limited resources and personnel, competing health threats, and the challenges that come with serving a very large, diverse, and widely distributed population. Given the size, scope of the DPH organizational infrastructure; the established need for strategies to improve employee health and vitality among its workforce; and its ability to reach large segments of the population, DPH is in a prime position to reconfigure its internal wellness practices and effectively disseminate strategies to organizations in the greater LA County population.

The DPH workforce closely mirrors the greater LAC population in terms of diversity in racial/ethnic affiliation, age, SES, and health status, making DPH an ideal setting to test the sustainability and impact of organizational push strategies. If these strategies can be implemented to modify organizational norms and are found to be sustainable and elicit

significant health outcomes, DPH may serve as a model for best practices for other health departments and organizations locally and nationally.

CHAPTER 3: Description of the “Innovation”: UCLA WORKING Project

Overview

The UCLA Working Out Regularly to Keep Individuals Nurtured and Going Project (WORKING) is an NIH-funded cluster randomized wait-list control study designed to engage health and human services organizations and agencies in a multi-level intervention that was intended to influence organizational culture by incorporating physical activity (PA) and healthier food strategies into workplace routine. WORKING functions as a collaborative partnership between research investigators at the UCLA Fielding School of Public Health and the Los Angeles County Department of Public Health. WORKING provides training, resources, guidance, and technical support to assist worksites in implementing several key intervention strategies on non-discretionary paid time: 1) Inclusion of daily 10-minute *Instant Recess*[®] group physical activity breaks at designated times; 2) Inclusion of brief activity and/or stretch breaks during meetings over one hour in duration; 3) Provision of easily accessible, low-calorie, nutrient-rich snacks in high traffic areas of the worksite (e.g. snack basket); and 4) Provision of nutrient-rich foods and water during meetings and other agency-sponsored events involving staff. WORKING has operated in two distinct phases: 1) WORKING 1 (2005 -2008), a 3-year effort consisting of formative research activities and a 3-armed, cluster randomized wait-list control pilot study; and 2) WORKING 2 (2009 – present), a 2-armed, cluster randomized wait-list control full intervention trial. To date WORKING has collectively recruited and engaged approximately 53 agencies and organizational work units throughout Los Angeles County. The types of worksites engaged represent a diverse mix of public and private health and human services organizations: private, not for profit community based organizations (CBOs); Los Angeles County departmental agencies; county public health clinics; and community health

centers. These organizations were selected because their employees consisted primarily of ethnic minority women (e.g. African American, Latina). These women are a priority population for health promotion, and targeting this group for such efforts may lead to benefits beyond those obtained through individual or organizational level efforts, given their roles as family and community gate keepers (Yancey et al., 2004b, Yancey et al., 2006a). Study protocols for both phases of WORKING Project were approved by the institutional review boards (IRB) of UCLA and the Los Angeles County Department of Public Health.

Development of the Intervention

One year of formative research activities preceded recruitment of worksites for WORKING. A series of 22 community dialogs were held, soliciting input from a total of 188 individuals drawn from our target population (e.g. employees representing 59 health and human services organizations) to identify PA and healthy eating strategies that would be appropriate and feasible for worksite settings. A 12-member Community Investigator Team was then assembled to provide additional guidance in refining intervention strategies. The community dialogues and CIT input culminated into the creation of a multi-level intervention strategy consisting of a) compulsory ‘core’ elements considered to have the greatest feasibility and cultural congruence, based on relevant research evidence and prior experience of the investigators (Yancey et al., 2004b, Yancey et al., 2004a, Lara et al., 2008, Yancey et al., 2006a); and b) optional ‘elective’ elements to provide flexibility and a ‘menu of options’ consistent with organizational needs identified in previous studies engaging ethnic minorities (Yancey et al., 2006a, Sloane et al., 2006) (Table 3.1).

Table 3.1: WORKING intervention policies and practices

Core (push strategies required for participation)	Elective ('menu of options')
<i>Physical activity-related</i>	
Incorporate 10-min exercise breaks during lengthy meetings and at a certain time of the day, on paid time. ('Lift Offs!' or Instant Recess® breaks)	Encourage more casual attire compatible with lifestyle integration of PA
Support other individual and group exercise during the routine 'conduct of business', (e.g., walking meetings and scheduling sit-down meetings in rooms at a short distance from attendees' workspace)	Change organizational culture to promote and reward lifestyle activity, e.g., standing up at intervals, doing airline exercises in one's chair, stretching during meetings
Post stair prompts and ask managers to take the lead in using stairs instead of elevators	Provide substantive incentives for employees to walk, bike or commute to work using mass transit.
<i>Food and nutrition related</i>	
Provide a bowl of fresh fruit and healthy snacks in the reception or central congregating area	Install water fountains, coolers, or dispensers
Include healthy food choices at meetings in which refreshments are served	Install at least 50% healthy and competitively priced food choices in workplace vending machines, cafeterias, and on-site food vendor offerings
Establish health food procurement and fundraising policies for catering and conference/meeting facility menus	Include language in subcontracts mandating or providing incentives for suppliers' adoption of healthy/fit practices and policies
Replace candy/cookie jars on organizational leaders' desks with bowls of fruit or small packages of nuts (preferably unsalted) or dried fruit/nut mix	Place calorie information about products in workplace vending machines
<i>Broad policy adoption</i>	
Adopt formal written policies institutionalizing wellness practices and informal policies	Include wellness policy implementation duties in job description of senior manager and line or administrative staff, e.g., organize movement breaks, ensure food procurement policy adherence

Site Recruitment

Worksites in both the WORKING pilot study and full intervention trial were recruited through a rolling recruitment process. Worksites were identified through referral by community-based and Los Angeles County key contacts who participated in prior and concurrent research projects; referrals from worksite key contacts who had already completed the intervention; word of mouth; and direct contact through phone and e-mail communications. Worksite eligibility criteria were developed to assure feasibility of implementing the intervention and comparability between sites. Sites were considered for enrollment using several inclusion criteria: a) organizational mission focused on providing health or human services; b) significant proportion

of ethnic minority employees (e.g. African American, Latino, and/or Asian/Pacific Islander) among staff; c) staff size of 10-50 employees in a work unit; d) workers' routine were mostly sedentary; e) previous employee health promotion activities, and f) a history of providing regular staff development activities. For all sites that met the inclusion criteria, on-site presentations were scheduled to inform staff of the project, lead staff in a 10-minute PA break, address questions and comments, and gauge overall staff interest in participation. Worksite leaders and key decision-makers (e.g. managers, supervisors) from each prospective worksite were invited to participate in a brief meeting (Executive Leadership Orientation) to learn the details of the project, and address questions and concerns with the Project team. A top-ranking leader of each worksite was then asked to sign a Memorandum of Understanding (MOU) to acknowledge their buy-in and approval for their staff to participate in WORKING Project activities.

Individual and Organization-level Data Collection

Individual-level questionnaire and clinical indicator data were collected by project staff at each participating worksite during normal working hours. Data collections were conducted at baseline and 6-month follow-up for sites in both phases of the study, and an additional 12-month follow-up was conducted for some sites in the full intervention trial. Employees interested in participating in the study were individually screened to determine eligibility and obtain informed consent. Eligible individuals were given written questionnaires to complete on their own. Questionnaire items assessed demographic characteristics, self-reported health, and self-reported behaviors and perceived workplace norms related to healthy eating and physical activity. Clinical indicator assessments, including height, weight, waist circumference, resting heart rate and cardiorespiratory fitness (via heart rate recovery after a three-minute step test) were conducted in private rooms or screened areas. A gift card incentive was provided to participating

individuals at each wave of data collection.

Randomization to study groups

Worksites were grouped into cohorts based on their date of recruitment. Recruited worksites were matched by site and staff demographics (age, gender breakdown, ethnicity, workforce size, type of work) prior to being randomized to a study condition. Pilot study worksites were grouped into three cohorts (from 2006-2008), and sites from each cohort were matched into triplets and randomly assigned to three study conditions: 1) comprehensive intervention (PA and healthy eating strategies); 2) standard intervention (PA strategies only); and 3) wait-listed control (no strategies until after study period ends). Full intervention worksites have been grouped, to date, into three cohorts (2009 – present), and sites from each cohort have been matched into pairs and randomly assigned to two study conditions: 1) intervention group (PA and healthy eating strategies); and 2) wait-list control group (no strategies until the end of the intervention for their matched pair). The length of the intervention period differed between the two phases of WORKING; sites from the pilot study received a 6-month intervention, and sites from the full intervention trial received a 12-month intervention.

Program Champion Training

Following site randomization, peer leaders or ‘Program Champions’ (PCs) were recruited from each intervention site. PCs played a crucial role in implementing intervention activities at their worksite, communicating with site leadership regarding project activities and serving as liaisons to WORKING Project staff by providing regular updates on intervention implementation. PCs were identified through self-referral or co-worker recommendation. WORKING Project staff initially sought out to identify PCs with the following traits: a) enthusiasm for fitness and comfortable leading group exercise; and b) opinion leaders with social

capital within the organization, preferably with long tenures at the site. These traits characterize those of effective ‘change agents’ who may be best able to facilitate the uptake of innovations and culture-change policies within organizations (Rogers, 2003, Greenhalgh et al., 2004, Yancey, 2009). Due to difficulties in finding employees with all of these qualities, WORKING Project staff ultimately considered all employees who expressed interest and pledged their commitment to supporting the intervention activities at their worksite. Worksites were identified and PCs were recruited from different work subunits to distribute intervention tasks and maximize the reach of the intervention to all staff employees; however, WORKING Project staff deferred to organizations when it came to making final decisions about the selection of PCs.

Employees recruited as PCs participated in a half-day (4.0 hrs) interactive group training session. The core training curriculum consisted of:

- Background and rationale for the WORKING Project study
- Step-by-step interactive guide on implementing, sustaining and troubleshooting WORKING strategies at the worksite;
- Interactive PA leader training where attendees learned basic principles of exercise leadership, participated in interactive demonstrations to teach proper form and safety for common exercise-based movements (e.g. squats); were trained to lead 10-minute *Instant Recess*[®] among peers; and were assessed on their proficiency in leading safe PA breaks.

PCs from worksites assigned to the comprehensive condition in the pilot study received additional training focused on integrating healthy eating strategies into the workplace. PCs assigned to the intervention group in the full intervention trial received all portions of the training. At the completion of the training, PCs received toolkits containing additional learning aids, healthy eating cookbooks and nutrition guides, PA CDs and DVDs and an assortment of

branded incentive items (e.g. pedometers, lunch bags, water bottles) to be distributed to employees at their respective worksites.

Program champions were tasked with implementing both physical activity and healthy-eating related strategies at their worksites. The core healthy eating strategies included: 1) providing employees access to low-calorie, nutrient-rich snacks in high traffic areas of the workplace (e.g. snack basket in the break room) as an alternative to seeking out high calorie snacks elsewhere; 2) securing access to water coolers and/or bottled water; 3) encouraging management to modify healthy vending options; and 4) ensuring nutrient-rich food items were present at all meetings and events sponsored by the worksite where food was typically served. Program champions were provided training on healthy item selection and portion size control based on guidelines derived from the Dietary Approaches to Stop Hypertension (DASH) eating plan (National Heart Lung and Blood Institute, 2012). While healthy eating strategies were included in the intervention, the focus of this dissertation project is on the physical activity strategies and related outcomes.

Intervention Implementation

PCs were instructed to officially initiate or ‘kick-off’ intervention activities immediately following PC training, in order to capitalize on the initial enthusiasm present among staff and prevent time lags between data collection and the actual implementation of activities. PCs were requested and offered technical assistance to complete the following tasks during their initial “kick off” period:

- Form an internal wellness committee to delegate duties and craft a preliminary implementation plan.
- Complete a Worksite Wellness Inventory to assess their worksite’s physical layout; staff

and workplace logistics (e.g. employee shifts, designated break times, scheduled meetings); social environment (e.g. likelihood of staff to convene as group, relationships with managers); available resources (e.g. availability of break rooms, audio/visual equipment, agency funds for wellness, etc.); and potential barriers to implementation (e.g. current or anticipated high-priority tasks and projects, etc.)

- Conduct several “trial runs” of PA breaks and other strategies to “test the waters” and garner feedback from staff and managers.
- Establish contact with leadership to review the implementation plan, troubleshoot concerns, and obtain approval to officially implement the intervention strategies.

These tasks were requested of PCs to ensure that worksites had sufficient support, resources, and a clear plan of action to manage the core strategies throughout the intervention period, and to address any lingering issues or concerns from leadership. Project staff made attempts to visit each site 1–2 weeks following the PC training to offer on-site technical assistance to ensure that an implementation strategy had been created and that resources were in place to initiate the intervention.

Participating worksites were encouraged to host a “kick-off” event to draw attention to the site’s participation in WORKING, re-stimulate staff interest through raffle drawings and interactive games, spell out the implementation plans, and have all staff participate in an Instant Recess[®] break or other activity. Kick off events varied in size and scope across the worksites; some sites hosted full-scale “wellness day” events with games and prizes, while others opted to incorporate a small kick-off on the agenda of an all-staff meeting or staff development event. A top-level leadership representative from each worksite was requested to attend the kick-off event and verbalize their support for WORKING and the implementation plan. Project staff attended

most kick off events to monitor activities, take pictures and videos, and extend support to Program Champions hosting the event.

Intervention Upkeep, Monitoring, and Evaluation

Several types of monitoring and evaluation activities occur throughout the duration of each worksite's intervention period. An organizational audit "tour" is conducted by Project staff at each worksite prior to the intervention kick-off to objectively assess the physical and social environment of the worksite, make direct in-person contact with employees and key worksite decision-makers, and offer feedback to PCs in order to strengthen their implementation plans. Attempts were made to make follow-up audit tours by the end of the intervention period to objectively assess any observable changes to the physical and social environment of the worksite over time.

Following intervention kick-off, project staff made attempts to meet regularly with intervention sites (every 4–6 weeks) throughout the intervention period to provide ongoing technical assistance to PCs and to evaluate the degree of intervention implementation. These "site visits" also provided an opportunity for project staff to communicate openly with PCs and other wellness committee members to discuss: 1) broader organizational issues and factors that could impact the status of the intervention (e.g. staff layoffs, changes in leadership, etc.); 2) the progress of each core intervention strategy; 3) emerging challenges and barriers (e.g. low staff participation rates, challenges with managers supporting activities, etc.); and 4) troubleshooting solutions and brainstorming new ideas. In addition to participating in monthly site visits, PCs engaged in the full intervention trial were asked to complete brief (7 question) electronic surveys every week to report their progress on each of the core intervention strategies (e.g. number of days PA breaks hosted, number of employees at PA breaks). Between scheduled site visits with

PCs project staff provided worksites ongoing technical assistance on an “as-needed” basis. This assistance included impromptu visits to address major issues, meetings with managers and leaders to facilitate troubleshooting efforts, hosting additional PC trainings and booster trainings, and delivery of additional intervention materials (e.g. new *Instant Recess*[®] CD/DVDs, pedometers, etc.).

End of Intervention Activities

Approximately 30 days following conclusion of each worksite’s intervention period project staff hosted a ‘wrap-up session’ with PCs, managers, and leadership. During the wrap up session Project staff presented a summary of individual clinical and questionnaire data collected from employees, a summary of the process evaluation data gathered by project staff throughout the intervention period, and a list of recommendations for further developing wellness activities. Worksite representatives were encouraged to speak openly about their experiences with UCLA WORKING Project and provide suggestions as to how WORKING might best accommodate the needs of other worksites. Following the wrap-up session, private CBO worksites were delivered a cash stipend (\$1000 in pilot study; \$750 in full intervention trial) as an incentive to continue their wellness endeavors. Worksites belonging to publicly funded organizations were not allowed to accept funds and thus were not provided a cash stipend.

Current Status of UCLA WORKING Project

The second phase of the WORKING Project (WORKING 2) is currently in its fifth year in operation. Project staff are currently completing work on the third cohort of worksites, and preparing for the roll out of cohort 4. The fourth and final cohort of WORKING Project sites will be comprised of administrative work units, laboratories, and clinical care units within several hospitals and administrative buildings within the UCLA Health System in Los Angeles, CA.

CHAPTER 4: Addressing the Problem

Implementing physical activity-promoting “innovations” with the intention to change organizational norms and routine may seem simple in theory, but in reality such a task requires a dynamic, layered process. To adopt and implement innovations, one must not only consider the individuals most directly involved in facilitating the process; the structural and social environment in which the innovation is being implemented, internal and external factors that may encourage or hinder implementation, and even attributes of the innovation itself may determine how well physical activity innovations will take shape and function within an organizational setting. Ultimately, the degree to which an innovation is properly implemented, utilized, and sustained within the organization may determine whether or not the innovation will elicit desirable individual and organizational-level outcomes.

Conceptual Model

The conceptual model for this dissertation project is grounded by three published frameworks that describe key characters and factors involved in the processes of adopting, implementing, and sustaining behavioral and culture change-oriented innovations among individuals, groups, and organizations: 1) Rogers’ Diffusion of Innovation (DOI) theory (Rogers, 2003); 2) the Yancey Meta-Volition Model (MVM) (Yancey, 2009); and 3) Goodman & Steckler’s Model for Program Institutionalization (Goodman, 1989). Details reported in Hopkins et al. (2012) and other literature sources will help contextualize the constructs and domains present in this conceptual model to be relevant for health and human services organizations (Weiner, 2009, Weiner et al., 2009, Greenhalgh et al., 2004, Glasgow et al., 1999).

Rogers Diffusion of Innovations Theory. In his Diffusion of Innovations Theory, Rogers describes the process by which an innovation travels or “diffuses” through communication

channels over time to impact members of social system (Rogers, 2003). The PA strategies employed by WORKING are considered “innovations” because they could be perceived as “new and potentially advantageous ideas” by employees and leaders of the organizations (Rogers, 2003). Rogers (2003) asserts that the perceived attributes of an innovation will determine whether an individual, group, or organization will invest the time, energy and resources to implement and/or actively uptake the innovation. He cites five attributes:

- *Relative advantage*, or the degree to which an innovation is perceived as better than the idea it supersedes;
- *Compatibility*, or the degree to which an innovation is perceived as being consistent with the existing values, past experience, and needs of potential adopters;
- *Complexity*, or the degree to which an innovation is perceived as difficult to understand or use;
- *Trialability*, or the degree to which an innovation may be experimented with on a limited basis;
- *Observability*, or the degree to which the results of an innovation are visible to others.

According to Rogers (2003), if employees and leaders within health and human services organizations believe that physical activity breaks provide greater benefits to staff productivity, health, and morale than not having PA breaks (relative advantage); can be readily adapted to fit their daily routines without disrupting high-priority tasks and responsibilities (compatibility); can be easily managed with minimal resources and effort (complexity); can be explored “on a trial basis” (trialability); and can bring forth observable results such as improved energy levels and weight loss in other employees (observability), they will be supportive of implementing physical activity breaks and more likely to participate regularly.

The organization where the innovation is being introduced constitutes a social system. Rogers (2003) defines a social system as a “set of interrelated units that are engaged in joint problem solving to accomplish a common goal.” In social systems such as organizations and work units hierarchies, distinct work units, and established organizational norms and priorities create a “social structure” that must be successfully navigated in order to adopt and sustain physical activity breaks (Rogers, 2003). Rogers describes two members within social systems that are key to this navigation process; opinion leaders, and change agents. Opinion leaders such as middle managers, tenured staff members, and executive leaders are highly influential members of a social system who, regardless of their formal position or status in the system, can influence employees’ attitudes and overt behaviors due to their position at the center of the worksite’s decision-making and/or interpersonal communication network (Rogers, 2003). It is crucial to garner the support and active engagement of opinion leaders as they have the power to sanction and encourage implementation; or, if they are opposed to the idea of physical activity breaks in the workplace, build an active and potentially detrimental opposition (Rogers, 2003). Change agents, on the other hand, are individuals within or external to the social system that champion the adoption and implementation of innovations, and are tasked with encouraging other members of the system to adopt new innovations (Rogers, 2003). In the case of WORKING, employees recruited as “program champions” as well as the WORKING project staff are the change agents for physical activity break implementation. They are charged not only with educating employees about the benefits of physical activity breaks and facilitating activities; they are also responsible for swaying opinion leaders and other influential members of the organization (e.g. leaders, middle managers, skeptical or resistant employees, etc.) to legitimize physical activity breaks as a prioritized activity for the organization.

Rogers defines an organization as “a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labor (Rogers, 2003)”. Rogers (2003) posits that the innovation process in organizations occurs in a sequence of five stages: agenda setting, matching, redefining/restructuring, clarifying, and routinizing. Agenda setting and matching involve the information gathering, conceptualization, and planning necessary to “initiate” the adoption of the innovation (Rogers, 2003). Organizational leaders, WORKING Project Staff, and key contacts within the organization undergo this initiation process through a variety of activities to ensure that physical activity breaks match established needs and/or interests of the organization: staff presentations, meetings with leaders, and bidirectional sharing of information. The stages of redefining/restructuring, clarifying, and routinizing typify the actual implementation process. Once leadership has decided to formally adopt the PA strategies, an assimilation process begins; the PA strategies are modified and re-invented to fit the organization, and the organization changes to accommodate the PA strategies. As assimilation continues the relationship between the organization and the PA strategies will be tested by tensions and challenges (e.g. changes in leadership, increased employee workloads, etc) that must be “clarified” through troubleshooting efforts. Depending on how well these tensions and challenges are resolved, physical activity breaks may integrate into organizational routine and become an ongoing element in the “standard conduct of business” for the organization.

Yancey Meta-Volition Model (2009). The Yancey Meta-Volition Model describes a cascade of individual, organizational, and community-level changes that can be realized by the structural integration of brief bouts of physical activity into the organization across sectors and types of organizations (Yancey, 2009). Yancey defines meta-volition as “the collective agency or volition of early adopter leaders motivated by rising health care costs, an aging workforce,

budgetary constraints, escalating demands for service, or global competition to implement practice and policy changes in their own organizations to improve health and productivity (Yancey, 2009).” According to Yancey, influential opinion leaders within health and human services agencies must essentially “take ownership” and leverage their position within their agency to facilitate the integration of physical activity breaks and discourage sedentary behaviors such as prolonged sitting.

Yancey proposes that the dissemination of early adopter-mediated physical activity practice and policy changes occurs in six phases: initiating, catalyzing, viral marketing, accelerating, anchoring, and institutionalizing (Yancey, 2009). Efforts are typically initiated by “sparkplugs;” highly motivated, charismatic individuals and boisterous leaders within organizations that are passionate about health and wellness (Yancey, 2009). These sparkplugs utilize their social capital and/or decisional latitude within the organization to raise awareness of the benefits of integrating PA breaks and prompt organizational leaders, key decision-makers, and other employees to consider formally adopting the PA strategies. The catalyzing phase involves the active engagement of employees and key decision makers in physical activity breaks either at designated time of the workday or during long meetings and special events. These interactions build enthusiasm and demand for PA breaks among organizational members, apply pressure on leadership to legitimize PA breaks as a priority activity for the organization, and instigate “viral marketing” to other organizations or other work units within the agency through word of mouth communications (Yancey, 2009). As the dissemination process continues through the accelerating, anchoring, and institutionalization phases, leaders and key decision makers across various sectors (e.g. organization, political, community), pushed by growing social and political will for physical activity “on paid time”, will eventually adopt PA practices

and policies, grant resources and capacity to properly implement and sustain PA strategies, participate in troubleshooting, and, through verbal endorsements and role modeling, empower employees to regularly participate in PA breaks on paid time (Yancey, 2009).

Goodman and Steckler Model for Program Institutionalization (1989). The Goodman Steckler model describes the conditions necessary for innovations and health promotion programs to attain institutionalization. Goodman and Steckler (1989) describe institutionalization as the long-term survival of a health promotion program, when a program successfully “settles” into its host organization as an integrated component of the organization’s normal operations or scope of work. According to Goodman and Steckler, the following conditions must be achieved in order for physical activity breaks to be institutionalized into organizational routine:

- Strategies must integrate into employees’ “*standard operating routines*.” This entails activity breaks being introduced into staff meetings and other settings where employees can become familiar enough with the breaks to assess the costs and benefits of participating regularly in activity breaks (Goodman, 1989).
- Employees must perceive that participating in activity breaks has *greater benefits than costs*. This is achieved through employees and leaders recognizing an organization problem such as reduced employee morale or work-related stressors (*awareness*); accepting the need to address the problem (*concern*); being receptive to activity breaks as a solution to the problem (*receptivity*); having adequate access to activity breaks and clearance from superiors to participate (*availability*); and ensuring that activity breaks are led on a consistent basis by competent Program Champions who have adequate resources and abilities to troubleshoot challenges as they emerge (*adequacy*) (Goodman, 1989).

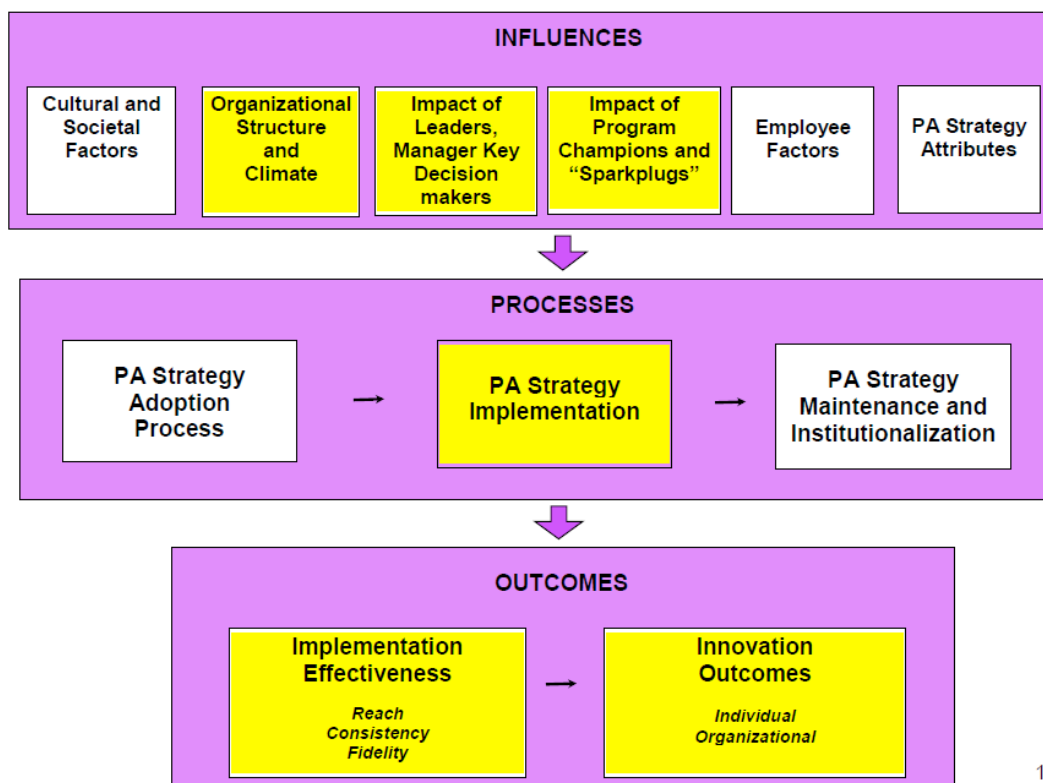
- *Coalitions* must be formed to ensure that employees' and organizational leadership's *aspirations* for the activity breaks are *aligned*. These coalitions are brokered by effective "*program champions*" who can communicate across the organizational hierarchy to voice concerns, identify barriers to implementation, troubleshoot challenges, and influence key decision makers for the organization (Goodman, 1989).
- *A mutual adaptation of the norms* of the organization and the norms of the activity breaks must be established. An equilibrium must exist where the activity breaks have been sufficiently adapted to best fit the needs and demands of the organization (e.g. activity breaks at a designated time), and likewise the organization has made reasonable accommodations to support the activity breaks (e.g. activity breaks as a standing line item on staff meeting agendas) (Goodman, 1989).
- *Organizational fit* must be confirmed. Activity breaks must be compatible with the organization's mission and/or core operations. If activity breaks and other PA strategies align with an organization's mission statement (e.g. "fostering healthy behaviors among Los Angeles County residents") or are found to assist an organization in realizing its mission (e.g. improving employees' morale and energy levels to better manage stressful, time-sensitive workloads), organizational fit is confirmed and the likelihood of institutionalization improves. Conversely, if physical activity breaks do not align with the mission and standing priorities of the organization organizational fit will be poor and institutionalization of activity breaks is highly unlikely (Goodman, 1989).

Description of the Primary Model

The primary model for this dissertation aims to merge and contextualize relevant domains from the Rogers, Yancey, Steckler models to explain 1) how physical activity breaks are

implemented into health and human services organizations, 2) which individual, organizational, and societal/cultural factors most strongly impact implementation, and 3) how the degree of implementation may determine how effective physical activity breaks on paid time are at eliciting favorable individual and organizational-level outcomes. The model is composed of 3 broad domains: influences, processes, and outcomes. An abbreviated version of the model is displayed below (see Figure 4.1), and an expanded version on the model can be found in the Appendix (Appendix A).

Figure 4.1: Integrating Physical Activity Breaks into Health and Human Services Organizations (Conceptual Model)



Influences across several levels may determine an organization’s motivation and ability to adopt, properly implement, and sustain physical activity breaks (Greenhalgh et al., 2004).

Organizational structure and climate refers to the structural, operational, and cultural

characteristics of the organization that must be taken into consideration when implementing policies and practices that support physical activity breaks on paid time (Greenhalgh et al., 2004). Of these characteristics, “organizational readiness for change” is particularly important. Weiner (2009) defines organizational readiness for change as “the extent to which employees and leaders are psychologically and behaviorally prepared to make the organizational changes necessary to put an innovation into practice and support its use (Weiner, 2009).” Because implementing physical activity breaks requires collective action and involvement of all members of the organization, implementation problems may arise when certain employees and leaders are “on board” for change and others resist or resent norm changes (Weiner, 2009).

The impact of leaders and key decision makers is crucial to the adoption and implementation of physical activity breaks. Endorsement, buy-in, and involvement from leaders is necessary to adopt and enforce new practices and policies; secure resources to maintain policies; troubleshoot major challenges; and empower line-staff employees to participate regularly (Yancey, 2009). Especially in large hierarchical organizations, leaders at multiple levels of influence (top-level executive, and mid-level managers and supervisors) can exert influence on employees and other leaders to encourage or discourage physical activity break implementation (Birken et al., 2012). The role of middle managers may be particularly salient when implementing physical activity breaks because middle managers often have the most direct contact with front line staff, can exercise some decision-making power, and are tasked with ensuring the day-to-day priority tasks for the organization are being carried out. Birken et al (2012) identified four roles middle managers may carry out to support innovation implementation: 1) diffuse information about the innovation to employees; 2) synthesize and interpret information about innovations to be most relevant to organizations and employees; 3)

mediate between strategy and day-to-day activities to give employees the tools and opportunities necessary to implement innovations; and 4) sell innovation implementation to employees through verbal encouragement and role modeling (Birken et al., 2012). Middle managers' commitment to support and participate in physical activity breaks may help establish an implementation climate that rewards employees' participation in activity breaks and influences other managers and leaders to consider activity breaks as a priority for the organization. Conversely, middle managers' failure to support by speaking negatively of physical activity breaks, withholding information about policies that allow employees paid time to participate in breaks, and preventing frontline staff from participating in activity breaks can potentially derail implementation efforts (Birken et al., 2012).

“Program Champions” and “sparkplugs” are employees within the organization tasked with 1) instigating enthusiasm and “buzz” among employees to participate in physical activity breaks; 2) scheduling, advertising, and leading daily physical activity breaks and breaks at meetings; 3) brainstorming new ideas and strategies to keep employees engaged; and 4) serving as first responders to challenges that emerge (Rogers, 2003, Yancey, 2009, Yancey, 2010, Greenhalgh et al., 2004). Program champions and “sparkplugs” who have flexible job schedules, the ability to exercise decisional latitude, and maintain rapport with leaders and key decision-makers may be best suited to support the implementation of WORKING PA strategies (Hopkins et al., 2012).

Finally, the nature of the innovation itself may lend to successful adoption and implementation. If physical activity breaks are perceived to be useful and beneficial to employees (especially if they enjoy immediate as well as longer-term benefits) and are

introduced into organizational routine as “priority” or “default” activities, there may be a stronger likelihood of successful implementation (Rogers, 2003).

The processes of innovation adoption, implementation, and institutionalization in organizational settings are related, yet distinct. Rogers (2003) defines adoption as “a decision to make full use of an innovation as the best course of action. Implementation, on the other hand, moves beyond the “thinking and deciding” process of adoption and involves the intentional, collective behavioral and structural change an organization undergoes as an innovation is put into practice (Rogers, 2003, Weiner et al., 2009). Institutionalization is the ultimate goal when implementing PA strategies; however, the process of institutionalization requires much energy and is highly dependent on how physical activity breaks are perceived by employees and leaders, individual aspirations of employees and leaders, and the climate of the organization (Goodman, 1989). Each of the processes stated above are dynamic and involve action at all levels of organizational hierarchy.

Adoption of organizational push strategies is typically instigated by the efforts of highly motivated “champions” who raise awareness of the perceived benefits of the innovations, and prompt organizational leaders, key decision-makers, and other employees to consider adopting policies that support physical activity breaks on paid time. Organizational leaders will then assess whether physical activity breaks align with organizational needs and standing priorities, and choose to either formally adopt the strategies (e.g. by verbal endorsement, or writing an enforceable policy memo), or not.

Once the PA break policies have been vetted and sanctioned by leadership, implementation typically begins. This process starts with securing change agent champions to create capacity within the organization (e.g. worksite wellness committee) to carry out the

activity breaks and ensure their sustainability. Once capacity has been built, both the physical activity breaks and the organization undergo an assimilation process that should result in achievement of an acceptable level of operational, cultural, and strategic fit (Weiner et al., 2009, Rogers, 2003, Goodman, 1989). The degree to which members of the organization are willing to adapt the PA strategies to fit their organizational needs and preferences (e.g. ensuring access to activity breaks is equitable for all employees, identifying employees' preferences for activity options, etc.) may impact how consistently employees participate in physical activity breaks (Hopkins et al., 2012). As these strategies continue to be implemented into organizational routine, Program Champions will likely encounter situational and organizational challenges (e.g. shifting organizational priorities, staff turnover, etc.) that threaten participation rates and the consistency of physical activity breaks. These challenges will require troubleshooting efforts to sustain participation rates and ensure that physical activity breaks remain “on the radar” of the organization. If these challenges are successfully resolved, implementation will continue; if not, the physical activity breaks may fall out of favor among staff and result in drops in participation or even total lapses in activity (Hopkins et al., 2012).

Organizations may realize outcomes related specifically to the implementation process (implementation effectiveness) as well as individual and organizational level outcomes (innovation effectiveness and feasibility). Birken et al (2012) defines implementation effectiveness as “the aggregate, organizational-level consistency and quality of targeted organizational members’ use of an innovation.” Implementation effectiveness can be determined by measuring *reach* (proportion of staff who actively participate in activity breaks); *consistency* (frequency of activity breaks conducted by Program Champions, and frequency with which staff participate); and *fidelity* (degree to which physical activity breaks are fully integrated into

organizational routine without major lapses or deficiencies) (Steckler and Linnan, 2002).

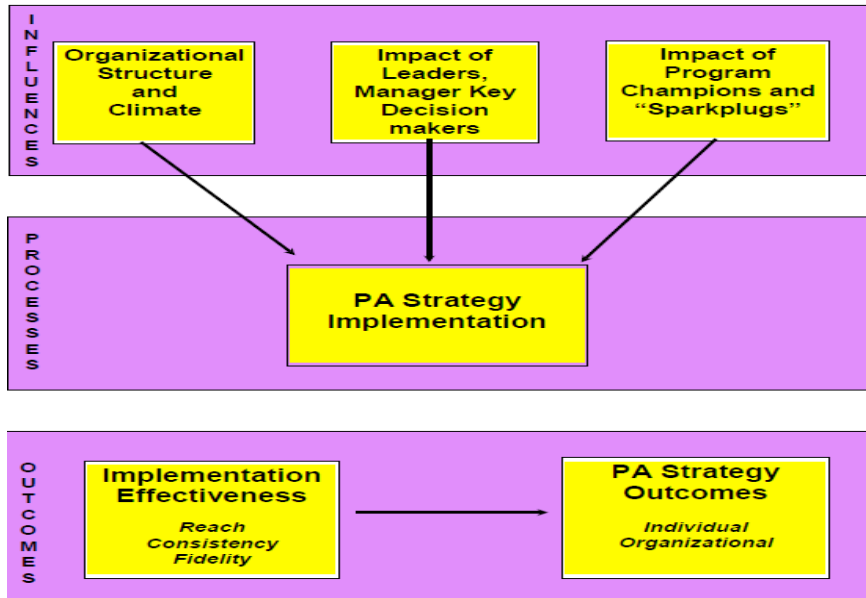
Individual-level outcomes refer to the clinical (e.g. blood pressure), clinical (e.g. waist/weight maintenance), attitudinal (e.g. self-efficacy to participate in PA), perceptions (e.g., improvements in mood, energy, alertness, concentration, cognitive functioning), and behavioral (e.g. PA levels) outcomes that employees can realize through actively participating in the physical activity breaks on a regular basis. The robustness of these outcomes will depend on how successful the organization was in implementing the PA strategies, and how well PA strategies at work “spilled over” to instigate behavioral changes outside of work hours. Organizational-level outcomes refer to potential benefits for the organization: improved productivity, reduced absenteeism, improved mood and staff morale, work injury reduction, improved co-worker support for PA, increase in number of recognized physical activity and other wellness policies and practices, etc.

Addressing the Problem: Research Questions

Although several constructs found in the primary conceptual model will be explored, this dissertation will focus on exploring four key relationships found in the model (Figure 4.2):

1. Relationship between the degree of implementation effectiveness and individual and organizational-level outcomes;
2. Motivations, roles and actions middle manager decision makers in the implementation process
3. Motivations, roles, and actions of Program Champions in the implementation process
4. Observed and perceived organizational and contextual factors related to implementation success and failure.

Figure 4.2: Key Relationships to be explored in dissertation



For this project I will analyze data collected at the individual and organizational level, review process evaluation data, garner additional insights through key informant interviews, and synthesize knowledge to address the following statements:

- Do organizations that most fully and sustainably implement PA strategies realize more robust and positive effects on individual and organizational outcomes than sites less successful at implementing such strategies?
- What are the motivations, roles, and actions of middle manager leaders in the process of implementing PA strategies at their worksites?
- What are the motivations, roles, and actions of Program Champions and “sparkplugs” in the process of implementing PA strategies at their worksites?
- Which organizational, individual, and contextual factors appear to be most beneficial to the implementation of PA strategies in organizational settings?
- Which organizational, individual, and contextual factors may have a deleterious effect on implementing PA strategies in organizational settings?

The culminating deliverable for this project will be a summary of recommendations intended to inform the future direction of DPH and other organizations in their efforts to 1) best integrate physical activity “active-by-default” or “push” policies and practices into the fabric of their own

organizational functioning; 2) assess the readiness of other organizations to adopt and implement these policies and practices; and 3) effectively disseminate resources and knowledge to support the uptake and sustainability of physical activity push strategies in other organizations broadly.

Specific Aims

SPECIFIC AIM #1. Goal: To describe the process of PA strategy implementation, explore the role of worksite middle managers and Program Champions in the implementation process, and identify factors that encouraged or impeded the implementation of PA strategies.

- a) Review WORKING Project process evaluation data to better understand the process organizations took to implement and sustain PA strategies, and identify factors associated with implementation success and failure.
- b) Conduct key informant interviews with select middle manager leaders and Program Champions at organizations that participated in the WORKING Project to obtain in-depth knowledge of their specific roles and actions throughout the implementation process, and identify factors that they perceived to be related to successful (and unsuccessful) implementation.

SPECIFIC AIM #2. Goal: To identify associations between the degree of implementation effectiveness and individual/organizational outcomes among employees and organizations that participated in the UCLA WORKING Project:

- a) Compare “change over time” values for select individual and organizational-level PA-related outcomes across four implementation success categories, and note any remarkable differences.

SPECIFIC AIM #3. Goal: Synthesize findings from Specific Aims 1 and 2 to create “best practices” recommendations to inform:

- a) Los Angeles County DPH's efforts to integrate activity breaks as a "standard conduct of business" within its own work units,
- b) Los Angeles County DPH's choice of dissemination strategies in its outreach efforts to community partners to promote the integration of activity breaks into other organizational settings throughout the County.

CHAPTER 5: Methods

Overview

A mixed methods approach was used to: 1) assess how well worksites implemented the core physical activity intervention strategies of the UCLA WORKING Project; 2) explore the roles, actions, and motivations of program champions and middle managers involved in the implementation process within their respective worksites; 3) identify barriers and facilitators to implementation; and 4) investigate associations between worksites' degree of implementation success and selected individual and organizational-level physical activity-related outcomes.

Participants and organizations from both the pilot study and full intervention trial phases of the WORKING Project were included in this research. Process evaluation notes and observations were collected on 24 worksites assigned to an active intervention condition in each of the two phases of the WORKING Project. These data were consolidated into descriptive intervention summaries that described the implementation process each worksite undertook and highlighted significant facilitators, barriers, and factors associated with implementation. These intervention summaries were used to determine how well each worksite implemented the core WORKING intervention strategies. Worksites were assigned to four "implementation success" categories based on three defining criteria (Hopkins et al., 2012).

A total of 13 key informants representing worksites classified as belonging to one of the four implementation categories were recruited to complete semi-structured key informant phone interviews to learn more about their roles and actions in the implementation process. Interviews were audio-recorded, transcribed, and the responses were analyzed. Interviews were then triangulated with intervention summaries and other process evaluation notes to further describe and contextualize relevant themes, trends, and factors associated with implementation.

A voluntary sample of employees from each worksite who enrolled in the WORKING Project completed a battery of clinical assessments and a 99-item pencil and paper physical activity and healthy eating habits questionnaire at baseline and 6-month follow-up. Representatives from three levels of organizational hierarchy within each organization were requested to complete an organizational wellness assessment at baseline and 6-month follow-up. Key variables of interest were selected from each assessment, matched across both data sets, and merged into a single data set for analysis. Descriptive statistics were conducted to determine differences in demographics between pilot study and full intervention participants, as well differences between participants who were grouped into each of the four implementation success categories according to their worksite classification. A series of regression analyses were conducted to determine if participants employed at worksites assigned to the most successful implementation category (model adopters) had greater improvements over time in selected individual and organizational-level physical activity related outcomes.

Description of the Study Population

All organizational, individual, and key informant data analyzed in this project were collected from employees and organizations enrolled in the NIH-funded UCLA WORKING Project between 2005 and 2012. Within this time frame WORKING operated in two distinct phases: WORKING I Pilot Study (2005-2008); and the first two cohorts of the WORKING 2 Full Intervention Trial (2009 -2012). A total of 42 worksites across both phases of WORKING were included in this dissertation project based on the identified parameters.

Several differences in the structure and design of the two study phases must be noted. The WORKING 1 Pilot Study involved one year of formative research followed by a three-armed, wait-list control pilot cluster-randomized intervention involving 25 organizations and

work units. Worksites were grouped into three cohorts based on their date of recruitment. Worksites recruited into each cohort were demographically and organizationally matched into triplets and randomly assigned within each triplet to one of three study conditions: standard (PA only); comprehensive (PA + healthy eating strategies); and wait-list control (no intervention). Worksites recruited to an active intervention group implemented strategies for a total of six months. The design of the pilot study was longitudinal in nature; participants recruited for data collection were assessed at baseline, and attempts were made to assess the same participants again at 6-month follow-up.

The WORKING 2 trial, on the other hand, was conducted as a 2-armed, wait-list control cluster-randomized intervention. The first two cohorts of recruited sites from WORKING-2 were included in this project. A total of 16 worksites were matched into pairs and randomly assigned to two study arms: intervention, and wait-list control. The intervention period spanned 12 months for WORKING 2. The design of WORKING 2 was more cross-sectional in nature; although project staff made attempts to collect data on the same participants at each wave of data collection, new participants were also allowed into the study at each wave.

Despite the differences in study design, a diverse mix of health and human services organizations were recruited to participate in both phases of the study. Worksites included private non-profit community based organizations (CBOs), public Los Angeles County (LAC) and LAC Department of Public Health (DPH) organizational work units, county public health clinics, and community health clinics (CHCs) across the 4,000 square mile area of Los Angeles County (Table 5.1).

Table 5.1: Breakdown of enrolled WORKING sites by type

Type of Worksite	Total
Private non-profit CBOs	16
LAC/DPH program work units	13
DPH public health clinics	10
Private Community Health Clinics	2
Other (elementary school)	1
Total	42

These worksites were recruited to WORKING in part because of their high proportions of ethnic minority employees, their mission to provide vital services to vulnerable ethnic minority and underserved populations, their high proportion of sedentary work positions (e.g. clerical/admin staff), and their initial enthusiasm to participate in worksite wellness programming. Employees were predominantly female, African American or Latino in heritage, middle-aged, and overweight or obese. Worksites ranged in staff size from 6 – 315 employees, and a number of worksites operated from two or more distinct locations (Table 5.2 and 5.3 in Tables).

Specific Aim 1: Examination of Qualitative Process Evaluation Data and Key Informant Interviews

Process Evaluation Data Collection:

Worksites randomly assigned to an active intervention group were monitored and evaluated throughout the duration of their intervention period (6 months for pilot worksites; 12 months for full intervention worksites). Process evaluation data and other observations collected by WORKING Project staff described in detail the implementation process at each worksite, highlighted roles and actions of employees intimately involved in the implementation process, highlighted major implementation successes and challenges, and assessed implementation

outcomes (e.g. number of PA breaks conducted per week, participation rates, etc.) These data were obtained from several sources:

- *Environmental audits* conducted at the onset of each worksite's implementation process;
- *Informal audits and observations* conducted sporadically through worksites' intervention periods;
- *Phone calls and e-mails* exchanged between WORKING project staff and worksite key contacts (e.g. program champions, managers, administrative assistants for executive leadership, etc.) throughout worksites' intervention periods;
- Notes gathered during *technical assistance requests and special events* where WORKING Project staff were invited (e.g. "kick off" events, wellness seminars);
- *Field notes gathered during scheduled site visits* and wellness committee meetings with program champions throughout worksites' intervention periods;
- Notes gathered during *end of intervention "wrap up sessions"* involving WORKING Project staff, worksite program champions, and leadership representatives; and
- Brief *weekly check-in surveys* e-mailed to worksite program champions (used during full intervention trial only).

Process data were obtained from 24 worksites (15 from pilot study, 9 from full intervention trial) and analyzed for this dissertation project.

Environmental audits and subjective observations. Observable changes to the physical and social environment of each worksite were assessed through formal environmental audits, and observations made during routine site visits. The environmental audit tool used to capture observations made was a simple printed document, adapted from a prior research project (Yancey et al., 2006a) (Appendix B). The tool was administered by WORKING Project staff to

assess key physical and social environment attributes relevant to healthy eating and PA: physical layout of the worksite; availability of outdoor spaces for walking or PA, presence of cafeterias, kitchens and employee break areas; presence and content of snack baskets, vending machines and other food sources readily accessible to staff; availability of water coolers and fountains, presence of stairs and posted stair prompts and visibility of promotional materials encouraging healthy eating and physical activity. PA breaks that occurred during the visit were also documented. All intervention sites received an environmental audit prior to intervention implementation (baseline), and attempts were made to conduct follow-up audits by the end of their respective intervention periods (6 months for pilot sites, 12 months for full intervention trial sites). Formal environmental audits were supplemented with environmental observations made by team members during regular site visits that occurred every 4–6 weeks throughout each worksite’s intervention period.

“Wellness Committee” site visits. WORKING Project staff met program champions (PCs) and other wellness committee members approximately every 4-6 weeks throughout each site’s intervention period. Via conversations with PCs, site visits focused on assessing the progress of each core intervention strategy (e.g. daily *Instant Recess*[®] breaks, breaks at meetings); identifying additional components implemented; brainstorming and vetting new ideas; identifying barriers; and troubleshooting solutions to challenges. PCs were also asked to discuss their interactions with leadership and key decision-makers, lapses in intervention activities, and any organizational issues that may have impacted implementation of the core strategies (e.g. staff layoffs, changes in leadership, major priority shifts for the organization, etc.). Site visits were scheduled to accommodate the availability of all PCs; therefore, nearly all PCs from a particular site attended each site visit. During the visits WORKING Project staff

worked to establish a collegial rapport with program champions and create a “safe space” where program champions could speak candidly about their experiences and vocalize any sensitive challenges they were facing. A simple printed form was created to capture data collected during site visits (Appendix C).

Weekly check-in surveys. Midway through the full intervention trial phase of the study (WORKING 2), process evaluation procedures were expanded to include weekly check-in survey and survey analytics. Brief surveys (3-5 minutes to complete) were e-mailed to worksite program champions at the beginning of each week to document daily participation in PA breaks, presence of PA breaks at organizational meetings, and the status of healthy food offerings at the site for the prior week (Appendix D). Program champions were instructed to designate one person to complete the survey each week. Follow-up calls were placed to worksites at the end of each week to gather outstanding surveys, confirm responses, and gather additional information. Data from weekly check-in surveys (e.g. # of PA breaks conducted, etc.) were entered into an intervention progress database.

Creation of intervention summaries. Data from environmental audits, field notes, weekly check-in surveys, phone/e-mail correspondence, and other sources were compiled into an intervention summary for each worksite. These summaries consolidated and organized the large volume of data collected from each site throughout its intervention period, and allowed for comparisons across intervention sites. The intervention summaries contained (i) background information and demographics for each site (e.g. staff size), (ii) a summary of major organizational-level changes that occurred during the intervention (e.g. layoffs, changes in leadership), (iii) summary of key physical environment observations from audits and site visit notes, (iv) summary of initial implementation and “kick-off” activities, (v) a chronological

summary of details and progress notes for the implementation of each of the core intervention strategies across the course of the intervention period, (vi) descriptions of any ‘elective’ strategies and site-specific innovations implemented, and (vii) a summary of persistent challenges faced, and the efforts made to troubleshoot the challenges (Appendix E). Members of the WORKING Project intervention team worked collaboratively to construct, review, and revise the summaries to ensure the most pertinent data from each worksite were accounted for. The intervention summaries were then used to assess how well each site implemented the strategies.

Evaluation of implementation success

Each core strategy that worksites were instructed to implement was evaluated independently: a) daily 10-minute physical activity breaks on paid time; b) inclusion of activity breaks during meetings lasting over one hour; c) provision of healthy snack items (e.g. “snack baskets”) accessible to employees throughout the work day; and d) provision of nutrient-rich, low-calorie snacks and food offerings at sponsored events and meetings where food was typically provided. Worksites assigned to the standard intervention group in the pilot study were only evaluated for physical activity-related strategies. If a particular strategy was not applicable to a worksite (e.g. worksite did not host meetings over one hour), it was not factored into the evaluation process.

The criteria used to evaluate implementation success were developed at the conclusion of the pilot study (Hopkins et al., 2012) and carried forward to evaluate worksites enrolled in the full intervention trial. These criteria were not established by way of pre-determined a priori classifications; they were developed empirically by thoroughly reviewing worksites’ process evaluation data and deciding qualitatively which process outcomes best illustrated how well worksites implemented and sustained the core intervention strategies throughout their

intervention period. The criteria were first conceived by members of the WORKING intervention team and then vetted by study investigators. The selected criteria reflected three aspects of the implementation process (Table 5.4). Worksites were scored (+) if they fulfilled the implementation criteria and (0) if the criteria were not sufficiently met.

Table 5.4: Criteria for determining implementation success

Criteria	Scoring
1. <i>Initiation of the intervention strategy</i> : Did the worksite implement the strategy? Did the program champions and wellness committee initiate the strategy beyond the planning stages?	<ul style="list-style-type: none"> • If PCs actively implemented the strategy, (+) • If PCs did not initiate the strategy beyond the planning stages, (0)
2. <i>Lapses in activity</i> : Did the worksite continue the strategy without any major lapses in activity ? Were there any significant drops in activity or absolute lapses for the given strategy?	<ul style="list-style-type: none"> • If strategy was implemented without any major lapses or drops in participation, (+) • If strategy endured major lapses and drops in participation, (0)
3. <i>Sustainability to end of intervention period</i> : Did the worksite sustain the strategy until the end of the intervention period ? Did the strategy “survive” the intervention, or did it “die out” by the end of the intervention period?	<ul style="list-style-type: none"> • If strategy was present in some capacity at the end of the intervention, (+) • If strategy was not present at the end of the intervention, (0)

An overall judgment derived from a comprehensive review of data from each worksite (e.g., intervention summaries, phone/e-mail logs, check-in surveys, etc.) was carefully made by WORKING intervention team members in scoring each core intervention strategy. After each pilot study intervention worksite was scored, their intervention summaries were again reviewed to identify common trends and occurrences within each worksite’s implementation process. These common trends and occurrences along with the criteria scores were used to create four descriptive implementation success categories. The category names were based loosely on Rogers Diffusion of Innovations (2003) adoption classifications: “model adopters,” “fair adopters,” “poor adopters,” and “wipeouts” (Table 5.5).

Table 5.5: Implementation Success Categories

Success Category	Description
“Model adopters”	Model adopter sites were the most successful at implementing the core intervention strategies. Model adopters implemented most or all core strategies, successfully managed strategies with few if any major lapses in activity, and sustained strategies throughout the intervention period.
“Fair adopters”	Fair adopter sites implemented most or all core intervention strategies, but endured significant lapses in activity and/or drops in participation. Despite these lapses, fair adopters sustained activities at some capacity until the end of the intervention.
“Poor adopters”	Poor adopters had difficulty implementing one or more of the core strategies. Significant, major lapses in activity were present throughout the intervention period, and not all strategies originally implemented were present at the end of the intervention.
“Wipeouts”	Wipeout sites initially implemented most or all of the core intervention strategies. However, due to a number of organizational and situational circumstances, these sites endured major challenges that inhibited the sustainability of nearly all of the strategies implemented at the start of their intervention period. Few, if any strategies remained at the end of the intervention period.

Each pilot study worksite was classified according to an implementation success category. The same criteria and categories were used to classify sites recruited for the full intervention trial according to their degree of implementation success.

Identification of Emerging Themes, Facilitators, and Barriers to Implementation Success

Following the assignment of worksites to implementation success categories, descriptive case study narratives were written for the most and least successful worksites (Hopkins et al., 2012). Common themes and factors that appeared to be associated with implementation success (or lack of success) emerged in the process of writing the narratives. Once the narratives were completed the intervention summaries of all participating worksites were once again reviewed to identify common themes and trends. The first complete review of pilot study worksites conducted by Hopkins et al (2012) identified six common organizational and intervention-related factors associated with implementation success: i) worksite layout and social climate; (ii) pre-existing wellness infrastructure; iii) number of program champions; iv) engagement and influence of program champions; v) engagement and influence of leadership; and vi) innovation

and creativity in tailoring strategies to maximize organizational fit (Hopkins et al., 2012).

Worksites engaged in the full intervention trial were reviewed in the same fashion as the pilot study worksites to identify additional common themes, trends, and factors related to implementation.

Rationale for Key Informant Interviews

Semi-structured interviews were conducted with selected key informants from worksites that completed the WORKING Project in order to a) clarify and contextualize major findings and insights gathered from the process evaluation data; b) expound on topics that may not have been thoroughly examined in the intervention evaluation process; c) explore the roles and actions of key personnel involved in the implementation process (e.g. program champions, middle managers); and d) gain a better understanding of what employees felt were the most significant organizational and cultural factors associated with successful (or unsuccessful) implementation of the physical activity strategies at their worksite.

A prime example of a topic alluded to in the process evaluation data but not explicitly investigated as part of the intervention evaluation was the role and actions of middle management “key decision-makers” and their influence on the implementation process. The process evaluation data gathered by WORKING project staff suggested that middle managers could be both advantageous and detrimental to implementation; however, middle managers were not specifically engaged as part of the intervention evaluation activities. Birken et al (2012) explains that mid-level managers may serve a vital role in encouraging innovation implementation in healthcare settings, and stresses the importance of their active engagement in innovation implementation and evaluation activities (Birken et al., 2012). The intention in interviewing middle managers was to gain detailed information on how middle managers

operated within their work settings to diffuse information and interpret priorities, and how they specifically contributed to the implementation process at participating worksites. Information drawn from the key informants may supply details that may have been overlooked during the process evaluation activities, and may help to contextualize trends and themes that emerged in the process data but lacked solid foundation.

Recruitment and Selection of Key Informants

Employees who were present during the intervention period for their worksite were solicited and asked to volunteer as key informants and complete a semi-structured 30-45 minute informational phone interview. Two types of employees were selected for recruitment:

- Mid-level program managers and supervisors (“middle managers”): Employees tasked with supervising or managing the efforts of front-line staff employees to ensure key organizational tasks and priorities were carried out.
- “Program Champions”: Employees who volunteered as “Program Champions” when their worksite was actively involved in the WORKING Project study. Program Champions were trained by WORKING Project staff to implement and sustain physical activity strategies at their worksite.

These informants were selected because they had the most consistent contact with front-line staff throughout the intervention period, and (in most cases) they were most intimately involved in the implementation process at their worksite. The goal of recruitment was to select one pair of informants belonging to a worksite classified to each of the four implementation success categories (total of 8 interviews; 4 with PCs, and 4 with middle managers). The following inclusion criteria were used to screen prospective key informants:

1. Informants must be currently employed full-time at a worksite that participated in the UCLA WORKING Project and implemented physical activity strategies on non-discretionary paid time.
2. Informants must self-identify as either a middle management leader (e.g. supervisor, program manager, coordinator), or had been an employee trained as a “Program Champion” when their worksite was involved in the WORKING Project.
3. Informants must have been employed at the organization when WORKING physical activity strategies were initially adopted and implemented at their worksite.
4. Informants must have completed their participation in WORKING Project activities.

Preference was given to recruiting informants from worksites that most recently completed the WORKING Project or were still maintaining some type of PA at their worksite. This was done to ensure informants were still familiar with the implementation process that their worksite undertook as part of WORKING. Informants were recruited by direct contact and word of mouth referrals. Prospective informants and key contacts from each worksite that was assigned to an active intervention group were contacted via-email (Appendix E) and provided information about the key informant interviews (Appendix F). Follow-up phone calls were placed 3-4 days after the initial e-mail was sent. During these calls prospective informants were screened for eligibility and asked to participate. All employees who agreed to participate were sent an electronic informed consent form (Appendix G) via e-mail and were scheduled for their interview. The day before each scheduled interview participants were sent reminder e-mails and a copy of the interview guide. A number of middle manager informants were recruited through referral by a program champion or key contact at their site who was initially contacted for an interview.

Development of Key Informant Interview Guides.

Interview guides were created to ensure that each interview covered pertinent topics of interest in sufficient detail. Separate interview guides were created for program champion (Appendix H) and middle manager (Appendix I) informants. The broad domains for each interview tracked several constructs presented in the dissertation conceptual model (refer to Figure 4.1). The middle manager interview guide also included questions about middle managers’ specific job duties, and their role in diffusing information and carrying out prioritized activities for their worksite (Table 5.6).

Table 5.6: Domains and topics covered in the key informant interview guides

Construct From Conceptual Model	Domain Name In Key Informant Interview Guide	Topics Covered
Influences: Organizational Structure and Climate	Perceptions and Motivations	<ul style="list-style-type: none"> Organizational fit Motivation to support implementation
Influences: Impact of Leaders, Managers, and Key Decision makers	Roles and Actions of Middle Managers (middle manager interview guide)	<ul style="list-style-type: none"> Communication channels and diffusing information Synthesizing and interpreting information Agenda setting Selling innovation implementation Perceived responsibilities Challenges in supporting implementation
Influences: Impact of Program Champions and “Sparkplugs”	Roles and Actions of Program Champions (program champion interview guide)	<ul style="list-style-type: none"> Perceived responsibilities Motivating employees to uptake strategies Troubleshooting challenges Communications with managers and leaders Challenges in supporting implementation
Processes: PA Strategy Implementation	Facilitators and Barriers to Implementation	<ul style="list-style-type: none"> Organizational advantages and assets Organizational challenges and barriers
Processes: PA Strategy Maintenance and Institutionalization	Sustainability and Institutionalization	<ul style="list-style-type: none"> Efforts take or needed to secure long-term sustainability and institutionalization (leaders, PCs, employees)
Outcomes: Implementation Effectiveness	Perceived Outcomes	<ul style="list-style-type: none"> Significant individual and organizational outcomes

		identified
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Administration of Key Informant Interviews.

Key informant interviews were conducted over a three-week period from June-July 2012. Prior to each informant's interview, their worksite's intervention summary was briefly reviewed and specific topics of interest were selected to be elaborated further in the interview (e.g. specific challenge faced during implementation, unique interaction with middle manager or leadership official). Each semi-structured interview lasted approximately 30-45 minutes. Key informants and the interviewer (J. Hopkins) convened via conference call, using a phone line that was audio-recorded, and a secondary recording was made with a handheld recorder. Participants were read a brief introductory prompt, informed that the interview would be recorded, and were asked to answer a series of open-ended questions. A conversational style of interviewing was used to establish a comfortable rapport with the informant and facilitate the flow of communication. Each informant was sent a thank you e-mail and received a \$20.00 gift card incentive for their participation.

Each informant was assigned a unique numeric identifier, and each interview recording was stored in a password-protected file. A master database with informant names, their contact information, and their numeric identifiers were maintained in a password-protected electronic file. The interview recordings were uploaded to an independent service for transcription (Yakwrite Transcription Services, <http://www.yakwrite.com>). Electronic copies of the interview recordings were stored until the written transcripts were obtained and proofread for completeness, and then destroyed. All mentions of employee names, organization names, and other sensitive information in the transcripts were de-identified using unique numeric identifiers or descriptive phrases.

Qualitative Data Analysis and Triangulation.

A total of 13 key informant interviews were conducted and transcribed for analysis. Interviews were analyzed using Dedoose, a statistical and data management software package with mixed methods data analysis capabilities (Dedoose, 2012). The initial coding themes for the key informant interviews were based on relevant constructs present in the conceptual model, domain titles from the key informant interviews, and major themes that emerged from the analysis of the process evaluation data. As the interviews were coded, additional themes emerged. Interview excerpts and quotations were tagged using Dedoose and used to create descriptive tables for broad domains of interest discussed in the interviews. These tables were created to summarize, compare, and contrast relevant themes and trends across informants representing each of the four implementation success categories. Brief summaries were written to provide additional context to the themes stated in each descriptive table. Details from the process evaluation data that complemented themes discussed in the key informant interviews were woven into the brief summaries to further contextualize common trends seen across all of the worksites that implemented physical activity strategies.

Specific Aim #2: Quantitative Data Analysis

Description of Individual Study Participants:

WORKING Project staff visited each site enrolled in the study to recruit individual participants for data collection. Worksite employees voluntarily consented to participate in data collection, were allotted paid time to have their data collected, and received a gift card incentive for participating in each wave of data collection (\$20.00 for baseline, \$25.00 for 6-month follow-up).

A total of 411 employees from 25 worksites participated in the pilot study phase of WORKING (2005 – 2008). Two worksites (n=24 participants) exited the study for logistical reasons following baseline data collection and were therefore dropped from the analyses. Data from 387 participants employed at the remaining 23 worksites were included in the analyses. A total of 268 participants belonged to worksites assigned to an active intervention group, and 119 participants belonged to worksites that were assigned to the wait-listed control group.

A total of 602 participants employed at 17 worksites who were enrolled in the first two cohorts of WORKING 2 (2009 – 2012) were included in the analyses. A total of 286 participants belonged to worksites assigned to an active intervention group, and 316 participants belonged to worksites that were assigned to the wait-list control group. The merged data set used for analyses contained data from 989 individual participants employed at 40 worksites (Table 5.7).

Table 5.7: Breakdown of individual participants by study phase and intervention group assignment

	Total # of Worksites	Intervention Study Groups		Total
		Intervention Participants	Control Participants	
WORKING 1 Pilot Study	23	268	119	387
WORKING 2 Full Intervention Trial	17	286	316	602
Total	40	554	435	989

Each worksite enrolled in the WORKING Project was asked to select three employees at different levels of organizational hierarchy (top-level leadership, middle management, front-line staff) to complete an organizational-level assessment. Over the course of the study, project staff had mixed results when it came to obtaining completed assessments from worksites. Therefore, for the purposes of this dissertation project, only four (4) assessments were selected for analysis; one representing each of the four implementation success categories: “model adopter,” “fair adopter,” “poor adopter,” and “wipeout.” The assessment that was selected for each success

category was the one that investigator judgment deemed the most representative of the worksites included in the category.

Description of Data Sources

The following assessment tools were used to collect individual and organizational-level data from participants in both phases of the WORKING Project:

Clinical indicator measurements: Each participant was assessed for height, weight, systolic and diastolic blood pressure (BP), resting heart rate, waist circumference (WC), and cardiorespiratory fitness (CF) by way of calculating heart rate recovery (HRR) from a Kasch YMCA three minute step test performed in the field (Kasch, 1968). Pilot study participants were assessed prior to intervention implementation (baseline) and 6-month post implementation (6-month follow-up). Full intervention trial participants were assessed at baseline, 6-month follow-up, and 12-month follow-up.

Individual employee questionnaire: A voluntary sample of employees from each organization completed a 99-item questionnaire that assessed individual employee demographics (age, gender, SES, ethnicity, education level, etc); physical activity levels; stair usage; sedentary behaviors (e.g. television viewing, computer use); enjoyment of physical activity; fruit & vegetable consumption; perceived health and weight status, perceived co-worker support for promoting physical activity and healthy eating; perceived self-efficacy to engage in healthy PA and eating behaviors; workplace social norms; perceived stress; and sleeping patterns. Pilot study participants completed the survey at baseline and 6-month follow-up. Full intervention trial participants completed the survey at baseline, 6-month, and 12-month follow-up.

Organizational Worksite Wellness Assessment (“WWA”): Employee representatives from 3 levels of organizational hierarchy (e.g. Top-level leadership, middle management, line staff) at

each organization completed the WWA to determine their knowledge of the presence (or absence) of physical environments, workplace norms, policies, and practices related to worksite wellness at their worksite (e.g. workplace policies and incentives for engaging in PA and healthy eating at work, presence and content of cafeterias and vending machines, access to stairs, walking meetings, policies allowing for casual dress and fidgeting at meetings, presence of a worksite wellness committee, etc.)

Original data sets and codebooks for each phase of the project were obtained from the WORKING data management team (C. Leak and R. Nianogo). The Principal Investigator of the WORKING Project (A. Yancey) granted permission to conduct secondary data analyses using the WORKING data, and a co-investigator heavily involved in shaping the parent study's methodology (W. McCarthy) guided and supported these analyses.

Preparation for Data Analysis

A multi-step process was employed to integrate data from both sources into a master data set and prepare variables of interest for analysis. First, all nutrition and healthy-eating related variables were omitted from the data sets in order to narrow the focus of the analyses to physical activity related outcomes. The focus of this dissertation was to examine the physical activity related strategies and related outcomes. Variable names, value labels, and variable value coding across both data sets were transformed and recoded to match the configuration of the full intervention trial data set, in preparation for data merging. Individual data sets were merged into a master data set using the *append* function within STATA 12.0 I/C student version (StataCorp., 2012). Descriptive statistics and cross tabulations were conducted to determine any significant differences in participant demographics (e.g. age, gender, race/ethnicity, SES, etc.) by trial type (pilot, full trial) and by worksite implementation success category. Lastly, descriptive statistical

procedures (e.g. histograms, box plots, tabulations) were conducted to detect and/or address miscoded values, significant outliers, and variables with non-linear value distributions.

Dependent Variables

Key variables of interest from each of the three quantitative data sources (clinical indicator data, questionnaire data, worksite wellness assessment) were selected for analyses (Tables 5.8 – 5.10). A “change over time” variable (referred to as Var_{diff} for each variable of interest) was calculated for each variable to reflect changes observed from baseline to 6-month follow up:

$$Var_{diff} = var_{6\text{-mo follow up}} - var_{baseline}$$

Table 5.8: Clinical indicators of interest

Variable Name, or Variable Index	Description, Examples	Literature Source
Clinical Variables		
Systolic Blood Pressure (SBP)	Measured for three trials using a portable electronic blood pressure cuff (OMRON 725)	(National Center for Health Statistics, 2005)
Diastolic Blood Pressure (DBP)	Measured for three trials using a portable electronic blood pressure cuff (OMRON 725)	
Height (ht)	Measured for three trials using a portable stadiometer (Seca 214 model)	
Weight (wt)	Measured for three trials using a portable self-calibrating weight scale (Health-O-Meter)	
Body Mass Index (BMI)	Calculated using the Quetelet index for BMI standard equation: $[(mass(lb) / height(in)^2)] \times 703$	
Waist Circumference (WC)	Measured for three trials against the skin, using the iliac crest or umbilicus as the anatomical landmark	
Cardiorespiratory Fitness (CR) - Heart Rate Recovery (HRR)	Calculated as heart rate measured at the conclusion of a YMCA submaximal (3-minute) step test. Recovery HR was categorized into fitness categories for males and females	(Kasch, 1968)

Table 5.9: Individual variables of interest from individual participant survey

Variable Name, or Variable Index	Description, Examples	Literature Source
Weekly Physical Activity Levels (IPAQ)	Self-Report of daily physical activity levels at three intensities: vigorous, moderate, and walking bouts in increments of 10 minutes. Days, hours, and minutes were reported by participants A composite variable was created to reflect total weekly moderate to vigorous physical activity (MVPA) at baseline and 6-month follow up. A dichotomous variable was then created to classify each participant’s reported weekly MVPA at baseline and 6-month follow-up as “adherent” or “non-adherent” to the weekly physical activity recommendation of 150 minutes of MVPA per week indicated by the 2008 Physical Activity Guidelines for Americans (U.S. Department of Health and Human Services, 2008). An ordinal categorical variable was then created to indicate participants’ adherence to the PA guidelines over time.	(Craig et al., 2003, U.S. Department of Health and Human Services, 2008)
Co- worker social support	Participants were asked to rank the level of social support they receive from co-workers to participate in physical activity-related activities. Responses were coded on a 4-point Likert scale. Example: “How often do you co-workers compliment your attempts to be physically active?”	(Sorensen et al., 1998)
Job satisfaction	Participants were asked to rate their satisfaction with their job as a whole, taking all things into consideration. Responses were originally coded on a 7-point Likert scale. Variable was collapsed to 5 categories to aid in the analyses. Example: “How satisfied are you with your job?”	(Seabury et al., 2005)
Management Support	Participants were asked to rate how supportive they felt their management was of WORKING PA strategies. Responses were coded on a 3-point Likert scale. Example: “How supportive do you think management is of the WORKING Project?”	WORKING Project

Table 5.10: Organizational-level variables of interest from Worksite Wellness Assessment

Variable Name, or Variable Index	Description, Examples	Literature Source
Organizational-Level Variables		
Physical Activity Environment: Exercise Breaks	Informants were asked whether exercise breaks are normally conducted during meetings or at pre-designated times of the day	(Golaszewski and Fisher, 2002)
Physical Activity Environment: Walking Meetings	Informants were asked if their worksite has walking meetings	(Golaszewski and Fisher, 2002)
Workplace Norms: Casual Dress	Informants were asked if their worksite encourages the use of casual dress attire	(Golaszewski and Fisher, 2002)
Workplace Norms: Fidgeting allowed	Informants were asked if their worksite culture supports fidgeting, standing, or stretching during meetings	(Golaszewski and Fisher, 2002)

Independent Variables

Implementation Success. Individual participants were grouped into success categories based on how well their worksite had implemented the intervention. An ordinal variable (*success*) was created for the analysis to indicate the degree of implementation success. The variable was scaled from 1 (wipeout) to 4 (model adopter).

Outcome of interest at baseline ($var_{baseline}$). Baseline values of each selected outcome of variable of interest were used as an independent “predictor” variable in the analyses.

Demographics. Participant age, gender, race/ethnicity, education level, and income were used as covariates in the analyses conducted.

Participants’ adherence to MVPA recommendations. Participants reported their weekly levels of physical activity at three intensities: vigorous, moderate, and walking bouts in increments of 10 minutes. A composite variable was created to reflect total weekly moderate to vigorous physical activity (MVPA) at baseline and 6-month follow up. A dichotomous variable was then created to classify each participant’s reported weekly MVPA at baseline and 6-month follow-up as “adherent” or “non-adherent” to the weekly physical activity recommendation of 150 minutes of MVPA per week indicated by the 2008 Physical Activity Guidelines for Americans ([U.S. Department of Health and Human Services, 2008](#)). An ordinal categorical variable was then created to indicate participants’ adherence to the PA guidelines over time. Please see Chapter 7 for a more detailed description of the PA adherence variable, and how it was analyzed.

Study phase. A dichotomous variable was created to determine whether each participant was enrolled during the pilot study or full intervention trial phase of the WORKING Project study.

Data Analyses

Statistical analyses were performed using STATA 12.0 I/C Student Version (StataCorp, College Station, TX). Descriptive statistics were computed to describe continuous and categorical variables, and to assess differences in demographics between study phases and implementation success categories. A series of ordinary least squares regression analyses were conducted to determine if participants employed at worksites assigned to the most successful implementation category (model adopters) had greater improvements over time with respect to selected individual and organizational-level physical activity-related outcomes compared to less successful worksites. Statistical sensitivity to observed differences was maximized by deliberately not correcting the standard error to reflect the fact that respondent observations were clustered within worksites. For the purpose of identifying from the quantitative data emergent patterns consistent with the impressions derived from the formative research, the slight increase in possible type I error was defensible.

- *Standard regression equation formula:* $\text{Var}_{\text{diff}} = \beta_0 + \beta_1(\text{implementation success}) + \beta_2(\text{var}_{\text{baseline}}) + \beta_3(\text{African Americans}) + \beta_4(\text{Latinos}) + \beta_5(\text{Caucasians}) + \beta_6(\text{Asian Americans}) + \beta_7(\text{gender}) + \beta_8(\text{income}) + \beta_9(\text{education}) + \beta_{10}(\text{age}) + \beta_{11}(\text{study phase}) + \beta_{12}(\text{PA adherence})$

Models were adjusted for demographic characteristics and other associated covariates. Listwise deletion reduced the total N for each regression. Post-estimation comparison of means took this reduced sample size into account by conditioning the descriptive statistics on STATA's post-estimation e(sample) variable.. Significance levels for comparisons were set at 5% (p-value > 0.05).

Human Subjects Approval and Confidentiality

All individual clinical and questionnaire data, organizational-level worksite wellness assessments, and qualitative process evaluation data were originally collected by project staff

during the WORKING pilot study (2005-2008) and first two cohorts (2009-2012) of the full intervention trial currently in progress. Both phases of the study were granted Human Subjects Approval from the University of California, Los Angeles (UCLA) and Los Angeles County (LAC) Institutional Review Boards. An expedited review amendment to the parent WORKING Project was submitted to and approved by the UCLA Institutional Review Board for clearance to conduct the key informant interviews (UCLA IRB Protocol ID#: 10-001441).

To ensure the confidentiality of participating worksites, actual names of worksites were replaced with brief descriptive identifiers when reported in figures or in text (e.g. “county public health clinic,” “health education unit”, etc.). All individual participants were assigned a unique numeric identifier prior to having their data collected. All key informants were assigned a unique numeric identifier, and all transcripts and other documents generated were de-identified using numeric and descriptive identifiers. All data files, recordings, and transcripts were stored in a password-protected file on a secured password-protected computer accessible only by the principal investigator.

CHAPTER 6: Results from Process Evaluation Data Review and Key Informant Interviews

Overview and Summary Statistics

Relevant themes and observations presented in this chapter resulted from the combined analyses of two qualitative data sources: intervention process evaluation summaries created for each participating worksite, and semi-structured key informant phone interviews. Process evaluation data were collected, compiled, and organized into summaries for the 24 intervention worksites that participated in the pilot (2005-2008) and full intervention trial (2009-2012) phases of the UCLA WORKING Project. These summaries were analyzed using an iterative content analysis process adapted from earlier published work (Hopkins et al., 2012). Worksites were classified into four broad implementation categories (model adopter, fair adopter, poor adopter, and non-adherent “wipeout”) based on how well each worksite implemented the core WORKING intervention strategies.

Key informant interviews were then conducted with 13 employees and middle managers recruited from worksites classified according to which of each of the four implementation success categories it belonged (Table 6.1). These interviews were conducted to 1) gain a sharper “insider” perspective on the dynamics of the implementation process; 2) explore how middle managers operated within worksites to carry out prioritized activities and facilitate the uptake of new innovations; 3) identify the key roles and actions that middle managers and program champions performed throughout the process; further explore barriers and facilitators to implementation; 4) assess relevant outcomes resulting from PA implementation; and 5) assess what actions informants felt were necessary to achieve sustainability and institutionalization of PA strategies. A total of 7 program champions and 6 middle manager leaders were interviewed. The recruitment goal of recruiting pairs of informants from worksites representing each

implementation category was achieved. One pair of informants employed at a control site that had implemented strategies after the active intervention period were included in the analyses.

The interviews lasted an average of 41.0 minutes (range 34.3 – 70.5 min).

Table 6.1: Key Informant Descriptive Information

Implementation Success Category	Informant ID	Organization Type	Job Title	Yrs in Current Position	Yrs at Org.
Model Adopter	PC 323	County Public Health Clinic	Public Health Nurse (PHN)	11.5	11.5
	MM 323	County Public Health Clinic	PHN Supervisor	11.5	23.5
Fair Adopter	PC 210	LAC Disease Prev. Unit	PHN/Assistant Program Specialist	7	11.5
	MM 210	LAC Disease Prev. Unit	Nurse Manager	7.5	22
Fair Adopter	PC 202	County Public Health Clinic	Public Health Nurse (PHN)	15	15
	MM 202	County Public Health Clinic	PHN Supervisor	7	23
Poor Adopter	PC 321	Preventive Health Unit	Public Health Nurse (PHN)	11	15
	MM 321	Preventive Health Unit	Nurse Manager	4	7
Poor Adopter	PC 105	County Public Health Clinic	Public Health Nurse (PHN)	21	33
Wipeout	PC 204	Social Services CBO	Administrative Coordinator	2	2
	MM 204	Social Services CBO	Asst. Division Director	2	9
Control	PC 203	Social Services Unit	Investigator	15	38
	MM 203	Social Services Unit	Human Services Administrator	24	40

The majority of the informants (84.6%) were employees of Los Angeles County. The informants recruited were, for the most part, influential employees with long tenures at their respective worksites and within the larger organization in which they are employed. The majority of the informants (61.5%) had been employed in their current position for over 10 years, and over half of the respondents (53.8%) had been employed at their organization for 15 years or longer. A disproportionately large number of the informants (53.8%) were public health nurses (PHNs) or public health nurse supervisors. In nearly all of the public health clinics enrolled in the study public health nurses and their supervisors took the lead in managing PA strategies. PHNs may

have gravitated toward these roles because a) the skills needed to successfully manage the strategies (e.g. educating individuals and groups, demonstrating exercises, encouraging active participation and adherence) are consistent with the skills they employ when working in communities and populations; and b) PHNs may have been more supportive of physical activity as a “preventive” measure to maximize employee health, given their role as preventive health practitioners in the larger population.

The goal of the analysis was to describe and examine broad and crosscutting themes and trends that emerged, categorized according to the following topics of interest:

- Defining and describing implementation success
- Role of middle managers in agenda setting and innovation implementation
- Assessing organizational fit
- Role of middle managers in PA implementation
- Role of program champions in PA implementation
- Factors impacting implementation
- Perceived outcomes resulting from PA implementation
- Sustainability and institutionalization of PA strategies.

A total of 365 excerpts from the 13 interviews were tagged for analyses using Dedoose software (Dedoose, 2012). Each excerpt was marked with one or more descriptive codes that pertained to relevant themes and key words mentioned in the excerpt. For example, an excerpt in which a program champion informant discussed how increasing work responsibilities negatively impacted his/her ability to lead or participate in PA breaks would be marked with the code “PC challenges in supporting PA” under the primary parent domain “Program champion roles and actions.” Descriptive codes were generated iteratively as each interview transcript was reviewed. A total of 68 unique descriptive codes derived from 8 primary “parent” domains were generated in the first review of the interview transcripts. The coding scheme was then refined and condensed to 36 codes when the interview transcripts were reviewed for a second time (Appendix J). Using Dedoose’s mixed methods charts “code by descriptor” function, excerpts

and codes were cross tabulated by each informants' worksite implementation success classification (model adopter, fair adopter, poor adopter, wipeout, or control worksite) to examine common and divergent themes and trends across implementation categories.

Defining and Describing Implementation Success

Worksites were classified into four implementation categories based on their ability to 1) implement each of the core WORKING intervention strategies; 2) maintain each strategy few or no lapses in activity and participation; and 3) sustain each strategy for the duration of the intervention period. A summary table was created to describe each implementation category developed (Table 6.2).

Table 6.2: Implementation success categories and characteristics

	#	Implemented each strategy?	Lapses in activity and/or participation?	Sustained strategies to end of intervention period?
Model Adopters	3	<i>Yes.</i> Successfully implemented <i>Instant Recess</i> [®] breaks at daily designated times and at meetings lasting over one hour.	<i>None, or few minor.</i> Activities resume with very few, if any lapses. Challenges that arose throughout were successfully resolved.	<i>Yes.</i> Strategies were present “full strength” at the end of the intervention period.
Fair Adopters	9	<i>Yes.</i> Successfully implemented <i>Instant Recess</i> [®] breaks at daily designated times, and at meetings over one hour.	<i>Yes, a few.</i> Site endured a few lapses in activity and participation drops. Challenges that arose were addressed, and mostly resolved.	<i>Yes.</i> Strategies were present at the end of the intervention, but not at full strength.
Poor Adopters	8	No, or yes at a minimal capacity. Only one PA strategy was successfully implemented beyond the planning stage. Strategy was implemented with less than desired strength (e.g. 2 days/week vs. 5 days/week)	<i>Yes, many.</i> Organizational challenges, shifts in priorities, and overburdened PCs led to major lapses in activity and participation drops. Challenges that emerged were not successfully resolved.	Yes, but at a minimal capacity. At least one of the core strategies was present at the end; however, the strategy was not operating at the same strength as at the onset of intervention.
Non-adherent wipeouts	4	<i>Yes.</i> Sites were initially successful at implementing <i>Instant Recess</i> breaks at designated times and at meetings.	<i>Yes, many.</i> Organizational challenges, shifts in priorities, and overburdened PCs led to major lapses in activity and participation drops.	No. Strategies were no longer operating at the worksite. Or, activities were operating outside of the desired parameters of WORKING (e.g. PA breaks allowed on non-paid time or during lunch-time)
Total	24			

Role of Middle Managers in Agenda Setting and Innovation Implementation

During this segment of the interview middle managers were asked to describe their basic job responsibilities and describe in detail how they interact with leaders, other managers, and front-line staff to conceive, articulate, and enforce prioritized policies and practices for their worksite. A table was created to summarize responses of informants across the implementation success categories (Table 6.3).

Table 6.3: Managers’ role in agenda setting and innovation implementation

Broad and Cross-Cutting Themes	General Patterns among Key Informants
Basic roles and responsibilities	All manager informants: Diverse managerial duties: direct supervision of front-line staff, supervision of other managers, strategic planning, ensuring compliance with priorities and regulations of the organization. Managers spend the majority of their time in-office, but also travel regularly for meetings and other managerial-level activities. Regular in-person contact with front-line staff; infrequent contact with direct supervisors and executive leadership.
Diffusing information through communication channels	All manager informants: Primary communication channels through e-mail and other virtual communications. Series of regular meetings convened regularly (monthly, bimonthly, quarterly). Special directives and high-priority communications are sent when necessary.
Priority and agenda setting	All manager informants: Major priorities and agendas dictated by executive leadership. Wipeout site informants, and CBO worksites: Priorities and expectations of funding agencies were prioritized, regardless of whether they contributed directly to operational objectives.
Translating knowledge, and selling priorities and innovations	All manager informants: Communication to employees through all staff meetings, smaller unit meetings, and face-to-face interactions. Stressed the need to articulate to employees “what’s in it for them” and “how will this help me get my job done?” Maintained “open door policy” to garner employee input and resolve challenges.

Basic Job Roles and Responsibilities. Middle managers across all implementation categories were responsible for a number of priority tasks including direct supervision of numerous employees and other managers, enforcing policies and practices articulated by executive leadership, and monitoring staff productivity:

“So I help develop [and] set goals and objectives for our programs so that we meet the goals and objectives in our strategic plan. I develop activities. I develop trainings. I

develop strategies to improve practices with our providers, write reports related to our activities, [and] supervise several people. That entails pretty much a lot...So I oversee all of the nursing activities within our program. There are five units under me...I oversee all the nursing activities related to those five subjects.” (MM 321, Poor Adopter)

Managers typically performed their roles with very little direct oversight. Managers spent the majority of their time in the office, but often (e.g. 2-3 days/week) had meetings and other events that necessitated regular off-site visits. Although middle managers reported having regular face-to-face contact with front-line staff, they reported having limited or sporadic interactions with other middle managers and their direct supervisors. The majority of interactions between managers and executive leadership occurred during monthly or quarterly meetings and through phone/e-mail communications.

Diffusing Information through Communication Channels. A variety of methods were used by managers to relay vital information to other managers and front-line staff: e-mails, phone calls, meetings, and face-to face interactions. Middle managers often operated at the center of their worksite’s communications network and had to navigate the entire organizational hierarchy to ensure employees were properly informed and prioritized objectives were met:

“This section of the department is broken up into several different sections. It would include these three other managers at my level here and each manager has a section of approximately 50 to 60 people. Each manager holds a meeting with each of their sections. Unit meetings would be where each manager has so many supervisors in their span of control. Once we give the information to the supervisors, the supervisor would relay it to their staff and their subordinates during unit meetings and staff meetings.” (MM 203, Control)

In the case of time-sensitive, high priority information special communications were often used to ensure that all employees received messages clearly and responded accordingly:

“Administrative directives are memos that the administration types up with the instructions or notices and it goes out to all staff or designated staff depending on what's actually in the memo 'cause that's pretty much the main way that we put things out in writing for all staff.” (MM 203, Control)

Priority and Agenda Setting. Executive leadership and upper level management set organizational priorities. Priorities were typically grounded by strategic plans, guiding principles, federal, state, and local regulatory mandates (e.g. CDC, State of California). These priorities were articulated to middle managers through managerial meetings, administrative memos and other forms of written communication:

“The Executive Staff at (210) more or less breaks information down into its priorities for the program. The lead person that sets the agenda is the Chief Director because with the different program directors, you can have a completely different set of program priorities even though they all feed into the really broad CDC priorities. I meet regularly with the Program Director at least once a month to focus on any updates in the status of projects that we're working on. Then, I communicate back to staff, usually, by either staff meeting or email that this is a priority now and maybe something else isn't.”
(MM 210, Fair Adopter)

Middle managers often had very little to no influence in shaping overarching agendas and priorities for their organization; however, they were held accountable for achieving desired outcomes and generating deliverables. Managers did, however, have latitude in communicating to employees which priority items were the most important and how they might be achieved expeditiously:

“I bridge the gap between management or even above management, the system above, and then explain things so that I make sure that things are operating as they should. Mostly, I just try to be supportive and make sure that they're [front line staff] doing what they need to do. Some of the things are not realistic and so a lot of times, what I have to do is I have to do decide what things are absolutely necessary, and let the things that are, "this is what you're supposed to do" but are impossible to do... let them slide under and then make sure they go under the radar.” (MM 323, Model Adopter)

In addition to adhering to priorities set by strategic plans and executive leadership, middle managers employed at community-based organization (CBO) also had to contend with the priorities and expectations of funding agencies. One informant explains that funding agency expectations were still prioritized even if they did not align with the operational objectives of her worksite:

“First priority is just in terms of my day-to-day work...it's being responsive to funders for stuff that's going to affect-- us getting paid or contract continuing so that's at the top of the list.... Some things that are funder-driven don't necessarily enhance what we're doing but you have to do them 'cause you're contractually obligated. Everything we do right now is funding-based, [so we are] looking for other opportunities and proposal writing, things like that and other revenue-generating activity is also high on the [priority] list.” (MM 204, Wipeout)

Having to deal with the demands of funding in addition to managing day-to-day operational activities may limit CBOs' ability to incorporate new policies and practices into the standard conduct of business, especially those who may not directly align with their core organizational objectives.

Translating knowledge and “selling” priorities and innovations: Middle managers employed a number of strategies to ensure their front-line staff was knowledgeable of new policies and practices. Managers typically informed their staff through all-staff meetings, individual unit meetings, and, less frequently, one-on-one interactions. Middle managers across all categories agreed that it was vitally important to articulate to employees how new policies and practices fit the mission of the organization, and how policies were beneficial to their individual job responsibilities:

“One way I [communicate] is to have a demonstration during the staff meeting and try to pick out or highlight for them why this new policy, why it's making something better or it's improving something so making sure they have a clear understanding of the purpose of the new policy and how it's improving our system. In utilizing new resources, I am making sure they're aware of it and it takes more than one time so if there is a repetition in terms of there's something new, are we following, how is it going and doing something new for a week or a month and are you having any problem? That kind of thing.” (MM 210, Fair Adopter).

“Well, I try to empower the [staff]—not everything is—[but] most policies and procedures within the department are mandatory. But policies and procedures within our own program or new procedures that I develop...I show them how it is going to work, and I frame it like how is this going to make your work easier or how is this going to benefit the community, and then sometimes when people don't buy something, you just have to say, “Well, this is how we're going to do it now.” So you don't want to get to that point but I always try to show how this is going to benefit either our providers, benefit the

community, help increase vaccination rates because this is what we're all about here. This is our goal and objective, and then I show them how this fits within their job duty." (MM 321, Poor Adopter)

Managers also stressed the importance of maintaining an "open door policy" with employees to garner their input about new policies and troubleshoot any challenges or frustrations that may emerge.

"I have an open door policy. If they [employees] are having a difficult time trying to determine what they need to do I'd rather them come in and discuss it with me. You know so we can bounce ideas back and forth to see what is, what it is that we need to do." (MM 202, Fair Adopter)

"It's sharing with them the information and allowing them to help shape what that looks like or at least to weigh in on ideas that I have or their management team have, but making it a team process as opposed to just the top-down approach to making and carrying out decisions." (MM 204, Wipeout).

Assessing Organizational Fit

Informants were asked to describe how they felt the physical activity breaks and breaks at meetings "fit" within the culture of their organization. Differences in responses across the implementation categories were stark. Program champions and middle managers at the most successful worksites (model and fair adopters) felt that the PA strategies aligned with the mission of the organization, complemented other wellness-related activities present at the worksite, and served a useful purpose for staff that opted to participate:

"In the beginning it was difficult because we did not do any physical activities except during a meeting. But we already had the Employee Wellness Committee, [so] it was another aspect that we were able to adopt into our goals as [an] Employee Wellness Committee. We did not have an exercise culture but once it kind of started and people saw the motivation and how it was easy it was, it got to be a pretty contagious thing. It took off really well actually." (PC 323, Model Adopter)

"Again, going back to the fact that obesity is a health issue right now of nationwide here in the US and now, it's even going to other countries. It's a public health issue and indirectly, it economically affects us in our jobs so, I think, one of the advantages that we had was that we are focusing on it [obesity] so we're teaching on this which makes us say, "Well, if we're teaching this to our communities, shouldn't we be doing it?" "How

can we really be the leaders?" "How can we stop the pace?" It's like naturally with a good connection." (PC 202, Fair Adopter)

"When UCLA came to me, it fit right in with our program because...the administration was willing. They were willing to allow us to start this class and get people involved. Because of that, I think, that the wellness break came in right on time because our Biggest Loser Competition was losing steam."(PC 203, Control)

On the other hand, informants representing the least successful worksites clearly felt the PA strategies were not consistent with the norms of their worksite, and attributed some of the challenges they faced to these inconsistencies:

"It was challenging. Yeah, I think the desire within the culture was there but our function presented a challenge. I think people were open and willing to do it...they weren't "anti-it" but the functions of our business created a challenge. I think with our culture, they just weren't used to that behavior because we don't even have windows in our organization. We're not that company where everybody goes outside and has lunch outside, like we're very indoors in our business so I think people-- it was just different for the type of culture we have here in our office."
(PC 204, Wipeout)

"To be real honest, I really don't think they[the PA strategies] fit in with the culture of my particular worksite because the buy-in was really not that great...and just visually, you just look at the people that we work with. They're still bringing donuts, cakes and cookies. Physical activity just doesn't go hand-in-hand with the persons eating cakes, cookies, cupcakes and hamburgers for breakfast and things like that so I just don't think both strategies fit in because they're not totally accepted here."
(PC 321, Poor Adopter)

Role of Middle Managers in implementing PA Strategies

Middle managers were asked to state what they felt were their personal responsibilities in the PA implementation process, describe in detail how they contributed to the process, and discuss any challenges they had with supporting the strategies. A table was created to summarize responses of informants across the implementation success categories (Table 6.4).

Table 6.4: Middle manager engagement in PA implementation

Broad and Cross-Cutting Themes	General Patterns among Key Informants
Participation in PA implementation	<p>All managers: Felt it was their responsibility to support PCs, ensure logistics and resources were available carry out the PA strategies, and encourage employee uptake.</p> <p>Model and Fair Adopters, Control Site: Employed a more participatory “hands on approach” by actively participating in PA breaks and prioritizing face-to-face interactions with PCs leaders in support of PA implementation.</p> <p>Poor Adopters, Wipeouts: Had less direct engagement in the process and very little, if any active participation among managers collectively.</p>
Challenges in Providing Support for PA	<p>All managers: Difficulties in balancing regular job demands with actively participating in PA breaks and providing support to PCs.</p> <p>Model and Fair Adopters: Despite the challenges, managers were still able to actively participate at some level.</p> <p>Poor Adopters, Wipeouts: Managers were unable to negotiate schedules; opted out of participating with staff at daily PA breaks.</p>

Participation in PA implementation process. All managers felt it was important to support the efforts of program champions, ensure PCs had access to the resources needed to “get the job done,” and encourage staff to participate; however, the manner in which managers provided support and encouragement varied across the implementation categories. Managers at the most successful worksites tended to take a more participatory “hands-on” approach in supporting the implementation process by participating in daily PA breaks whenever possible, engaging directly with PCs throughout the implementation process, and ensuring PA remained on the “agenda” of managers and executive leaders:

“To be a true role model..I had to do it [the PA breaks]. So, in order to be a role model and encourage the collective, I need to do it as well. Beyond actually participating I just helped round the troops up, you know remind them. You know, tell them 10 minutes is available, we need to take advantage of this and participate in the physical activity breaks.” (MM 203, Fair Adopter)

“At the very beginning, there was a problem that we had with upper management...we are talking at the level of the director of the department and the second in command. Someone else in another office heard about our program and started asking “what were we doing” and then it became “did we get permission”, “how did we implement this”, “we should have run this by this department”, and things like that and “the Director of the organization didn’t know about this” and so and so forth...I had to address that, and I did it. As the Wellness Coordinator for this section and I had to let them know “look, I followed the Wellness Coordinator rules that I was supposed to follow. Then it turned out because I had gone directly to the Director of the entire department at the very beginning and got the OK, the issue was resolved.” (MM 203, Control)

Conversely, managers at the least successful worksites were less inclined to actively participate and directly engage with program champions, managers, and key decision makers throughout the duration of the implementation process:

“I basically just made sure they [the program champions] had what they needed. Ideally, it would've been nice for me to be able to participate as well but that wasn't often the case.”(MM 204, Wipeout)

These managers expressed the desire to role-model behaviors for their employees by participating regularly; however, they felt their time-sensitive work demands coupled with minimal encouragement from upper management prevented them from participating alongside employees on a regular basis.

Challenges in providing support for PA. All managers interviewed expressed having challenges in balancing the demands of their numerous job responsibilities and playing an active role in the implementation process:

“I actually tried to get the other managers on-board but it's really difficult for us to leave our desks because there's always an emergency situation from our headquarters, so to speak. That [participating on a regular basis] was hard and it's still hard. Almost impossible.” (MM 203, Control)

“The workload was really the only problem; the only challenge.... It's a lot of paperwork because there's a lot of government paperwork and a lot of my responsibilities had gotten more because we have so many computer systems.” (MM 323, Model Adopter)

“No, just the time -- I know people, a few people made comments. “It would be nice if the managers participated” so it wasn’t only myself. Some of the other managers did not

participate mainly because of their schedules as well. That was the biggest challenge and people did comment on that.” (MM 204, Wipeout)

This “job/role tension” was consistent across all managers interviewed; however, managers in the most successful worksites were able to adjust their schedules in order to participate occasionally when time permitted:

Interviewer: How often would you say that you participated in the activity breaks?

“It depended on how overwhelmed my work load was. I tried to encourage people to participate but I was so overwhelmed. I think I would say 'cause we did it twice a day, five days a week. I would say I participated about three afternoons a week.”
(MM 323, Model Adopter)

Role of Program Champions in Implementing PA Strategies

Program champions were asked to describe their day-to-day job responsibilities and explain their rationale and motivations for volunteering as PCs. In addition, they were asked to explain, in their own words, the process they and other PCs undertook to implement and sustain the PA strategies. Lastly, PCs were asked to state any challenges and barriers they faced in fulfilling their duties as PCs for their worksite.

Motivation to volunteer as a Program Champion. Program champions from across all implementation categories cited individual motivation as their primary reason for taking on the PC role at their worksite. In addition, several champions expressed concern about their worksite’s unhealthy work culture and felt, given their personal convictions for wellness and position within the organization; they would be a good fit for the PC role:

“Since I've been a Public Health Nurse, I have morphed into being conscious of watching what I eat and being physically active. Personally, I just like exercise in general and nutrition. Definitely, as a public health ambassador, we have to make it a goal to prevent the obesity epidemic. It's something that's so rampant in our society. Personally, for me, because diabetes runs in my family so I'm obviously very conscious just about weight and the things that I eat so I think that was the motivation. Because I enjoy it as a whole, I think it was nice to just offer it to my co-workers as well.”(PC 210, Fair Adopter)

“I enjoy the idea of being healthy and I've been working on myself for some years now. Also, I've seen the problem around the workplace where people were just losing self-esteem, losing motivation...so when I was presented with the idea of attempting to work out on their job and getting other people involved, I said okay!! It was something that we needed so that's what motivated me.” (PC 323, Control)

Other champions had personal wellness goals that they felt could be achieved along with helping other employees pursue healthier habits and lifestyles:

“Actually during the times that this started, I personally started a huge weight loss in my own personal life so this actually kept me motivated. Staff could see the change in me when this started. So for the beginning, that was a big motivation for me, encouraging myself as well as staff. That whole year, that we first started this program, I lost about 40 pounds so the staff would see me participating and that would keep me motivated for that period of time...At that time [start of the intervention period], I was newly involved with the Employee Wellness Committee. I was trying to find new ways to incorporate physical activity into our daily work environment. I also personally, I was wanting to increase my physical activity during the workday. So, being able to get trained in how incorporate 10-minute breaks, how to encourage others to get physically active. That was my motivation.” (PC 323, Model Adopter)

Only one program champion (from a worksite classified as “wipeout”) reported being “assigned” the role of program champion; however, she felt that her experiences with weight management and her position in the organization made her a good candidate for the responsibility:

“Initially I was asked to do it because of my role administratively. Once I got involved, I actively wanted to participate just because of the premise of the project. I have a background in nutrition. I worked for the Zone Diet for quite some time. I don't know, I think it's my role in the organization...I'm the one, just pretty much that liaison between the staff and the director and management sometimes so I'm the one that sends out the email for anything activity related or anything company related. I probably am the right person to send out information to the staff and keep them informed of what's going on.” (PC 204, Wipeout)

PCs facilitating implementation activities. When it came to discussing how PCs facilitated implementation activities, responses varied across implementation categories. Although all informants discussed performing tasks such as managing logistics to ensure PA breaks occurred without delay and delivering e-mail or verbal reminders about daily PA breaks, PCs from the most successful worksites focused more attention on describing their experiences

actively leading activities, motivating employees through face-to-face interactions, and working closely with middle managers to brainstorm new ideas and troubleshoot challenges:

“I communicate with everyone. Face to face. I'm a communicator and I try to encourage people. "Just come and start where you are. You'd only have to keep up with yourself. You're only in competition with yourself." I just try to say positive things and trying to keep people moving because I realize that if you start your day off relieving stress, then you feel better.” (PC 210, Fair Adopter)

“Most who follow me know that if I'm consistent, then they're going to be consistent. If they don't come and I see them, they will say, “I'll be there tomorrow” or “hey did you guys work out today?” And I will say “of course we did; where were you? Will I see you tomorrow?” I think that was one of the key components to the success of our wellness breaks and recess breaks. The consistency. At 3:00, we'll have it [the PA break] with or without you.” (PC 203, Control)

Program champions at less successful sites, on the other hand, started off with assertively reaching out to staff to participate but eventually grew frustrated by employees' lack of interest in the activities:

At first we did a lot of talking and lot of recruiting. Sometimes, the people were reluctant. We would go to somebody they hung out with, somebody they were close with and encourage that person to come and bring along their friends... we just did a lot of talking and gave out a lot of information...but it was difficult. It was like pulling teeth because most of our people don't do regular exercise.” (PC 321, Poor Adopter)

When it came to reaching out to superiors to troubleshoot challenges and brainstorm new activities, informants from the most successful sites reported having ready access to managers and other high-ranking leaders that advocated for the PA strategies:

“I had direct communication with our area health officer, who then would communicate with the nurse manager, who then will communicate with the supervisors just to let them know that this program was approved, and to tell staff that they were able to participate in the 10-minute breaks in the morning or in the afternoon. I didn't really need to have much contact with supervisors. They got involved in the exercise breaks if time allowed but the direct contact that I had mainly was with our area health officer. She would communicate to the nurse manager who would then communicate to the supervisors.” (PC 323, Model Adopter)

Informants from less successful sites, on the other hand, reported have some support from one or

a few managers; however, these efforts were not enough to influence other managers or improve the status of the PA strategies as a prioritized activity across the entire staff:

“Like I said, the only manager that really was supportive was MM 321. She was the only one. She participated. She signed up. She didn't bother us if we tried to go for the 10 minutes. Sometimes, she would go with us. Also, when we had the fruit basket and she would buy fruit and put in there so...there was some support. However, the only person I could say that was supportive in any kind of way that had the title of supervisor or higher was MM 321. I'm just saying that's the way it was....As you know, I was trying to get the [other] managers involved and it was like a fight. It was really a fight to get them to do it and the Director refused to even sign up [for data collection]. Even when we got all the other staff [enrolled in data collection] the Director simply refused.”
(PC 321, Poor Adopter)

Program champion barriers and challenges. As was the case with middle managers, program champions across all categories stated their biggest challenge was balancing their work responsibilities with the expectations of their roles as PCs at their worksite. Several PCs, particularly the public health nurses, were responsible for numerous time-sensitive tasks (e.g. responding to disease outbreaks, front desk/admin duties) and work that required off-site fieldwork. When times got busy champions struggled with keeping the PA strategies afloat. Program champions at the most successful worksites, however, were able to work through these challenges by either disciplining themselves to carry on with PC activities despite other responsibilities, or enlisting the support of other program champions to share the responsibilities:

“The only challenge from the day-to-day is probably the amount of work... whether I'm caught up doing work...end of the month reports...other reports due at beginning of the month...or writing my unit's evaluations. Sometimes you get busy and get caught up in your own stuff that you don't have five minutes to get up and say, "Okay, if you're caught up, get up and go lead." That's my challenge. Sometimes, I am caught up in work and I know even if I'm not caught up, I'm still expected to do the 3:00 wellness break. That's my challenge. Even when I'm tired, I still muster up the energy when they [the employees] say, "Come on. Let's go!" I get wrapped up but sometimes when I'm just working and has the day has been so crazy... I have to just stop in the middle of what I'm doing and go. I still get it done but that is probably my biggest challenge.”
(PC 203, Model Adopter)

“When I couldn't be present because of projects and outreach fieldwork...if I couldn't

make it, Jammie, 'cause I'm a planner; I would always ask other program champions, either [PC in another unit], let [PC in the same unit] know. I would communicate with [another PC in a different unit] so that they could just keep everybody engaged.”
(PC 210, Fair Adopter)

Program Champion from less successful worksites did not express the same level of determination to “get it done” despite the challenges, and in some cases did not have a strong core of other program champions and managerial advocates to lean on for support. One program champion from a less successful worksite explained how ever-increasing workloads undermined her ability to lead PA breaks and ultimately stalled the progress of their implementation process:

“Like I said before, it was very challenging because my workload increased while I was a program champion so it caused difficulties to really have a time and a slot to be able to do it [lead PA breaks]. Some of the program champions who were initially engaged fell off because of their work so they could no longer participate. This in turn reduced the number of people who actually participated. We also had to reduce the number of days that we were actually doing the physical activity because it was too demanding on just the three of us [program champions]. That one was the biggest thing.”(PC 204, Wipeout)

The informant goes on to describe how these persistent workload challenges eventually lead to the PA strategies becoming de-prioritized as a completely “extracurricular activity” by staff and leaders:

“Towards the end because the workloads got so heavy, people changed. They felt low. Motivation wasn't that high because you get caught up doing your own responsibilities and it [PA breaks] just becomes extracurricular, basically. You don't even have time to really think of extracurricular activities because you're so busy trying to complete your daily tasks. Even though it is important, it becomes secondary.” (PC 204, Wipeout)

Factors Impacting Implementation Success

Program champions and middle managers were asked to describe what they felt were the main factors that facilitated and discouraged successful implementation of the PA strategies at their worksites. Informants’ responses focused on three factors: 1) policies and directives supporting the PA strategies; 2) pre-existing wellness infrastructure; 3) leadership support and participation.

Policies supporting the PA strategies. Informants across all of the implementation categories stressed the importance of having policies and reference documents (e.g. memorandums of understanding (MOUs), memos for top-ranking leaders, etc.) in place which explicitly defined the parameters of the PA strategies, indicated what employees were and were not allowed on paid time, and addressed safety and liability concerns. Informants also indicated that these policies and reference documents had to successfully travel through their worksite's communications channels to ensure all employees were "on the same page." Although all leaders from participating worksites were required to sign a MOU prior to enrollment, informants reported that further efforts were needed to legitimize the PA strategies as a priority once the worksite began actively implementing the strategies. The most successful worksites tended to manage this process of "vetting" the PA strategies and obtained enough managerial buy-in and employee confidence to implement the strategies without major disruptions. Less successful sites, however, had major problems with clarifying the policies with managers and leaders and implementation suffered as a result. Two worksites in particular (1 fair adopter, 1 poor adopter) had ongoing debates with management regarding the legitimacy of the 10-minute PA breaks that lasted the entire duration of their intervention period. These debates effectively stalled implementation efforts:

"The basic thing was that lack of clarity upfront. I think, it [the lack of clarity] came more from the (DPH Director) level. If things got communicated from the top level down to Program Directors more clearly, then we wouldn't have had this confusion. Because when we had the confusion my boss started asking the difficult questions...it like threw a whole wrench in the whole thing." (MM 210, Fair Adopter)

"We just didn't have a buy-in from all executive team because they kept going back and forth about the 10-minute Lift Off! Breaks: "was 10 minutes above all the other time that employees got, or was it a 10-minute that you're supposed to deduct from their break time?" That shed a negative light...when I'm constantly communicating with my Nurse Manager but she's shooting back saying, "We need it in writing. We need something in writing so I could show our director." That was a big issue." (PC 210, Fair Adopter)

Pre-existing wellness infrastructure. Worksites that had formal or informal wellness activities in place prior to implementing the WORKING PA strategies appeared more likely to successfully implement and sustain activities than worksites with no pre-existing wellness activities. These “pre-existing activities” included participation in internal or system-wide worksite wellness committees, physical activity informally conducted during break time or before/after work, and other activities that leadership silently supported or allowed to occur “under the radar” (e.g. *Weight Watchers* and other diet/exercise programming, walking groups, etc.) In worksites that had activities already in place, informants felt that the resources, training, and the enforceable “PA on paid time” policy provided by the WORKING Project strengthened the capacity of their wellness efforts and legitimized wellness as a priority to be acknowledged by staff and leaders:

“I think it would have been harder to get approval if they had they not already had the Wellness thing going because the politics in [the “parent” organization] were crazy. I think, it just would have been harder for them to allow me to do the PA breaks because they’d be monitoring and making sure the staff didn’t get hurt or abuse the privileges...if the Department hadn’t already had that 10-minute thing in place...supervisors would not have fallen in line. ‘Cause I had to constantly, in the beginning, remind supervisors, staff and some people who tried to take advantage that you only have this many minutes for your break. I think the fact that we had the Wellness already approved just made it easier to.” (MM 203, Control)

In worksites that lacked pre-existing wellness infrastructure, program champions became overwhelmed with trying to drum up enthusiasm among staff about the benefits of wellness, contending with the organizational norms present at the worksite may not have supported PA on paid time, and then implementing the PA strategies.

Leadership advocacy and active participation. Leadership support was acknowledged by all informants to be vitally important to the success (or failure) of the PA strategies. Simply put, informants who reported their worksite as having ample managerial and leadership support

implemented strategies far better than worksites where leadership support was lacking or inconsistent. Informants described two types of leadership support: “advocacy” and “active participation.” Advocacy referred to leaders and managers assisting PCs in securing logistics for the PA breaks, allowing breaks to be incorporated into regular meetings, verbally encouraging employees to participate during meetings and special events (e.g. kick off events), making themselves available for brainstorming and troubleshooting efforts, and instigating communication with other managers and leaders. Informants who felt that having this level of support available legitimized their role as PCs for the worksite, mitigated resistance from other managers and employees, and allowed them to focus their attentions primarily on facilitating activities and motivating staff to participate:

The biggest asset was, one, (DPH Director) was behind it and then the (Area Health Officer). That was the biggest asset; when you have upper level management supporting it. In any organization, that's going to make a huge difference, right?... (Area Health Officer) was really very supportive of it... she brought a policy to encourage that we all receive the breaks and that we all get up [and participate]. She wrote it and allowed us to do it on work time, this 10 minutes, and she was serious. She felt that the [PA breaks] would make people more effective in their job because they're getting up and moving around instead of a lot of heavy sitting...”(MM 323, Model Adopter)

I think it is very important that other health centers have that same support from the area health officer to the nurse manager to the business office manager and then when you have all the supervisory support because the staff can then feel that they can exercise and do the lift-off breaks. That I think is very important to have that support from above. If there were any issues among staff, let's say if staff told us that their supervisor would not let them take a break or threaten[ed] punishment, we could talk to our executive person and she would again remind staff and supervisors that they were allowed to take the break if time permitted them... Because even as a public health nurse, although I had the authority to do the directive... when it came to talking to the supervisors about their staff, that message had to come from above me. So that is where our area health officer got involved.” (PC 323, Model Adopter)

“Active participation” referred to managers and leaders actually participating in activity breaks and breaks at meetings alongside front-line employees. There was agreement among informants from the most successful worksites that having managers actively participate in PA breaks,

regularly or even occasionally, inspired employees to participate as well:

“The few times that I did participate, I think the staff appreciated seeing a manager participate. It's one thing to sign off on a piece of paper but when they see you participating, it gives them that comfort level like, "Oh, this is okay."
(MM 210, Fair Adopter)

As for less successful worksites that reported having less leadership advocacy and active participation, implementing the PA strategies became an “uphill battle” of dealing with persistent challenges and barriers that ultimately diminished the enthusiasm held by program champions:

“I don't think it was that the management team wasn't encouraging. It just wasn't a major priority in the big scheme of things. There were a lot of changes going on then so I mean it wasn't like anybody was saying, “Don't do it,” but I don't think there was like a big cheerleading team from the management group to be like, “Ra ra, let's all get up and do some exercise,” and I think that the champions were a little off put by that.”
(MM 321, Poor Adopter)

Perceived Outcomes

When asked “how do you feel the WORKING Project impacted the culture of your organization?” program champions and middle managers cited several outcomes: 1) A general increased awareness of physical activity and employee wellness; 2) improvements staff morale and mood; 3) observed changes in individual employees physical activity habits, water/fluid intake, and eating patterns; and 4) changes to worksite culture in favor of physical activity on paid time. Several quotes that illustrate these outcomes have been included in a summary table below (Table 6.5).

Table 6.5: Perceived outcomes resulting from implementing PA strategies on paid time

Perceived Outcome	Quote
Improved awareness of PA in the work setting	“For those who participated, I think it was an eye-opening recognition that the work that we do primarily is very sedentary and I think it opens up to their minds that there may be another way of organizing the work day that would be better.” (MM 210, Fair Adopter)
Improvements in mood and staff morale	“It really increased our morale in the health center... People looked forward to the 10-minute morning and afternoon breaks to kind of refresh them. The feeling in the afternoon because the afternoon, you just had a full day of work, you needed to go outside and just do a walk or to move and the fact that we had that the lift-off break reminder, people would either walk around the health center for the 10 minutes or do a 10-minute dance break and it really refreshed them...people just felt better.”(PC 323, Model Adopter)
Worksite culture change	“The WORKING Project kind of helped to open up our minds to a holistic wellness and that really made a big difference. Now we do PA breaks at monthly meetings. We have salad days where we all sample it and we talk about it. We have an employee wellness board. We have a variety of wellness activities now not just like walking or eating.” (PC 321, Model Adopter)

Long-Term Sustainability and Institutionalization

In the final section of the interview informants were asked to comment on what efforts were required by leaders, program champions, and employees at-large to achieve long term sustainability and institutionalization of physical activity breaks and breaks at meetings held on paid company time. The informant responses were fairly consistent across all implementation categories.

Program champions and middle managers stated emphatically that leaders’ consistent and enthusiastic support of the implementation process and regular participation in PA breaks was crucial to achieving sustainability and institutionalization. According to the informants, leaders and managers are in a key position to set the organizational agenda in support of physical activity, and must “practice what they preach” in order to encourage and empower employees to “follow the leader” and participate in activities:

“I think leaders and managers should make sure that they stop. They should force themselves to stop and participate with the rest of the staff, and I have only done that a couple of times. When we first started then I would do it more but, I think, the managers have to realize that the work is going to be there no matter what so we need to force ourselves to stop and even include ourselves in these breaks and I think if we do. Being directly involved may help some of the other people that maybe aren't participating. If they [employees] see that we [managers and leaders] are involved in it too, then I think it would help inspire more people to participate.” (MM 203, Control)

“I think they [managers and leaders] need to get involved. Put your sweatshirt on and come out and do it. That's what I mean by 'get involved'. Let your body feel something besides sitting behind the desk all-day long sometimes. You're supportive, great, but you need to get involved with the wellness. You can support people but you need to get involved so you know exactly how beneficial this 10-minute wellness break really is to the body and to the mind. If they [managers and leaders] got involved with the 10-minute workout they would probably understand the importance more so than sitting back and looking at the statistics.” (PC 203, Control)

“First of all...they need to be willing participants. They need to be cheerleaders and encourage us also. It's just like kids, if they see their parents doing something and they're excited about something and if the parents are encouraging them, they're going to be encouraged. That's going to make them want to follow suit but they do need to do some of the planning of activities. We know, as employees, when our managers care about us. This [participating in PA breaks and supporting strategies] is a way to show you care about your employees; but if you don't care, people know it so why should we [employees and program champions] do extra work? See? This thing is really big.” (PC 321, Poor Adopter)

As for program champions, the informants felt that Program Champions needed cooperation from leaders and managers to perform their roles effectively, support from fellow employees to keep up the momentum of the PA strategies and prevent lapses in activities, recognition for their efforts, and access to resources and continuing education to sharpen their skills and keep them motivated as PCs. One middle manager spoke of her commitment to supporting PCs through what she called “servant leadership:”

“Program Champions need ongoing support. I believe that the program champions have to know that the managers are still supporting them. As a manager, I say "Okay, let me handle this for you, guys," and whatever so I participate in that way. That helps the champions to know that, "This is a sanctioned thing" and "Everything is okay," and they know that they can come to me if they need extra time.” (MM 203, Control).

Informant responses were mixed when it came to discussing what they felt was needed to encourage employees-at-large to prioritize PA breaks and participate long-term. Some felt that tangible incentives such as gift cards and prizes might be beneficial in enticing employee participation, while others were opposed to incentives:

“At first when you guys [the WORKING Project team] came here, you were giving away the gift cards [for data collection]. But what happens? Once you get the gift, now there is no incentive to keep coming. They [the employees] would all come in for the card but that's no stick-to-it-tive-ness. I have to pay you? I have to pay you to think about your health? I have to pay you to do something about your weight gain or to do something about increasing your energy? I have to pay you to do that for you? That to me doesn't make a whole lot of sense because you can't keep the gift giving forever.”

(PC 204, Wipeout)

Although opinions about using incentives varied, informants did agree that having managers and leaders actively participating would encourage more staff to participate.

CHAPTER 7: Quantitative Results from Individual and Organizational Assessments

The goal of the following analyses was to determine how much the degree that worksites adhered to the WORKING intervention protocol (implementation success) impacted change over time (6 months of observation) on a number of physical activity-related outcomes. Data from individual employees who participated in the two phases of the WORKING project were merged into one data set for analysis. Ordinary least squares regressions were used to analyze the data; this was done for expediency and to allow for simple interpretation of results. More sophisticated analyses that reflect the clustered nature of the data will be employed in the future to substantiate the preliminary findings based on these analyses.

Summary and Descriptive Statistics

The full sample included in these analyses contained 989 participants from two independent studies (Table 7.1, in Tables). The first study, the WORKING 1 Pilot study, yielded data collected on 411 participants employed at 25 worksites during the years 2005-2008. Two worksites (n=24 respondents) were omitted from the data set because the worksites exited the study prior to participating in follow-up data collection. A total of 387 participants employed at 23 worksites enrolled in the pilot study were ultimately included in the analyses. The second study, the WORKING 2 full-scale intervention trial, involved data collected on 602 participants employed at 17 worksites that had received full exposure to the WORKING intervention.

Descriptive statistics were first conducted on both data sources independently and then compared to determine if the two samples were sufficiently similar (Table 7.1, in Tables). A number of significant differences across the two data sets were identified. The total sample size of the full intervention trial was nearly 60% larger than the pilot study, and the average number of participants per site was significantly larger (35.4 in full trial vs. 16.8 in pilot study). Much of

the size differential was due to disproportionately large samples of employees ($n > 60$) being recruited from three worksites enrolled in the full trial study phase. The full intervention trial had a significantly higher proportion of males (16.9% vs. 9.6%, $p = 0.001$), lower proportion of obese ($BMI > 30$) individuals (37.1% vs. 45.0%, $p = 0.001$), and higher formal education levels (e.g. high school grad, college grad, graduate school) compared to the pilot study participants (13.4%, 69.3%, 17.3% vs. 9.0%, 66.6%, 24.4%, $p = 0.009$). Mean age, age range, marital status, U.S. nativity, and yearly household income were comparable across both study phases. The ethnicity variables were initially coded as non-mutually exclusive dichotomous variables. A new mutually exclusive categorical variable for ethnicity was created that accounted for 898 participants across both study phases. Ethnicity data for 91 participants were not included in the analyses because these participants first contributed data at the 6-month assessment, when the baseline ethnicity questions were no longer asked, and did not have their ethnicity data collected by project staff. Participants who reported Asian American, South Asian, and Pacific Islander for ethnicity were collapsed into one category (“Asian/South Asian/PI”) to allow for clearer analyses. Participants who reported American Indian/Alaskan Native, multi-ethnic, and other for ethnicity were collapsed into one category (“Other ethnicity or multi-ethnic”) to allow for clearer analyses. The full trial sample was found to have a lower proportion of African Americans (29.9% vs. 39.8%) and a higher proportion of Asian Americans (18.9% vs. 10.6%) compared to the pilot study sample. All regression analyses included ethnicity as a covariate in order to help reduce the likelihood of ethnicity confounding observed changes over time.

Implementation success categories (model adopter, fair adopter, poor adopter, and non-adherent “wipeout”) were applied to individual participants’ data according to the worksite where they were employed. Five hundred fifty four participants (56.0% of total sample) were

assigned to an implementation success category. Of the 554 participants assigned to categories, 12.1% were classified as employees of “model adopters,” 39.0% as employees of “fair adopters,” 33.8% as employees of “poor adopters,” and 15.2% as employees of non-adherent “wipeouts.” Descriptive statistics were produced to determine any differences in demographics across the four implementation categories (Table 7.2, in Tables). Gender and BMI were not significantly different across implementation categories. Significant differences were identified for yearly household income ($p < 0.006$), U.S. nativity ($p < 0.008$), and education levels ($p < 0.000$). Participants employed in model adopter and fair adopter sites had proportionately more graduate degrees than poor adopter and wipeout sites. Income differences and proportion of foreign born followed a similar pattern, with high income, high foreign-born status favoring the model and fair adopters. Participants belonging to “model adopter” worksites had significantly lower proportions of African Americans (26.9% vs. 65.8%) and higher proportions of Latinos (34.3% vs. 21.92%), Whites (16.42% vs. 5.48%), and Asians (11.94% vs. 0%) than participants in the non-adherent “wipeout” worksite classification ($p < 0.000$) (Table 7.2, in Tables).

The merged data set consisted of 989 participants employed at 40 worksites. The sample was predominantly female (86.0%), predominantly overweight or obese (71.4%), predominately African American or Latino in ethnicity (67.3%), predominantly married or living with a partner (52.1%), predominantly U.S. born (66.6%), and college-educated (88.5%). Slightly over half (56.0%) of the participants came from worksites that received the intervention ($n=554$); 44.0% of participants were at worksites that were randomly assigned to a control group. Descriptive statistics were conducted to determine any significant differences in demographics between intervention and wait-listed control participants (Table 7.3, in Tables). There were no significant differences in gender, age, marital status, education, and BMI between participants among

intervention worksites and those belonging to a wait-listed control group worksite. However, the intervention group had more low-income (\$30,000 and under) participants (18.0% vs. 10.7%) and fewer high-income (\$80,000 and up) participants (33.8% vs. 42.47%) than the wait-list control group.

A new variable was created for each outcome of interest that represented observed changes over the 6-month observation period ($\text{var}_{\text{diff}} = \text{var}_{6\text{-month}} - \text{var}_{\text{baseline}}$). A series of regression analyses were then conducted on outcomes of interest belonging to several broad categories: clinical indicators, weekly physical activity levels, co-worker social support, job satisfaction, and managerial support. The following served as independent and/or covariate variables in the regression model: implementation success category; outcome variable at baseline; phase of enrollment in the study (trialtype); gender (female); age; ethnicity (African American, White, Latino, Asian, and Other); education level; household income; and participant body mass index (BMI). An *e(sample)* estimation command was used to identify listwise deletions that occurred during the regression analyses.

Adherence to Weekly Physical Activity Guidelines

Participants were asked to report the number of days they engaged in vigorous intensity physical activity (VPA), moderate intensity physical activity (MPA), and the number of days they engaged in walking bouts that lasted 10 minutes or longer (walk PA) over the last week. For each PA intensity level, participants were then asked to report the number of hours and minutes of activity they accumulated per day over the last week. Participants reported days, hours, and minutes of PA at each intensity level at baseline and 6-month follow-up.

A composite variable was created to reflect total weekly moderate to vigorous physical activity (MVPA) at baseline and 6-month follow up. The following steps were taken to create the

composite MVPA variable:

- 1) Daily minutes VPA were multiplied by the number of days of VPA reported: $(\text{min VPA/day} * \text{days VPA/week}) = \text{weekly VPA}$
- 2) Minutes of MPA were multiplied by the number of days of MPA reported:
 $(\text{min MPA/day} * \text{days MPA/week}) = \text{weekly MPA}$
- 3) Daily minutes VPA were converted to MPA-equivalent minutes using a 2:1 conversion ratio, as indicated by the 2008 Physical Activity Guidelines for Americans (U.S. Department of Health and Human Services, 2008).
- 4) Weekly MPA-equivalent minutes were added to weekly MPA minutes to generate weekly total MVPA minutes:
 $(\text{weekly MPA-equivalent minutes} + \text{weekly MPA minutes}) = \text{weekly MVPA minutes}$

A dichotomous variable was then created to classify each participant's reported weekly MVPA at baseline and 6-month follow-up as "adherent" or "non-adherent" to the weekly physical activity recommendation of 150 minutes of MVPA per week indicated by the 2008 Physical Activity Guidelines for Americans (U.S. Department of Health and Human Services, 2008). An ordinal categorical variable was then created to indicate participants' adherence to the PA guidelines over time. Participants who were adherent to the guidelines at baseline but who reported being non-adherent at follow-up were classified as "regressors." Participants who reported being non-adherent at both baseline and follow-up were classified as "non-adherents." Participants who reported being adherent at both baseline and follow-up were classified as "adherents", and participants who were non-adherent at baseline but who reported being adherent at follow-up were classified as "progressors."

A 4x4 chi-square test was conducted to determine associations between the degree of

adherence to the WORKING intervention protocol (implementation success), and participants' reported MVPA-equivalent-based adherence to the PA Guidelines for Americans (PA guidelines adherence over time). The numbers were too small in the individual cells to interpret. The overall pattern is one of no association between implementation success and PA adherence over time ($X^2(9) = 7.24, p=0.613$). A Fisher's exact test confirmed the non-significant findings ($p=0.603$).

A 2x2 chi-square goodness of fit test was conducted to determine if there was a change in the distribution of participants in terms of their adherence to the Physical Activity Guidelines for Americans from baseline to 6-month follow-up. Only participants who had been exposed to the WORKING intervention were included in this analysis. Approximately two-thirds (69.5%) of participants initially classified as non-adherent to the PA guidelines became adherent at follow-up. By contrast, only 14.8% of those initially adherent to the PA guidelines became non-adherent at 6-month follow-up. The baseline and 6-month follow-up distributions of PA guidelines adherence appear to be significantly different ($X^2(1) = 7.06, p=0.008$).

Clinical Indicators

A series of regression models were conducted to examine whether implementation success impacted changes in a variety of participants' clinical outcomes: BMI, systolic blood pressure (systolic BP), diastolic blood pressure (diastolic BP), weight, waist circumference, and cardiorespiratory fitness (CF) over time. Each model predicting a different clinical outcome controlled for the participants' clinical outcome at baseline, phase of study enrollment (pilot, full trial), age, gender, education, household income, BMI category (ideal/normal, overweight, obese), and PA guidelines adherence at baseline.

BMI change over time. A multiple linear regression was conducted to test for associations between implementation success and changes in BMI over time, controlling for

participants' BMI at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and PA guidelines adherence at baseline. Although the overall model was not statistically significant, implementation success was found to be significant in the model (Table 7.4, in Tables). There was a significant inverse relationship between participants belonging to a fair adopter worksite and change in BMI over time ($\beta = -0.93$, $p = 0.032$). Fair adopter participants, on average, had a 0.219 kg/m^2 reduction in BMI over the course of the observation period, controlling for all other predictor variables. Model adopter participants, on average, had a 0.377 kg/m^2 reduction in BMI over the course of the observation period, controlling for all other predictor variables. The sample size of model adopters was much smaller than the other implementation categories, which may explain why model adopters exhibited only a trend toward significance in the model ($p = 0.076$). Poor adopter and wipeout participants, on average, gained 0.63 kg/m^2 and 0.08 kg/m^2 in BMI over time, respectively.

Diastolic blood pressure changes over time. A multiple linear regression was conducted to test for associations between implementation success and changes in diastolic blood pressure (diastolic BP) over time, controlling for participants' diastolic BP at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was significant ($F = 2.59$, $p = 0.000$), there was no association of diastolic blood pressure with implementation success. Diastolic BP at baseline, education, ethnicity, and age were found to be significant in the model (Table 7.5, in Tables).

There was a significant relationship between participants' diastolic BP at baseline and changes in diastolic BP over time ($\beta = -0.27$, $p = 0.000$). Every one 1.0 mmHg increment in a participant's diastolic BP measurement at baseline was associated with, on average, a 0.27

mmHg increase in diastolic BP over the course of the 6-month observation period.

There was a significant relationship between Caucasian/Whites and change in diastolic BP over time ($\beta = -4.48$, $p = 0.038$). Caucasians, on average, had a 2.65 mmHg reduction in diastolic over time, controlling for all other variables. Latinos and Asians also had reductions in diastolic BP over time controlling for all other variables (0.57 mmHg and 3.33 mmHg, respectively). African Americans, however, had a mean 1.84 mmHg increase in diastolic BP over time, controlling for all other variables.

There was a significant relationship between participants aged 46-60 years and change in diastolic BP over time ($\beta = 3.36$, $p = 0.012$). Participants aged 46-60 years old on average gained 1.22 mmHg diastolic BP over time, controlling for all other variables. Participants aged 30 and under gained on average 1.20 mmHg of diastolic BP over time. Participants aged 31-45 and aged 61 and over reduced their diastolic BP over time, on average (0.63 and 1.89 mmHg, respectively).

Systolic BP changes over time. A multiple linear regression was conducted to test for associations between implementation success and changes in systolic blood pressure (systolic BP), controlling for participants' systolic BP at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. The overall model was significant ($F(20, 224) = 2.33$, $p = 0.001$). Implementation success, systolic BP at baseline, education, and age were found to be significant in the model (Table 7.6, in Tables).

There was a significant relationship between participants classified as poor adopters and change in systolic BP over time ($\beta = -5.98$, $p = 0.045$). Unexpectedly, poor adopter participants lowered their systolic BP by 0.93 mmHg over time, controlling for all other variables, as

compared to other categories of implementation success. Participants from other types of sites did not show any significant change in systolic BP. There was a significant relationship between participants' systolic BP at baseline and their change in systolic BP over time ($\beta = -0.20$, $p = 0.000$). Every 1.0 mmHg increment in a participant's systolic BP at baseline was associated with a 0.20 mmHg decrease in systolic BP over time.

There was a significant relationship between participants with high school education or less and changes in systolic BP over time ($\beta = -10.72$, $p = 0.001$). Participants with a high school education or less had a mean reduction of 6.61 mmHg over time, controlling for all other variables. Participants with college degrees or graduate degrees did not show a significant change.

There was a significant relationship between participants aged 46-60 years and changes in systolic BP over time ($\beta = 4.92$, $p = 0.021$). Participants aged 46-60 years, had a mean increase of 2.01 mmHg for systolic BP over time, controlling for all other variables. Participants aged 61 years and over, however, did not experience any significant change.

Weight change over time. A multiple linear regression was conducted to test for associations between implementation success and changes in participants' weight over time, controlling for participants' weight at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. The overall model was not statistically significant. Implementation success was found to be significant in the model (Table 7.7, in Tables).

There was a significant inverse relationship between participants classified as fair adopters and changes in participants' weight over time ($\beta = -4.63$, $p = 0.050$). Fair adopter participants experienced, on average, a weight loss of 1.63 lbs over time, controlling for all other

variables. Model adopter participants experienced an average weight loss of 0.75 lbs over time, controlling for all other variables. Poor adopters and wipeout participants, on the other hand, did not experience any significant change in weight.

Waist circumference (in) changes over time. A multiple linear regression was conducted to test for associations between implementation success and changes in participants' waist circumference over time, controlling for participants' waist circumference at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. The overall model was not statistically significant, and there were no significant associations found between implementation success and changes in waist circumference over time. Participants' waist circumference at baseline, ethnicity, and BMI category were significant in the model (Table 7.8, in Tables).

There was a significant relationship between participants' waist circumference (WC) at baseline and their change in waist circumference over time ($\beta = -0.148$, $p = 0.006$). Every 1.0-inch increment in a participant's WC at baseline was associated with a 0.15 reduction in WC over time, controlling for all other variables.

There was a significant relationship between Latino/Hispanic participants and change in WC over time ($\beta = -1.14$, $p = 0.029$). Latino/Hispanic participants lost on average 0.51 inches in WC over time, controlling for all other variables. Caucasians, Asians, and African Americans did not experience significant change in waist circumference over time.

There was a significant relationship between obese participants and change in WC over time ($\beta = 1.47$, $p = 0.048$). Obese participants lost on average 0.43 in WC over time, controlling for all other variables. Overweight participants did not experience any change in waist circumference over time.

Cardiorespiratory Fitness (CF) changes over time. Participants' fitness category (n=443) (1 for very poor, to 5 for excellent) was based on their recovery heart rate following the completion of a 3-minute submaximal aerobic step test (Kasch, 1968). A multiple linear regression was conducted to test the association between implementation success and changes in cardiorespiratory fitness over time, controlling for participants' CF at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 82) = 3.50, p=0.000$), no significant associations between implementation success and change in CF over time were found. However, participants' CF at baseline, study phase of enrollment, and gender were significant in the model (Table 7.9, in Tables).

There was a significant inverse relationship between participants' CF at baseline and changes in CF over time ($\beta = -0.71, p=0.000$). Participants classified as having the highest CF classification (excellent) at baseline on average had a 0.30 category reduction in the CF over time, controlling for all other variables. However, participants classified as having the lowest CF classifications at baseline (fair, poor) actually improved their CF over time by 0.64 and 1.32 categories, respectively.

There was a significant relationship between participants enrolled in the full trial and changes in CF over time ($\beta = 0.35, p=0.024$). Participants who enrolled in the full trial study were associated with 0.35 category improvement in CF over time compared to pilot study participants.

There was a significant relationship between female participants and change in CF over time ($\beta = 0.45, p=0.036$). Female participants were associated, on average, with a 0.45 category improvement in CF fitness over time compared to male participants.

Co-worker Social Support

Participants answered a series of questions asking their perception of how often their co-workers supported or initiated several types of physical activity at their workplace (Table 7.10). Participants selected a response from a four-point likert scale (“never”, “seldom” “sometimes” and “always.” A series of regression models were conducted to determine whether implementation success was associated with changes over time in participants’ responses to the co-worker support questions. The models controlled for participants’ response at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants’ adherence to PA guidelines at baseline.

Table 7.10: List of co-worker social support questions

Question Name/Descriptor	Question
Co-workers PA compliments	How often do your co-workers compliment your attempts to be physically active?
Co-workers suggesting PA	How often do your co-workers suggest or demonstrate an activity for you to try (e.g., a new dance step)?
Co-workers leading PA breaks	How often do your co-workers initiate or lead an exercise or movement break during a meeting or at a certain time of the day during routine work activities?
Co-workers encourage more PA	How often do your co-workers encourage you to get more physical activity?
Co-workers prompt stair use	How often do your co-workers prompt you to take the stairs rather than the elevator?
Co-workers suggest break walk	How often do your co-workers suggest or accompany you on a lunch time or break time walk?
Co-workers host walking meeting	How often do your co-workers suggest or host a walking meeting?

Co-workers complimenting PA over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants’ perception of co-workers complimenting PA over time, controlling for participants’ reported values for co-worker complimenting PA at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants’ adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 222) = 7.39, p=0.000$), no significant

associations between implementation success and change in reported co-workers complimenting PA over time were found. Participants' perceptions of co-workers complimenting PA at baseline and income were significant in the model (Table 7.11, in Tables).

There was a significant relationship between participants' reported levels of co-workers complimenting PA at baseline and change over time in co-workers complimenting PA ($\beta = -0.58$, $p = 0.000$). Participants who reported the highest levels of co-workers complimenting their attempts at PA at baseline, on average, had a 0.60 category decline in their reported values over time, controlling for all other variables. On the other hand, participants who reported the lowest levels of co-workers complimenting their attempts at PA at baseline (seldom, never) actually had an improvement in their reported values over time (0.524 and 1.24 categories, respectively), controlling for all other variables.

There was a significant relationship between high-income participants (\$80,000 and over) and perceptions of co-workers complimenting PA over time ($\beta = 0.26$, $p = 0.043$). High-income earners reported, on average, had a 0.06 category improvement in their reported levels of co-workers complimenting their attempts at PA over time, controlling for all other variables. There was no change in the perceptions of coworkers complimenting PA over time for low income earners.

Co-workers demonstrating or suggesting PA over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers suggesting PA over time, controlling for participants' reported values for co-worker suggesting PA at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 221) = 7.27$, $p = 0.000$), there were no

significant associations found between implementation success and perception of co-workers suggesting PA over time. Participants' responses to co-workers suggesting PA at baseline, gender, age, and BMI category were significant in the model (Table 7.12, in Tables).

There was a significant relationship between participants' perception of co-workers demonstrating or suggesting PA at baseline, and the change in co-workers suggesting PA over time ($\beta = -0.67$, $p = 0.000$). Participants who reported the highest levels of perceived co-workers suggesting PA at baseline on average had a 0.845 category decline in their reported levels over time, controlling for all other variables. There was no change in coworkers demonstrating or suggesting PA for participants with lower baseline levels.

There was a significant relationship between obese participants and perceptions of co-workers suggesting PA over time ($\beta = 0.43$, $p = 0.011$). Only participants classified as obese had significant improvements over time (0.463 categories, on average), controlling for all other variables.

Co-workers leading PA breaks over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers leading PA breaks over time, controlling for participants' reported values for co-workers leading PA at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. The overall model was statistically significant ($F(20, 221) = 9.48$, $p = 0.000$). Implementation success, participants' perception of co-workers leading PA breaks at baseline, phase of study enrollment, and education were significant in the model (Table 7.13, in Tables).

There was a significant relationship between model adopter participants and changes in perceptions of co-workers initiating and leading PA breaks over time ($\beta = 1.30$, $p = 0.000$). Only

model adopters reported significant improvements (1.41 categories, on average), controlling for all other variables.

There was a significant relationship between participants' perception of co-workers leading PA breaks at baseline, and the change in co-workers leading PA breaks over time ($\beta = -0.69$, $p=0.000$). Participants who reported the highest perception of co-workers leading PA breaks at baseline had a decline of 0.37 categories over time on average, controlling for all other variables. However, participants who reported the lowest levels (seldom, never) reported significant improvements in their perceptions of co-workers leading PA breaks over time (0.87 and 1.48 categories on average, respectively) controlling for all other variables.

There was also a significant relationship between full trial study participants and perceptions of co-workers leading PA breaks over time ($\beta = 0.51$, $p=0.000$). Full trial participants had on average a 0.51 category improvement in their perceptions of co-workers leading PA breaks over time compared to the overall sample.

Co-workers encouraging more PA over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers encouraging more PA over time, controlling for participants' reported values for co-worker encouraging PA at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was significant ($F(20, 222) = 7.19$, $p=0.000$), there were no associations found between implementation success and co-workers encouraging more PA. Participants' perception of co-workers encouraging PA at baseline and BMI category were significant in the model (Table 7.14, in Tables).

There was a significant relationship between perception of co-workers encouraging more

PA at baseline, and changes in co-workers encouraging more PA over time ($\beta = -0.59$, $p=0.000$). Participants who reported the highest levels at baseline had a 0.64 category decline in perception of co-workers encouraging more PA over time, controlling for all other variables. However, participants who reported the lowest levels (seldom, never) at baseline had improvements in perceptions of co-workers encouraging more PA over time (0.52 and 0.99 categories, on average), controlling for all other variables.

There was also a significant relationship between obese participants and changes in co-workers encouraging more PA over time ($\beta = 0.54$, $p=0.001$). Of all participants, obese participants had the greatest improvements in co-workers encouraging more PA over time (0.358 categories, on average), controlling for all other variables. No change was observed for overweight participants.

Co-workers prompting stair use over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers prompting stair use over time, controlling for participants' reported values for co-workers prompting stair use at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 212) = 4.92$, $p=0.000$), no associations between implementation success and change in co-workers prompting stair use over time were found. Participants' perceptions of co-workers prompting stair use at baseline was significant in the model (Table 7.15, in Tables).

There was a significant relationship between co-workers prompting stair use at baseline and changes in co-workers prompting stair use over time ($\beta = -0.48$, $p=0.000$). Participants who reported the highest levels at baseline had a 0.80 category reduction in co-worker prompting stair

use over time on average, controlling for all other variables. Participants who reported the lowest levels at baseline (seldom, never), however, had improvements in co-workers prompting stair use over time (0.14 and 0.66 categories, on average), controlling for all other variables.

Co-workers suggesting walks at lunch and breaks over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers suggesting walks at lunch and breaks over time, controlling for participants' reported values for co-workers prompting stair use at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 219) = 5.31, p=0.000$), no associations between implementation success and co-workers suggesting walks at lunch and breaks were identified. Participants' perceptions of co-workers suggesting walks at lunch and breaks at baseline was significant in the model (Table 7.16, in Tables).

There was a significant relationship between co-workers suggesting walks at lunch and breaks, and changes in co-workers suggesting walks at lunch and breaks over time ($\beta = -0.60, p=0.000$). Participants who reported the highest levels at baseline had a 0.57 category reduction in co-workers suggesting walks at lunch and breaks over time on average, controlling for all other variables. Participants who reported the lowest levels at baseline (seldom, never), however, had improvements in co-workers suggesting walks at lunch and breaks over time (0.47 and 1.11 categories, on average), controlling for all other variables.

Co-workers hosting walking meetings over time. A multiple linear regression was conducted to test the association between implementation success and changes in participants' perception of co-workers hosting walking meetings over time, controlling for participants'

reported values for co-workers hosting walking meetings at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 219) = 5.31, p=0.000$), no associations between implementation success and change in co-workers hosting walking meetings over time were found. Participants' perceptions of co-workers hosting walking meetings at baseline and phase of study enrollment were significant in the model (Table 7.17, in Tables).

There was a significant relationship between co-workers hosting walking meetings, and changes in co-workers hosting walking meetings over time ($\beta = -0.71, p=0.000$). Participants who reported the highest levels at baseline had a 1.04 category reduction in co-workers hosting walking meetings over time on average, controlling for all other variables. Participants who reported the lowest levels at baseline (seldom, never), however, had improvements in co-workers hosting walking meetings over time (0.29 and 0.99 categories on average, respectively), controlling for all other variables.

There was also a significant relationship between full trial study participants and perceptions of co-workers hosting walking meetings over time ($\beta = 0.50, p=0.002$). Full trial participants had on average a 0.50 category improvement in their perceptions of co-workers hosting walking meetings over time compared to pilot study participants, controlling for all other variables.

Job Satisfaction

Participants were asked to report their overall job satisfaction on a 7-point likert scale (1=extremely dissatisfied, 7=extremely satisfied). Responses were collapsed into 5 categories to allow for clearer analysis. A multiple linear regression was conducted to test the

association between implementation success and changes in participants' job satisfaction over time, controlling for participants' job satisfaction at baseline, phase of study enrollment, age, gender, education, household income, BMI category, and participants' adherence to PA guidelines at baseline. While the overall model was found to be significant ($F(20, 215) = 3.44$, $p=0.000$), no associations between implementation success and changes in job satisfaction over time were found. Participants' job satisfaction at baseline was significant in the model (Table 7.18, in Tables).

There was a significant relationship between participants' job satisfaction at baseline, and changes in job satisfaction over time ($\beta = -0.42$, $p=0.000$). Participants who reported the highest levels of job satisfaction at baseline had a 0.49 category reduction in job satisfaction over time on average, controlling for all other variables. Participants who reported the lowest levels at baseline (slightly dissatisfied, extremely dissatisfied), however, had improvements in job satisfaction over time (0.81 and 0.87 categories on average, respectively), controlling for all other variables.

Management Support

Participants were asked to answer the following question: "How supportive do you think management is of the WORKING Project?" Responses were coded on a 3-point likert scale. This question was recently incorporated into participant data collection efforts and was only included in 6-month follow-up surveys. Therefore, responses were collected for only 248 participants who participated in the full trial study phase 6-month data collection. A multiple regression model was conducted to determine whether implementation success was associated with participants' perception of management support for their worksite's PA strategies. The model controlled for gender, ethnicity, BMI category (ideal/normal, overweight, or obese), and participants'

adherence to PA guidelines at 6-month follow-up. Covariates that were present in previous models were omitted from this model to address collinearity issues and to ensure a proper model fit for the relatively small sample size (n=248) of the dependent variable. No responses were obtained from model adopter worksites therefore participants from fair adopter worksites served as the reference group for analysis. The overall model was not significant, and no significant associations between implementation success and management support were found. Ethnicity was significant in the model (Table 7.19, in Tables).

There was a significant relationship between Latino/Hispanic participants and management support for the WORKING Project. Latino/Hispanic participants reported, on average, a slightly higher degree of management support for WORKING (3.00 out of 3.00) compared to African Americans, Asian Americans, and Caucasian/Whites (2.57, 2.33, and 2.50 on average, respectively), controlling for all other variables.

Worksite Physical Activity Policies and Practices

Three representatives from each worksite enrolled in the WORKING Project were asked to complete a Worksite Wellness Assessment (WWA) that assessed the presence (or absence) of physical activity policies, practices, norms, and environments. WWAs were distributed to worksites at baseline and follow-up data collections and worksite key contacts were instructed to distribute the WWA to the same representatives at each time point. The fidelity of the data obtained from the WWAs was found to be questionable for a number of reasons: discordant responses from representatives at each worksite, missing or incomplete assessments, differing respondents at each time point, and ambiguous responses (e.g. participant wrote in a indecipherable response instead of checking a box). To ensure that the most reliable data were used for these analyses, assessments obtained from four known representatives at four different

worksites (representing each implementation success category) were selected for analysis. The representatives whose assessments were selected for analysis were considered to be the most informed about wellness policies and practices at their worksite. In addition, the majority of these representatives (3 of 4) were recruited as key informants for the phone interviews conducted as part of Specific Aim #1 for this dissertation project (see Chapters 5 and 6). A total of 4 questions were selected for analysis (Table 7.20):

Table 7.20: Questions obtained from the Worksite Wellness Assessment (WWA)

Question Group	Question Text
Physical Activity Environment: Exercise Breaks	Are exercise breaks normally conducted during meetings or at pre-designated times of the day?
Physical Activity Environment: Walking Meetings	Does the worksite have walking meetings?
Workplace Norms: Casual Dress	Does the worksite support or encourage the use of casual dress (e.g. no heels, no ties) during work hours?
Workplace Norms: Fidgeting allowed	Does the worksite culture support or encourage standing, stretching and/or fidgeting during meetings?

Fisher's exact tests were conducted to determine if there were any relationships between the respondents' assigned worksite implementation success categories and changes over time in the selected questions: presence of exercise breaks, presence of walking, meetings, policy for casual dress, and worksite culture supporting fidgeting. There was no statistically significant relationship between implementation success and change in exercise breaks over time ($p=1.00$). There was no change in response for presence of walking meetings and casual dress policy among any of the implementation categories. There was no statistically significant relationship between implementation success and changes in worksite culture supporting fidgeting over time ($p=1.00$). Small sample size ($n=4$) may have contributed to the lack of significant findings.

CHAPTER 8: Discussion and Conclusion

The objectives of this project were, utilizing mixed qualitative and quantitative methods, to examine how worksites implemented physical activity practices and policies into their standard conduct of business; understand who was involved in the implementation process and how they operated; explore the most relevant factors that aided or discouraged implementation; and determine if the degree to which worksites successfully implemented strategies influenced individual and organizational outcomes. These efforts were intended to enhance our understanding of the complex, dynamic nature of health and human service organizations and explore how physical activity promotion efforts might be strategically positioned within these settings to maximize reach, influence sociocultural norms, and ultimately realize robust improvements in health indicators and behavioral outcomes.

Discussion of Relevant Findings

The four implementation success categories discussed throughout this study suggests that worksites had varying degrees of success in implementing the physical activity breaks and breaks at meetings. A number of organizational and intervention-related factors contributed to this diversity of implementation success.

Role and action of middle managers. The middle managers interviewed in this project shared many of the same attributes that were discussed by Birken et al (2012) in their investigation of middle managers in healthcare settings. Middle managers operated as master communicators for their worksites, exercised strategy and influence on front-line staff to ensure organizational priorities and objectives were met, and played a key role in supporting the implementation of new strategies such as physical activity breaks on paid time. When middle managers actively engaged with program champions throughout the implementation process,

personally participated in activities, and were willing to advocate for the PA strategies at the managerial and leadership level, worksites tended to more successfully implement PA breaks and deal with challenges that emerged throughout the process. On the other hand, middle managers who were less actively involved in the implementation process, chose not to (or could not) participate regularly in physical activity breaks, and failed to vigorously advocate for the PA strategies were unable to adequately support their program champions and implementation efforts tended to suffer.

Circumstances that help to explain why managers may or may not have engaged in the implementation are noteworthy. It appears that middle managers were heavily influenced by an ever-evolving agenda of priorities that they may not have had an active role in shaping, and their role in these supporting these priorities may have been handed down to them in a rigid, “top-down” unidirectional fashion by executive leadership and others in upper management. In addition, they were responsible for ensuring key responsibilities and deliverables were being met, and were held accountable for the conduct and performance of their front-line staff. Such heavy responsibilities may have limited or discouraged some managers from taking on additional “extracurricular” responsibilities, that is, unless their leaders deemed those additional responsibilities a priority. Exploring this relationship between middle managers and executive leaders in prioritizing PA strategies may be a worthwhile area for future investigation considering the positive implications of having motivated and empowered middle managers involved in the implementation process.

Role of program champions. Program champions were vitally important to the implementation process in that they carried the lion’s share of the responsibility for ensuring the PA strategies were maintained, staff remained engaged and excited, and challenges that emerged

were addressed expeditiously. Program champions who felt supported in their efforts by managers, leaders, and other employees and received the recognition and tangible resources they desired were more successful in facilitating activities than champions who did not have support from management. Similar to middle managers, program champions also faced challenges in balancing their work demands with their commitments to supporting the PA strategies. Program champions who were either strongly committed personally to wellness and/or had managerial support were able to negotiate the job/role tension and continue to support the PA strategies. Champions who were not as committed personally and/or did not have support (or faced opposition) succumbed to the job/role tension and could not maintain the strategies for their worksite.

Factors associated with implementation success. Program champions and middle managers cited a number of factors that impacted implementation at their worksites. Explicitly stated, clearly articulated policy statements, MOUs, and other directives were associated with successful implementation of PA strategies. These policies were necessary to legitimize the PA strategies and secure support from managers. Informants also identified the significance of their sites having pre-existing wellness infrastructure to anchor the new PA strategies. Above all other factors, leadership support was the strongest reported indicator of implementation success. Informants across all categories cited the importance of having managers and leaders ready and willing to advocate for and prioritize PA breaks, troubleshoot challenges at the managerial level, and enthusiastically support employee participation through verbal encouragement and by participating alongside front-line staff. These efforts characterize the “boisterous leader” and “sparkplug” described in Yancey’s Meta-Volition Model (2009). Program champions and middle managers relied on the administrative influence, tenacity, and “sharp elbows” of these leader

advocates to keep the PA strategies on the agenda of the organization, hold other leaders accountable, and ensure that PA break facilitators had the resources they needed to sustain the activities. When these advocates were not present, program champions and middle managers had a very difficult time navigating through all of the challenges and barriers that eventually emerged, and as a result the PA strategies failed to gain traction as a priority or become institutionalized within the organization.

Relationships between implementation success and individual/organizational outcomes.

The primary goal of the quantitative analyses was to determine whether the degree of implementation success influenced several individual- and organizational-level physical activity-related outcomes. Although no significant associations between implementation success and changes over time in the degree of participants' adherence to MVPA guidelines were found, it appears that a significantly higher proportion of non-adherent participants became adherent to the PA guidelines over time (69.5%) compared to those who regressed from adherence at baseline to non-adherence at follow-up (14.8%). This trend suggests that the WORKING Project may have contributed to increases in physical activity among the most sedentary individuals employed at participating worksites. The degree of implementation success was significantly associated with changes in BMI, systolic blood pressure, and weight over the 6-month observation period. Regarding changes in BMI and weight over time, participants in model and fair adopter worksites had reductions over time, while participants in poor and wipeout worksites did not. This suggests that the "dosage" of intervention received may have influenced the degree of change in clinical outcomes over time. However, in the case of systolic blood pressure poor adopters had greater reductions in systolic BP over time compared to model adopters, whereas fair adopters and wipeouts did not. These findings suggest that either systolic BP may not have

been as sensitive to modest increases in PA brought on by the intervention, or other factors not accounted for in the regression model may have impacted changes over time. Implementation success was also associated with improved employee perceptions of co-workers initiating or leading PA breaks over the 6-month observation period. This finding was expected, as one of the primary goals of the WORKING project was to modify worksite social and cultural norms to prioritize PA breaks and interrupt opportunities for prolonged sitting and sedentariness throughout the work day. It appears that worksites that had more success in implementing activities instigated social support among co-workers to continue leading PA breaks.

All other associations involving implementation success were not statistically significant. One explanation for this lack of statistically significant findings is the length of the observation period. Sustained efforts inside and outside of the workplace may be necessary to realize robust changes in body composition, cardiorespiratory fitness, physical activity behaviors, and workplace practices, policies, and social norms. Therefore, significant effects may not present within a relatively short 6-month time frame. The same can be said regarding the dosage of physical activity provided by the PA strategies. Although the literature suggests that accumulating 10-minute bouts of physical activity may elicit favorable changes in body composition, metabolic biomarkers, and physical activity behaviors, one must consider how consistently participants are engaging in the bouts of activity and whether other physical activity efforts (e.g. leisure time PA) are mediating the effects on these outcomes. In my observations of worksites engaged in WORKING, the frequency of PA breaks and employee participation rates varied greatly across worksites, and the “reach” of participation rarely extended beyond 25-30% of the total workforce at any site. Efforts must be made to ensure PA breaks occur consistently, are delivered at a moderate intensity, reach the majority of staff present at participating

worksites, and are structured in such a way as to encourage “spillover” of increased physical activity into employees’ leisure time and non-work activities in order to maximize the likelihood of realizing significant improvements in body composition, fitness, and metabolic biomarkers.

Several significant associations between some of the predictor variables (e.g. gender, BMI, education, ethnicity, baseline values of outcomes) and the outcomes of interest are worthy of discussion. It appears that the intervention may have favored females, obese individuals, employees at lower education levels, Latinos, and those who reported the lowest levels of co-worker social support, physical activity, and job satisfaction. These subgroups are consistently cited in the literature as being disproportionately at higher risk of sedentariness and obesity and may have “more to gain” from participating in an intervention such as the WORKING Project. These significant findings are noteworthy because the WORKING Project was specifically designed to engage the most sedentary employees and those at highest risk of obesity and its related co-morbidities.

In summary, there is some evidence to suggest that the degree of implementation success may have some relationship with individual physical-related outcomes; however, these relationships need to be further examined using more sophisticated analyses to substantiate the results.

Recommendations to DPH and Other Organizations

One of the purposes of this project was to provide practical, evidence-based recommendations to the Los Angeles Department of Public Health (DPH) and other organizations looking to implement PA “active by default” or “push” strategies into their own organizational structure or to disseminate strategies broadly. The following recommendations

reflect the most relevant findings and observations of this study and should be considered for future implementation and dissemination efforts.

Recommendation #1: Determine organizational readiness prior to implementing strategies

The findings of this project suggest that worksites are not identical in terms of their physical layout, social climate, organizational priorities, leadership structure, and enthusiasm for organizational norm change. A number of factors should be considered to assess how receptive leaders and employees are to integrating PA into their standard conduct of business, and how prepared the worksite is to accommodate the PA strategies for long-term sustainability. Choosing to only engage worksites and work units that are “ready” to implement may make the best use of the precious money, time, and resources necessary to support and sustain physical activity push strategies. The following items can be considered “selection criteria” to determine readiness for adopting and implementing PA strategies on paid company time:

- a) *Assess organizational fit*: Engage key contacts within the organization (e.g. human resources, assistants to executive leadership, etc.) to get a sense of how the mission of the organization is carried out and what the highest priorities and objectives are for leaders and managerial staff. In addition, conduct research to identify any persistent challenges or concerns for the organization (e.g. worksite injuries, absenteeism, low staff morale, etc.) Do these priorities and objectives align or “fit” well with the PA strategies? Can the PA strategies directly address any of the organization’s persistent challenges or concerns? If a natural fit is determined, the worksite may be most receptive to adopting and supporting PA strategies. If the PA strategies do not fit the organization, worksite leaders and employees may be less likely to prioritize the implementation process.

- b) *Identify the major communication channels for the organization:* Assess the frequency of meetings and face-to-face interactions between leaders, managers, and front line staff, and investigate the communication channels leaders and decision-makers use to set directives and articulate priorities for the organization. If communication channels are well defined, used consistently by leaders and employees, and effectively diffuse relevant information there may be greater opportunity to integrate the PA strategies in multiple areas of the organization. If communication is sparse and vague, PA strategies may not be able to diffuse readily across all segments of the organization.
- c) *Assess the receptiveness of leaders and managers to support PA strategies:* Establish contact with leaders and managers as soon in the “recruitment” process as possible. It is crucial that leaders are informed of the basic tenets of the PA strategies, understand their role in the implementation process, and have ample opportunity to respond with questions, concerns, and comments. If leaders and managers are willing take time out of their schedules to be informed about the strategies and actively engage in the strategy/policy adoption process, they may be more likely to stay engaged throughout the implementation process. However, if leaders show little interest at the onset, do not respond to phone calls and e-mails in a timely fashion, opt out of face-to-face interactions, and/or openly protest or challenge certain parameters of the PA strategy integration (e.g. paid company time being allotted for PA breaks, PA breaks and breaks at meetings being legitimized through enforceable policy, etc), they may be less likely to support the PA strategies and role-model participatory behavior for their employees when the strategies are set in place.

- d) *When assessing organizational readiness and conducting “research” on prospective worksites, garner input from multiple key informants within the organization.* It is important to gather vital information and perspectives from key informants at different levels of the organizational hierarchy. What may be considered common, customary, and beneficial to one group of employees may be perceived as asinine, unimportant, and irrelevant to another group of employees so it behooves change agents to carefully select informants and triangulate their feedback to determine convergent and divergent themes.
- e) *Develop an organizational readiness tool.* A readiness tool is recommended to efficiently obtain vital information, analyze relevant data, and make decisions based on the findings. The readiness tool may take numerous forms, so long as it can be used with ease, allows for multiple responders (e.g. leaders, key contacts, front-line staff, and project facilitators), is not burdensome to responders, and provides feedback that is beneficial to both the organization conducting the assessment and the organization that is being assessed. Program champions, managers, and leaders at worksites who have previously engaged in implementing PA strategies have expressed how important it is to be offered some type of feedback (positive or negative) whenever they are asked to participate in assessments and data collections. By providing feedback to organizations (even to those that do not “make the cut” despite their interest and enthusiasm), worksite leaders and key contacts may be more cooperative in future efforts.

Recommendation #2: Make outreach and rapport with managerial-level staff a key implementation objective.

Efforts should be taken by project staff to maintain a lively, consistent rapport with leaders to ensure they remain focused on the PA strategies, receive regular feedback on implementation progress, remain aware of challenges, and are given an opportunity to assist in

troubleshooting. Upper management being accessible to program champions in overcoming resistance was a key to implementation success. Attempt to secure a brief slot (5-10 minutes) on the agenda of managers' meetings where program champions and other change agents can exchange information with leaders and air out any concerns in person, as well as model "leading by example."

Recommendation #3: Provide support to middle managers and program champions to manage job/role tension challenges

Middle managers and program champions across all implementation categories expressed having challenges in balancing their time between prioritized work-related tasks and their roles as facilitators and advocates for the PA strategies. Negotiating this balance was linked to implementation success, so efforts should be made to incorporate skills-building opportunities and resources that address job/role tension into program champions training and outreach to middle managers. Resources such as Dr. Joel Bennett's Organizational Wellness & Learning Systems (OWLS) (<http://www.organizationalwellness.com>) offer powerful tools to empower worksite champions and middle managers in their worksite wellness-related roles.

Recommendation #4: Strategically engage organizational assets when building capacity to support the PA strategies

Program champions and manager advocates are tasked with anchoring PA strategies within the culture of their worksite amidst competing organizational priorities, overworked employees, and physical environments that may not be conducive to physical activity (e.g. no access to stairs, lack of open space, safety concerns outside of the facility, etc.) As early as possible in the implementation process, champions should build a coalition of concerned employees, managers, and leaders willing to commit to either participate regularly, assist in facilitating activities, or volunteer their influence and input to brainstorm and execute solutions

to implementation barriers. Building a coalition of wellness champions across all levels of the organization ensures that program champions have ample support to handle daily PA breaks, and that key decision-makers are in place to advocate at the managerial level. A great example of this type of coalition building can be found by examining the Kaiser Permanente South Bay Health Center (KP South Bay) integration of *Instant Recess*[®] physical activity breaks (Yancey, 2012, in press). As part of her implementation strategy, KP South Bay's wellness coordinator established a strategic partnership with several of the health center's unit-based teams (UBTs) to assist in implementation. UBTs were comprised of departmental employees, union representatives, and managers charged with working collectively toward established department goals and objectives (Yancey, 2012, in press). Collective bodies like the UBTs are instrumental in brainstorming logistics, identifying potential barriers, engaging key staff, and troubleshooting challenges as they emerge. By establishing a bridge of communication with the UBTs, the wellness coordinator acquired powerful allies who were devoted to carrying out the PA strategies and already had leverage within the work units to engage employees. Brokering these types of relationships may require an initial investment of time and effort; however, if the relationships do materialize and can be maintained over time the likelihood of sustaining PA strategies long-term may dramatically improve.

Study Limitations and Considerations

A number of limitations should be considered in this study. First, the study focused on the experiences of health and human services worksites; relevant findings and observations may not be generalizable to other organizational settings. However, this study explores issues and topics that may be relevant to a broad range of organizational settings. For example, the current economic recession has impacted nearly all sectors of the American workforce and raised

concerns about employee health and productivity (e.g. job strain, overworked employees, etc.). Findings and recommendations from this project may help to address these concerns, and thus may be generalizable far beyond the scope of health and human services organizations.

Second, the sample size of organizations was less than optimal, as less than half of the full trial data were available at the time of this dissertation. In addition, pilot study and full-scale trial data were aggregated, but cohort effects may have impacted the results; significant changes to data collection protocol and intervention implementation activities were made between and throughout the pilot study and full-scale trial phases of the study. Also, the analyses only included 6-months of observation for full-scale trial participants when their full intervention period lasted 12 months.

Lastly, most of the data from the process evaluation used to classify worksites into WORKING implementation success categories were obtained through self-report by program champions at each worksite. These data may be subject to social desirability bias, and may not reflect the insights and opinions of all members of the organization.

Implications for the Field and Future Directions

This dissertation was written primarily to inform the practical application of organizational-level physical activity promotion strategies, and to offer valuable context and tangible “evidence” to advocate for the creation of policies to support and legitimize PA strategies. Opportunities to directly apply the knowledge generated in this project are abundant. A plethora of healthcare organizations, hospital systems, community based health and human services agencies, schools, faith-based organizations, and health departments across the country are currently implementing (or preparing to implement) *Instant Recess*[®] brief physical activity breaks into organizational routine. Findings from this study may help these organizations address

persistent challenges they have faced in their implementation process, or offer valuable insight to organizations which are considering but have yet to implement *Instant Recess*[®] activity breaks.

This project also opens up numerous opportunities for future research and investigation. Additional research needs to be conducted to better understand the perceptions and motivations that drive top-level leaders to support (or not support) physical activity push strategies. This project merely touched the surface of exploring the roles of middle managers in managing PA promotion strategies; more in-depth research may be necessary to understand how middle managers can best engage in the process to support the implementation of PA strategies. And lastly, the perception and motivations of front-line staff employees regarding their decisions to participate or not participate in agency-sponsored physical activity on paid time were not addressed in this project; future research can be conducted to investigate what strategies can be employed to maximize employee engagement and participation.

Conclusion

Health and human services organizations are complex, dynamic environments that possess elements that can act as assets to encourage push strategies, or barriers that can potentially derail implementation efforts. Care and attention must be paid to ensure that physical activity strategies: are structured and executed in a manner that align with the assets and priorities of the organization; encourage leaders and managers to support rather than ignore or undermine implementation; are responsive to challenges and barriers, and can sufficiently engage employees to elicit robust improvements in individual and organizational-level outcomes.

Table 5.2: Demographics for Pilot Study Worksites*

Worksite Name (descriptor)	# of Employees	% African Americans	%Caucasian White	% Hispanic Latino	% Asian/PI	Intervention Group	Implement. Category
County Public Health Clinic (WHC)	80	--	--	--	--	Interv.	Model Adopt.
Community Network for Cancer Screening (PFP)	10	--	--	--	--	Interv.	Model Adopt.
Health-related Programming for Families (MCAH)	100	--	--	--	--	Interv.	Model Adopt.
Health-related Programming for Women (OWH)	20	--	--	--	--	Interv.	Fair Adopt.
Economic and Social Justice Advocacy Org - 4 sites (LAUL)	110	--	--	--	--	Interv.	Fair Adopt.
Multipurpose Senior Center: mult. Sites (DST)	315	--	--	--	--	Interv.	Fair Adopt.
Administration Unit (HEA)	87	--	--	--	--	Interv.	Fair Adopt.
Childcare Center in Public Housing (NG)	32	--	--	--	--	Interv.	Fair Adopt.
LAC Preventive Health Unit	96	--	--	--	--	Interv.	Poor Adopt.
Personnel Unit (ODT)	100	--	--	--	--	Interv.	Poor Adopt.
Community Development Agency (ECH)	40	--	--	--	--	Interv.	Poor Adopt.
County Public Health Clinic (CTHC)	52	--	--	--	--	Interv.	Poor Adopt.
County Public Health Clinic (SHC)	80	--	--	--	--	Interv.	Wipeout
Childcare Advocacy Org (CS)	350	--	--	--	--	Interv.	Wipeout
Parks and Recreation Unit (DPR)	125	--	--	--	--	Interv.	Wipeout

* Data not reported for all worksites enrolled in the study. A number of worksites did not complete (or did not fully complete) the worksite recruitment profile from which these data were obtained.

Table 5.3: Demographics for Full-scale intervention trial worksites*

Worksite Name (descriptor)	# of Employees	% African Americans	%Caucasian White	% Hispanic Latino	% Asian/PI	Intervention Group	Implement. Category
LAC Disease Prevention Unit (TBC)	60	27%	12%	12%	42%	Interv.	Fair Adopt.
Substance Abuse Treatment CBO – 3 sites (MRC)	57	60%	20%	20%	0%	Interv.	Poor Adopt.
Childhood Educational Enrichment CBO (GCLA)	30	50%	1%	49%	0%	Interv.	Poor Adopt.
Social Services CBO (HOP)	45	94%	1%	4%	1%	Interv.	Wipeout
LAC Social Services Unit (DPSS)	188	20%	5%	60%	15%	Control	
LAC Human Resources Unit (DHR)	65	40%	5%	40%	10%	Control	
Substance Abuse Treatment CBO (HSA)	22	85%	1%	14%	0%	Control	
County Public Health Clinic	43	2%	18%	75%	5%	Control	

* Data not reported for all worksites enrolled in the study. A number of worksites did not complete (or did not fully complete) the worksite recruitment profile from which these data were obtained.

Table 7.1: Descriptive and demographic statistics by study phase and full merged sample

	WORKING Pilot Study	WORKING Full Trial Study	WORKING Merged Sample
Demographic	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Total No. Participants	387 (100%)	602 (100%)	989 (100%)
Age (years)			
30 years and younger	55 (15.03%)	77 (15.52%)	132 (15.31%)
31-45 years	142 (38.80%)	175 (35.28%)	317 (36.77%)
46-60 years	139 (37.98%)	206 (41.53%)	345 (40.02%)
61 years and older	30 (8.20%)	38 (7.66%)	68 (7.89%)
Total			
Gender			
Male	37 (9.56%)	102 (16.94%)	139 (14.05%)
Female	350 (90.44%)	500 (83.06%)	850 (85.95%)
Total	387	602	989
Ethnicity			
African American	151 (39.84%)	152 (29.29%)	303 (33.74%)
Caucasian/White	28 (7.39%)	57 (10.98%)	85 (9.47%)
Hispanic/Latino	126 (33.25%)	184 (35.45%)	310 (34.52%)
Asian/South Asian/PI	40 (10.55%)	98 (18.88%)	138 (15.37%)
Other ethnicity or multiethnic	34 (8.97%)	28 (5.39%)	62 (6.90%)
Total	379	519	898
Income (US \$)			
Low income (30K or less)	42 (11.67%)	83 (17.22%)	125 (14.85%)
Mid income (30K – 80 K)	183 (50.83%)	218 (45.23%)	401 (47.62%)
High income (80K or more)	135 (37.50%)	181 (37.55%)	316 (37.53%)
Total	360	482	842
Education Levels			
High school or less	33 (8.97%)	67 (13.43%)	100 (11.53%)
College graduate	245 (66.58%)	346 (69.34%)	591 (68.17%)
Graduate school	90 (24.46%)	86 (17.23%)	176 (20.30%)
Total	368	499	867
U.S. Nativity			
U.S. born	254 (68.83%)	323 (64.86%)	577 (66.55%)
Foreign born	115 (31.17%)	175 (35.14%)	290 (33.45%)
Total	369	498	867
Marital Status			
Married/living together	189 (51.92%)	259 (52.22%)	448 (52.09%)
Widowed	11 (3.02%)	10 (2.02%)	21 (2.44%)
Divorced	56 (15.38%)	52 (10.48%)	108 (12.56%)
Separated	13 (3.57%)	26 (5.24%)	39 (4.53%)
Single/never married	95 (26.10%)	149 (30.04%)	244 (28.37%)
Total	364	496	860
Body Mass Index (BMI) (kg/m²)			
Ideal or Normal (BMI <25)	89 (24.12%)	160 (31.94%)	249 (28.62%)
Overweight (BMI 25-29.99)	114 (30.89%)	155 (30.94%)	269 (30.92%)
Obese (BMI >=30)	166 (44.99%)	186 (37.13%)	352 (40.46%)
Total	369	501	870

Table 7.2: Descriptive and demographic statistics by implementation success category

	Wipeouts	Poor Adopt.	Fair Adopt.	Model Adopt.
Demographic	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Total No. Participants	84	187	216	67
Age (years)				
30 years and younger	14 (19.18%)	19 (11.59%)	36 (19.57%)	9 (13.85%)
31-45 years	29 (39.73%)	59 (35.98%)	63 (34.24%)	30 (46.15%)
46-60 years	26 (35.62%)	67 (40.85%)	69 (37.50%)	18 (27.69%)
61 years and older	4 (5.48%)	19 (11.59%)	16 (8.70%)	8 (12.31%)
Total	73	164	184	65
Gender				
Male	15 (17.86%)	37 (19.79%)	26 (12.04%)	7 (10.45%)
Female	69 (82.14%)	150 (80.21%)	190 (87.96%)	60 (89.55%)
Total	84	187	216	67
Ethnicity				
African American	48 (65.75%)	73 (41.95%)	73 (37.63%)	18 (26.87%)
Caucasian/White	4 (5.48%)	27 (15.52%)	18 (9.28%)	11 (16.42)
Hispanic/Latino	16 (21.92%)	50 (28.74%)	64 (32.99%)	23 (34.33%)
Asian/South Asian/PI	0 (0.00%)	9 (5.17%)	23 (11.86%)	8 (11.94%)
Other ethnicity or multiethnic	5 (6.85%)	15 (8.62%)	16 (8.25%)	7 (10.45%)
Total	73	174	194	67
Income (US \$)				
Low income (30K or less)	10 (14.08%)	46 (28.40%)	23 (12.71%)	7 (11.11%)
Mid income (30K – 80 K)	37 (52.11%)	67 (41.36%)	95 (52.49%)	31 (49.21%)
High income (80K or more)	24 (33.80%)	49 (30.25%)	63 (34.81%)	25 (39.68%)
Total	71	162	181	63
Education Levels				
High school or less	5 (6.76%)	30 (17.96%)	21 (11.29%)	3 (4.69%)
College graduate	59 (79.73%)	112 (67.07%)	116 (62.37%)	37 (57.81%)
Graduate school	10 (13.51%)	25 (14.97%)	49 (26.34%)	24 (37.50%)
Total	74	167	186	64
U.S. Nativity				
U.S. born	67 (90.54%)	122 (73.05%)	132 (70.97%)	46 (70.77%)
Foreign born	7 (9.46%)	45 (26.95%)	54 (29.03%)	19 (29.23%)
Total	74	167	186	65
Marital Status				
Married/living together	34 (45.95%)	84 (50.91%)	88 (48.35%)	32 (49.23%)
Widowed	2 (2.70%)	4 (2.42%)	5 (2.75%)	1 (1.54%)
Divorced	7 (9.46%)	21 (12.73%)	25 (13.74%)	14 (21.54%)
Separated	5 (6.76%)	10 (6.06%)	6 (3.30%)	2 (3.08%)
Single/never married	26 (35.14%)	46 (27.88%)	58 (31.87%)	16 (24.62%)
Total	74	165	182	65
Body Mass Index (BMI) (kg/m²)				
Ideal or Normal (BMI <25)	9 (12.50%)	42 (25.45%)	62 (32.29%)	15 (22.39%)
Overweight (BMI 25-29.99)	27 (37.50%)	52 (31.52%)	62 (32.29%)	20 (29.85%)
Obese (BMI ≥30)	36 (50.00%)	71 (43.03%)	68 (35.42%)	32 (47.76%)
Total	72	165	192	67

Table 7.3: Descriptive and demographic statistics by intervention study group

	WORKING Intervention Group	WORKING Wait-list Control Group
Demographic	<i>n (%)</i>	<i>n (%)</i>
Total No. Participants	554 (100%)	435 (100%)
Age (years)		
30 years and younger	78 (16.05%)	54 (14.36%)
31-45 years	181 (37.24%)	136 (36.17%)
46-60 years	180 (37.04%)	165 (43.88%)
61 years and older	47 (9.67%)	21 (5.59%)
Total	486	376
Gender		
Male	85 (15.34%)	54 (12.41%)
Female	469 (84.66%)	381 (87.59%)
Total	554	435
Ethnicity		
African American	212 (41.73%)	91 (23.33%)
Caucasian/White	60 (11.81%)	25 (6.41%)
Hispanic/Latino	153 (30.12%)	157 (40.26%)
Asian/South Asian/PI	40 (7.87%)	98 (25.13%)
Other ethnicity or multiethnic	43 (8.46%)	19 (4.87%)
Total	508	390
Income (US \$)		
Low income (30K or less)	86 (18.03%)	39 (10.68%)
Mid income (30K – 80 K)	230 (48.22%)	171 (46.85%)
High income (80K or more)	161 (33.75%)	155 (42.47%)
Total	477	365
Education Levels		
High school or less	59 (12.02%)	41 (10.90%)
College graduate	324 (65.99%)	267 (71.01%)
Graduate school	108 (22.00%)	68 (18.09%)
Total	491	376
U.S. Nativity		
U.S. born	367 (74.59%)	210 (56.00%)
Foreign born	125 (25.41%)	165 (44.00%)
Total	492	375
Marital Status		
Married/living together	238 (48.97%)	210 (56.15%)
Widowed	12 (2.47%)	9 (2.41%)
Divorced	67 (13.79%)	41 (10.96%)
Separated	23 (4.73%)	16 (4.28%)
Single/never married	146 (30.04%)	98 (26.20%)
Total	486	374
Body Mass Index (BMI) (kg/m²)		
Ideal or Normal (BMI <25)	128 (25.81%)	121 (32.35%)
Overweight (BMI 25-29.99)	161 (32.46%)	108 (28.88%)
Obese (BMI >=30)	207 (41.73%)	145 (38.77%)
Total	496	374

TABLE 7.4: Did implementation success influence changes in BMI over time?

	Coef	Std Err	95% CI	P-val
Participant BMI at baseline	-0.04	0.03	-0.10, 0.03	0.250
Poor Adopter Worksites	-0.58	0.43	-1.43, 0.26	0.174
Fair Adopter Worksites	-0.93	0.43	-1.79, -0.08	0.032*
Model Adopter Worksites	-0.96	0.54	-2.02, 0.10	0.076
Full Trial Study Participants	0.07	0.27	-0.47, 0.60	0.811
High School Graduate or less	-0.83	0.46	-1.74, 0.07	0.071
Graduate School Education	-0.31	0.30	-0.89, 0.27	0.297
Low Income \$30,000 or less	0.23	0.36	-0.48, 0.93	0.527
High Income \$80,000 or more	0.40	0.28	-0.16, 0.96	0.157
African American Ethnicity	-0.35	0.38	-1.10, 0.40	0.361
White Ethnicity	-0.67	0.48	-1.62, 0.27	0.163
Latino/Hispanic Ethnicity	-0.25	0.38	-1.00, 0.51	0.519
Asian/Asian American Ethnicity	-0.35	0.75	-1.83, 1.12	0.636
Female Gender	0.09	0.38	-0.66, 0.84	0.818
Age 30 and under	-0.01	0.35	-0.71, 0.68	0.968
Age 46-60 years	0.06	0.29	-0.52, 0.63	0.849
Age 61 years and over	-0.02	0.49	-0.99, 0.94	0.964
Overweight BMI	0.09	0.36	-0.63, 0.81	0.807
Obese BMI	-0.23	0.53	-1.27, 0.81	0.667
Adherence to MVPA guidelines @ baseline	-0.19	0.28	-0.74, 0.36	0.486
Constant	2.08	0.97	0.17, 3.99	0.033*

N 248

F 1.239023

P .2238625

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' BMI over the 6-month observation period.

Table 7.5: Did implementation success influence changes in diastolic BP over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-2.29	1.90	-6.03, 1.46	0.231
Fair Adopter Worksites	-2.00	1.93	-5.81, 1.81	0.302
Model Adopter Worksites	-2.41	2.42	-7.18, 2.35	0.319
Participants' Diastolic BP at baseline	-0.27	0.06	-0.38, -0.17	0.000***
Full Trial Study Participants	0.20	1.23	-2.23, 2.62	0.874
High School Graduate or less	-5.33	2.05	-9.37, -1.28	0.010*
Graduate School Education	-2.13	1.31	-4.72, 0.46	0.106
Low Income \$30,000 or less	1.90	1.63	-1.32, 5.11	0.246
High Income \$80,000 or more	0.10	1.26	-2.39, 2.59	0.935
African American Ethnicity	-0.07	1.69	-3.40, 3.27	0.967
White Ethnicity	-4.48	2.15	-8.71, -0.25	0.038*
Latino/Hispanic Ethnicity	-2.06	1.70	-5.41, 1.30	0.228
Asian/Asian American Ethnicity	-2.77	3.34	-9.35, 3.81	0.408
Female Gender	-1.73	1.70	-5.08, 1.61	0.308
Age 30 and under	0.60	1.58	-2.53, 3.72	0.706
Age 46-60 years	3.36	1.33	0.75, 5.98	0.012*
Age 61 years and over	-0.34	2.17	-4.62, 3.94	0.875
Overweight BMI	-0.53	1.48	-3.44, 2.38	0.719
Obese BMI	1.64	1.52	-1.36, 4.64	0.283
Adherence to MVPA guidelines @ baseline	0.17	1.25	-2.30, 2.63	0.893
Constant	25.21	5.24	14.88, 35.54	0.000***

N 245

F 2.590594

P .0003697

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in diastolic BP over the 6-month observation period.

Table 7.6: Did implementation success influence changes in Systolic BP over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-5.98	2.96	-11.82, -0.14	0.045*
Fair Adopter Worksites	-4.10	3.02	-10.05, 1.84	0.175
Model Adopter Worksites	-3.08	3.76	-10.49, 4.34	0.415
Participants' Systolic BP at baseline	-0.20	0.05	-0.31, -0.10	0.000***
Full Trial Study Participants	0.90	1.92	-2.89, 4.70	0.639
High School Graduate or less	-10.72	3.19	-17.01, -4.43	0.001***
Graduate School Education	-3.90	2.05	-7.94, 0.13	0.058
Low Income \$30,000 or less	3.72	2.54	-1.27, 8.72	0.143
High Income \$80,000 or more	0.31	1.96	-3.56, 4.18	0.874
African American Ethnicity	-0.07	2.64	-5.27, 5.13	0.978
White Ethnicity	-6.34	3.34	-12.93, 0.25	0.059
Latino/Hispanic Ethnicity	-1.86	2.65	-7.07, 3.36	0.484
Asian/Asian American Ethnicity	-2.51	5.19	-12.74, 7.71	0.629
Female Gender	-5.29	2.69	-10.58, 0.01	0.050
Age 30 and under	-0.82	2.45	-5.65, 4.00	0.738
Age 46-60 years	4.92	2.11	0.76, 9.08	0.021*
Age 61 years and over	2.10	3.48	-4.76, 8.95	0.548
Overweight BMI	-2.33	2.29	-6.83, 2.17	0.309
Obese BMI	1.85	2.31	-2.70, 6.40	0.424
Adherence to MVPA guidelines @ baseline	-0.98	1.94	-4.81, 2.86	0.616
Constant	34.89	7.94	19.26, 50.53	0.000***

N 245

F 2.3332

P .0014815

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in systolic BP over the 6-month observation period.

Table 7.7: Did implementation success influence change in participants' weight (lbs) over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-1.65	2.32	-6.22, 2.93	0.479
Fair Adopter Worksites	-4.63	2.35	-9.27, 0.01	0.050
Model Adopter Worksites	-2.52	2.94	-8.30, 3.27	0.392
Participants' weight (lbs) at baseline	0.01	0.03	-0.05, 0.06	0.847
Full Trial Study Participants	0.56	1.49	-2.37, 3.49	0.708
High School Graduate or less	-3.69	2.49	-8.60, 1.23	0.141
Graduate School Education	-2.03	1.61	-5.21, 1.14	0.209
Low Income \$30,000 or less	-0.29	1.95	-4.13, 3.55	0.881
High Income \$80,000 or more	2.33	1.54	-0.70, 5.37	0.131
African American Ethnicity	-0.75	2.10	-4.89, 3.39	0.722
White Ethnicity	-3.37	2.63	-8.57, 1.82	0.202
Latino/Hispanic Ethnicity	-0.66	2.09	-4.77, 3.46	0.753
Asian/Asian American Ethnicity	0.36	4.07	-7.65, 8.38	0.929
Female Gender	-0.35	2.15	-4.58, 3.88	0.871
Age 30 and under	-0.02	1.92	-3.81, 3.77	0.992
Age 46-60 years	1.21	1.58	-1.90, 4.33	0.444
Age 61 years and over	-0.01	2.67	-5.27, 5.26	0.998
Overweight BMI	-1.01	1.96	-4.88, 2.86	0.609
Obese BMI	-4.12	2.80	-9.64, 1.41	0.144
Adherence to MVPA guidelines @ baseline	-0.14	1.52	-3.13, 2.85	0.927
Constant	4.39	5.93	-7.30, 16.09	0.460

N 248
 F 1.038722
 P .4177211
 Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' weight (lbs) over the 6-month observation period.

Table 7.8: Did implementation success influence change in participants' waist circumference over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	0.18	0.66	-1.13, 1.49	0.791
Fair Adopter Worksites	-0.45	0.71	-1.85, 0.95	0.526
Model Adopter Worksites	1.96	1.20	-0.40, 4.33	0.103
Participants' waist circ (in) at baseline	-0.15	0.05	-0.25, -0.04	0.006**
Full Trial Study Participants	0.45	0.46	-0.46, 1.36	0.327
High School Graduate or less	0.75	0.71	-0.66, 2.15	0.296
Graduate School Education	0.23	0.45	-0.66, 1.12	0.612
Low Income \$30,000 or less	-0.08	0.56	-1.17, 1.02	0.892
High Income \$80,000 or more	-0.14	0.40	-0.93, 0.65	0.721
African American Ethnicity	-0.87	0.52	-1.89, 0.16	0.096
White Ethnicity	-1.23	0.67	-2.55, 0.10	0.069
Latino/Hispanic Ethnicity	-1.14	0.51	-2.15, -0.12	0.029*
Asian/Asian American Ethnicity	-1.51	0.91	-3.31, 0.28	0.098
Female Gender	-0.67	0.53	-1.72, 0.38	0.208
Age 30 and under	0.44	0.53	-0.61, 1.50	0.405
Age 46-60 years	0.09	0.43	-0.75, 0.94	0.827
Age 61 years and over	0.76	0.70	-0.63, 2.15	0.282
Overweight BMI	0.83	0.50	-0.15, 1.82	0.097
Obese BMI	1.47	0.74	0.01, 2.93	0.048*
Adherence to MVPA guidelines @ baseline	-0.03	0.39	-0.80, 0.74	0.943
Constant	5.43	1.90	1.67, 9.18	0.005**

N

176

F

1.601255

p

.0584847

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' waist circumference (in) over the 6-month observation period.

Table 7.9: Did implementation success influence change in participants' cardiorespiratory fitness (CF) over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-0.10	0.28	-0.66, 0.46	0.719
Fair Adopter Worksites	-0.10	0.29	-0.66, 0.47	0.734
Model Adopter Worksites	-0.23	0.32	-0.87, 0.42	0.488
Participants' cardiorespiratory fitness a	-0.71	0.11	-0.92, -0.50	0.000***
Full Trial Study Participants	0.35	0.15	0.05, 0.65	0.024*
High School Graduate or less	0.15	0.27	-0.38, 0.68	0.573
Graduate School Education	0.06	0.13	-0.20, 0.33	0.646
Low Income \$30,000 or less	-0.19	0.19	-0.58, 0.19	0.322
High Income \$80,000 or more	-0.22	0.13	-0.48, 0.05	0.106
African American Ethnicity	0.13	0.17	-0.20, 0.46	0.431
White Ethnicity	0.42	0.22	-0.02, 0.87	0.061
Latino/Hispanic Ethnicity	0.27	0.16	-0.04, 0.59	0.088
Asian/Asian American Ethnicity	0.36	0.27	-0.18, 0.91	0.189
Female Gender	0.45	0.21	0.03, 0.87	0.036*
Age 30 and under	-0.08	0.15	-0.37, 0.22	0.609
Age 46-60 years	-0.04	0.15	-0.34, 0.27	0.815
Age 61 years and over	-0.27	0.26	-0.78, 0.24	0.300
Overweight BMI	-0.07	0.14	-0.34, 0.20	0.616
Obese BMI	-0.05	0.15	-0.35, 0.26	0.765
Adherence to MVPA guidelines @ baseline	0.17	0.14	-0.11, 0.45	0.222
Constant	2.54	0.53	1.48, 3.60	0.000***

N 103

F 3.497783

p .0000318

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' cardiorespiratory fitness (CF) category over the 6-month observation period.

Table 7.11: Did implementation success influence change in participants' perception of co-workers complimenting PA over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-0.07	0.20	-0.45, 0.32	0.735
Fair Adopter Worksites	-0.24	0.20	-0.63, 0.16	0.234
Model Adopter Worksites	0.20	0.25	-0.28, 0.69	0.407
Co-workers complimenting PA at baseline	-0.58	0.06	-0.69, -0.47	0.000***
Full Trial Study Participants	0.16	0.12	-0.09, 0.40	0.209
High School Graduate or less	-0.09	0.21	-0.50, 0.31	0.659
Graduate School Education	0.02	0.13	-0.24, 0.28	0.873
Low Income \$30,000 or less	0.17	0.17	-0.15, 0.50	0.301
High Income \$80,000 or more	0.26	0.13	0.01, 0.52	0.043*
African American Ethnicity	-0.03	0.18	-0.38, 0.32	0.865
White Ethnicity	0.08	0.22	-0.35, 0.52	0.699
Latino/Hispanic Ethnicity	0.02	0.18	-0.33, 0.37	0.900
Asian/Asian American Ethnicity	-0.52	0.34	-1.18, 0.15	0.128
Female Gender	0.26	0.17	-0.08, 0.60	0.129
Age 30 and under	0.03	0.16	-0.29, 0.34	0.867
Age 46-60 years	-0.14	0.13	-0.40, 0.12	0.298
Age 61 years and over	-0.06	0.24	-0.53, 0.40	0.792
Overweight BMI	-0.02	0.15	-0.31, 0.28	0.900
Obese BMI	0.15	0.15	-0.14, 0.45	0.296
Adherence to MVPA guidelines @ baseline	-0.00	0.13	-0.25, 0.25	0.984
Constant	1.45	0.34	0.78, 2.12	0.000***

N 243

F 7.392157

P 7.68e-16

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers complimenting their attempts at PA over the 6-month observation period.

Table 7.12: Did implementation success influence change in perception of co-workers suggesting PA over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	0.23	0.23	-0.21, 0.68	0.305
Fair Adopter Worksites	0.30	0.23	-0.16, 0.76	0.200
Model Adopter Worksites	0.51	0.28	-0.04, 1.07	0.071
Co-workers suggesting PA at baseline	-0.67	0.06	-0.80, -0.55	0.000***
Full Trial Study Participants	0.28	0.14	-0.00, 0.57	0.051
High School Graduate or less	-0.14	0.24	-0.61, 0.33	0.551
Graduate School Education	0.20	0.15	-0.10, 0.50	0.196
Low Income \$30,000 or less	0.34	0.19	-0.03, 0.72	0.073
High Income \$80,000 or more	0.04	0.15	-0.25, 0.33	0.796
African American Ethnicity	-0.11	0.20	-0.51, 0.29	0.586
White Ethnicity	0.20	0.25	-0.30, 0.69	0.428
Latino/Hispanic Ethnicity	0.17	0.20	-0.23, 0.58	0.391
Asian/Asian American Ethnicity	0.30	0.39	-0.47, 1.06	0.443
Female Gender	0.43	0.20	0.04, 0.82	0.032*
Age 30 and under	-0.08	0.18	-0.44, 0.29	0.668
Age 46-60 years	-0.07	0.15	-0.37, 0.23	0.636
Age 61 years and over	-0.61	0.27	-1.14, -0.09	0.022*
Overweight BMI	0.17	0.17	-0.17, 0.51	0.335
Obese BMI	0.43	0.17	0.10, 0.77	0.011*
Adherence to MVPA guidelines @ baseline	0.13	0.15	-0.16, 0.42	0.368
Constant	0.62	0.38	-0.13, 1.37	0.103

N 242

F 7.267397

P 1.55e-15

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers suggesting PA over the 6-month observation period.

Table 7.13: Did implementation success influence change in participants' perception of co-workers initiating or leading PA breaks over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	0.23	0.23	-0.22, 0.67	0.322
Fair Adopter Worksites	0.40	0.23	-0.06, 0.86	0.090
Model Adopter Worksites	1.30	0.29	0.74, 1.86	0.000***
Co-workers leading PA breaks at baseline	-0.69	0.06	-0.81, -0.57	0.000***
Full Trial Study Participants	0.51	0.14	0.23, 0.79	0.000***
High School Graduate or less	-0.07	0.24	-0.53, 0.40	0.783
Graduate School Education	0.31	0.15	0.02, 0.61	0.039*
Low Income \$30,000 or less	-0.12	0.19	-0.49, 0.25	0.533
High Income \$80,000 or more	0.04	0.15	-0.26, 0.34	0.786
African American Ethnicity	-0.08	0.20	-0.48, 0.32	0.705
White Ethnicity	0.34	0.25	-0.16, 0.84	0.178
Latino/Hispanic Ethnicity	0.08	0.20	-0.32, 0.49	0.678
Asian/Asian American Ethnicity	-0.06	0.38	-0.82, 0.69	0.866
Female Gender	0.26	0.20	-0.13, 0.65	0.187
Age 30 and under	0.14	0.18	-0.22, 0.50	0.446
Age 46-60 years	0.19	0.15	-0.11, 0.48	0.212
Age 61 years and over	0.21	0.26	-0.31, 0.73	0.421
Overweight BMI	0.15	0.17	-0.18, 0.49	0.376
Obese BMI	0.26	0.17	-0.08, 0.59	0.132
Adherence to MVPA guidelines @ baseline	-0.03	0.14	-0.31, 0.26	0.849
Constant	1.01	0.37	0.28, 1.75	0.007***

N 242

F 9.483211

P 1.95e-20

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers initiating or leading PA breaks over the 6-month observation period.

Table 7.14: Did implementation success influence change in participants' perception of co-workers encouraging more PA over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	0.14	0.22	-0.28, 0.57	0.513
Fair Adopter Worksites	0.01	0.22	-0.43, 0.45	0.967
Model Adopter Worksites	0.29	0.27	-0.24, 0.82	0.283
Co-workers encouraging more PA at baseline	-0.59	0.06	-0.71, -0.48	0.000***
Full Trial Study Participants	0.26	0.13	-0.01, 0.52	0.058
High School Graduate or less	-0.05	0.22	-0.49, 0.39	0.829
Graduate School Education	0.08	0.14	-0.21, 0.36	0.590
Low Income \$30,000 or less	0.23	0.18	-0.12, 0.58	0.190
High Income \$80,000 or more	-0.00	0.14	-0.28, 0.27	0.983
African American Ethnicity	-0.37	0.19	-0.75, 0.01	0.054
White Ethnicity	-0.12	0.24	-0.59, 0.35	0.608
Latino/Hispanic Ethnicity	-0.10	0.19	-0.48, 0.28	0.605
Asian/Asian American Ethnicity	0.01	0.37	-0.71, 0.73	0.985
Female Gender	0.20	0.19	-0.17, 0.57	0.285
Age 30 and under	0.12	0.17	-0.22, 0.46	0.476
Age 46-60 years	0.03	0.14	-0.25, 0.31	0.849
Age 61 years and over	0.15	0.25	-0.34, 0.64	0.537
Overweight BMI	-0.02	0.16	-0.34, 0.30	0.900
Obese BMI	0.54	0.16	0.23, 0.86	0.001***
Adherence to MVPA guidelines @ baseline	-0.22	0.14	-0.49, 0.05	0.108
Constant	1.33	0.35	0.64, 2.02	0.000***

N 243
 F 7.190733
 P 2.24e-15
 Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers encouraging more PA over the 6-month observation period.

Table 7.15: Did implementation success influence change in participants' perception of co-workers prompting stair use over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-0.04	0.23	-0.49,0.41	0.873
Fair Adopter Worksites	0.12	0.23	-0.33,0.56	0.610
Model Adopter Worksites	0.25	0.28	-0.30,0.81	0.364
Co-workers prompting stair use at baseline	-0.48	0.06	-0.60,-0.36	0.000***
Full Trial Study Participants	0.08	0.14	-0.20,0.37	0.560
High School Graduate or less	0.01	0.23	-0.45,0.48	0.958
Graduate School Education	0.24	0.15	-0.06,0.54	0.113
Low Income \$30,000 or less	0.32	0.19	-0.05,0.69	0.085
High Income \$80,000 or more	0.02	0.15	-0.27,0.31	0.885
African American Ethnicity	-0.13	0.20	-0.52,0.27	0.531
White Ethnicity	-0.16	0.26	-0.67,0.34	0.525
Latino/Hispanic Ethnicity	0.32	0.20	-0.08,0.71	0.120
Asian/Asian American Ethnicity	-0.12	0.38	-0.87,0.62	0.743
Female Gender	0.27	0.19	-0.11,0.65	0.168
Age 30 and under	0.24	0.18	-0.13,0.60	0.203
Age 46-60 years	0.09	0.15	-0.20,0.39	0.531
Age 61 years and over	0.19	0.26	-0.33,0.71	0.473
Overweight BMI	-0.16	0.17	-0.50,0.18	0.342
Obese BMI	0.16	0.17	-0.17,0.49	0.347
Adherence to MVPA guidelines @ baseline	-0.10	0.15	-0.39,0.18	0.478
Constant	0.61	0.38	-0.13,1.35	0.105

N 233

F 4.924999

p 7.53e-10

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers prompting stair use over the 6-month observation period.

Table 7.16: Did implementation success influence change in participants' perception of co-workers suggesting walks at lunch and during breaks over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-0.10	0.24	-0.57, 0.37	0.679
Fair Adopter Worksites	0.05	0.24	-0.43, 0.52	0.853
Model Adopter Worksites	-0.14	0.30	-0.74, 0.45	0.633
Co-workers suggesting walks at breaks at	-0.60	0.07	-0.73, -0.47	0.000***
Full Trial Study Participants	0.31	0.16	0.00, 0.61	0.050*
High School Graduate or less	-0.29	0.26	-0.80, 0.22	0.262
Graduate School Education	0.09	0.16	-0.23, 0.41	0.565
Low Income \$30,000 or less	0.07	0.20	-0.33, 0.47	0.740
High Income \$80,000 or more	-0.06	0.16	-0.37, 0.26	0.723
African American Ethnicity	-0.35	0.22	-0.78, 0.07	0.106
White Ethnicity	-0.06	0.27	-0.59, 0.46	0.809
Latino/Hispanic Ethnicity	-0.08	0.22	-0.51, 0.34	0.697
Asian/Asian American Ethnicity	0.30	0.44	-0.56, 1.15	0.498
Female Gender	-0.09	0.21	-0.50, 0.33	0.683
Age 30 and under	-0.27	0.20	-0.66, 0.13	0.184
Age 46-60 years	-0.20	0.16	-0.52, 0.11	0.206
Age 61 years and over	-0.20	0.29	-0.78, 0.37	0.484
Overweight BMI	-0.09	0.18	-0.46, 0.27	0.606
Obese BMI	0.03	0.18	-0.33, 0.39	0.870
Adherence to MVPA guidelines @ baseline	0.08	0.15	-0.22, 0.39	0.583
Constant	1.94	0.41	1.14, 2.74	0.000***

N 240

F 5.340732

P 6.24e-11

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers suggesting walks during lunch and breaks over the 6-month observation period.

Table 7.17: Did implementation success influence change in participants' perception of co-workers hosting walking meetings over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	-0.13	0.25	-0.62, 0.35	0.586
Fair Adopter Worksites	-0.25	0.25	-0.75, 0.24	0.315
Model Adopter Worksites	-0.10	0.31	-0.71, 0.52	0.757
Co-workers hosting walking meetings at baseline	-0.71	0.07	-0.85, -0.58	0.000***
Full Trial Study Participants	0.50	0.16	0.18, 0.81	0.002**
High School Graduate or less	-0.18	0.27	-0.70, 0.34	0.493
Graduate School Education	-0.21	0.17	-0.54, 0.12	0.217
Low Income \$30,000 or less	0.04	0.21	-0.37, 0.46	0.834
High Income \$80,000 or more	0.05	0.16	-0.27, 0.37	0.764
African American Ethnicity	-0.25	0.23	-0.70, 0.20	0.270
White Ethnicity	-0.47	0.28	-1.02, 0.08	0.096
Latino/Hispanic Ethnicity	-0.16	0.23	-0.61, 0.29	0.493
Asian/Asian American Ethnicity	0.74	0.43	-0.11, 1.58	0.087
Female Gender	-0.07	0.22	-0.50, 0.35	0.732
Age 30 and under	0.15	0.20	-0.25, 0.55	0.471
Age 46-60 years	0.02	0.17	-0.31, 0.36	0.888
Age 61 years and over	0.20	0.30	-0.39, 0.80	0.500
Overweight BMI	-0.19	0.19	-0.57, 0.18	0.315
Obese BMI	0.18	0.19	-0.19, 0.56	0.340
Adherence to MVPA guidelines @ baseline	-0.05	0.16	-0.37, 0.27	0.741
Constant	1.92	0.42	1.09, 2.75	0.000***

N 237

F 7.147675

P 3.57e-15

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' perception of co-workers hosting walking meetings over the 6-month observation period.

Table 7.18: Did implementation success influence change in participants' job satisfaction over time?

	Coef	Std Err	95% CI	P-val
Poor Adopter Worksites	0.00	0.19	-0.37, 0.37	0.999
Fair Adopter Worksites	-0.06	0.19	-0.44, 0.32	0.743
Model Adopter Worksites	0.18	0.24	-0.29, 0.66	0.447
Job satisfaction at baseline	-0.42	0.06	-0.55, -0.30	0.000***
Full Trial Study Participants	0.11	0.12	-0.12, 0.35	0.348
High School Graduate or less	0.21	0.20	-0.19, 0.60	0.301
Graduate School Education	0.03	0.13	-0.22, 0.28	0.821
Low Income \$30,000 or less	0.03	0.16	-0.29, 0.34	0.864
High Income \$80,000 or more	0.15	0.12	-0.10, 0.39	0.237
African American Ethnicity	0.15	0.17	-0.18, 0.48	0.362
White Ethnicity	0.08	0.21	-0.33, 0.50	0.690
Latino/Hispanic Ethnicity	0.04	0.17	-0.29, 0.37	0.803
Asian/Asian American Ethnicity	0.29	0.32	-0.34, 0.93	0.362
Female Gender	-0.19	0.16	-0.51, 0.14	0.256
Age 30 and under	0.02	0.15	-0.28, 0.33	0.894
Age 46-60 years	0.05	0.13	-0.20, 0.30	0.701
Age 61 years and over	0.26	0.22	-0.17, 0.69	0.229
Overweight BMI	-0.07	0.14	-0.35, 0.21	0.618
Obese BMI	-0.09	0.14	-0.37, 0.19	0.518
Adherence to MVPA guidelines @ baseline	-0.21	0.12	-0.45, 0.03	0.087
Constant	1.75	0.40	0.96, 2.54	0.000***

N 236

F 3.439489

P 3.35e-06

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for change in participants' job satisfaction over the 6-month observation period.

Table 7.19: Did implementation success influence participants' perception of management support for WORKING Project?

	Coef	Std Err	95% CI	P-val

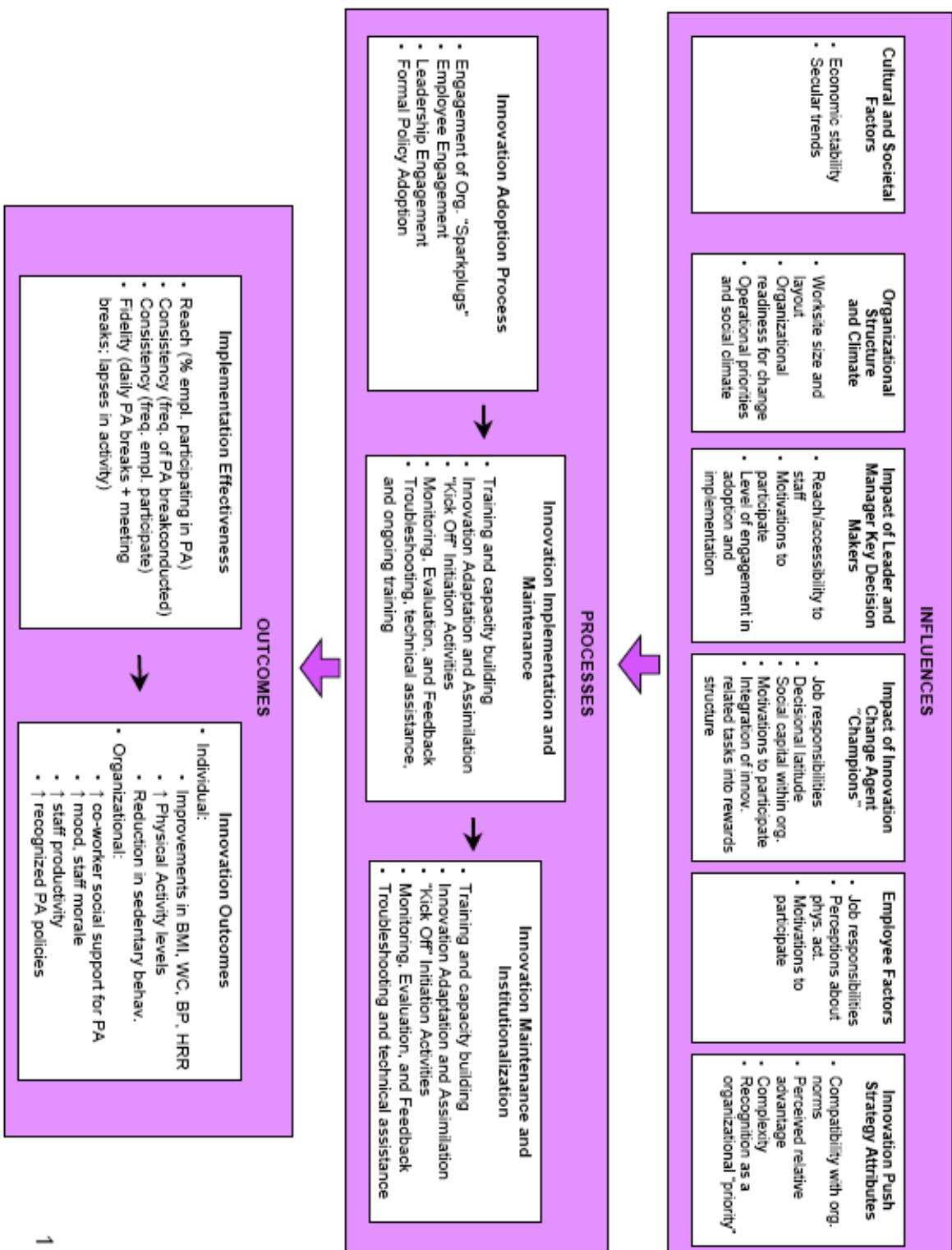
Wipeout Worksites (omitted)				
Poor Adopter Worksites	-0.13	0.22	-0.58, 0.32	0.558
Fair Adopter Worksites	-0.29	0.23	-0.74, 0.17	0.213
African American Ethnicity	0.38	0.22	-0.07, 0.82	0.096
White Ethnicity	0.37	0.34	-0.33, 1.06	0.295
Latino/Hispanic Ethnicity	0.76	0.25	0.26, 1.26	0.003**
Asian/Asian American Ethnicity	0.12	0.35	-0.58, 0.82	0.736
Female Gender	0.24	0.21	-0.19, 0.66	0.267
Overweight BMI	0.08	0.21	-0.34, 0.50	0.700
Obese BMI	-0.11	0.19	-0.50, 0.27	0.558
Adherence to MVPA guidelines @ baseline	-0.12	0.15	-0.42, 0.18	0.421
Constant	2.32	0.37	1.56, 3.07	0.000***

N	55			
F	1.831319			
P	.0828688			

Note: *indicates p<.05 **indicates p<.01 ***indicates p<.001

NOTE: This table describes significant predictor variables for participants' perception of management support for the WORKING Project. These findings reflect data obtained from participants enrolled into the full intervention trial. These data were collected at 6-month follow-up.

APPENDIX A: Integrating Physical Activity into Health and Human Services Organizations (Full Conceptual Model)



APPENDIX B: Environmental Audit Data Collection Form

ENVIRONMENTAL AUDIT FORM

Date of Visit:

Site Visit No:

Worksite:

Address:

Observers, UCLA Staff:

Worksite Staff/PCs present:

WORKSITE OBSERVATIONS

Overall Worksite Logistics (description/layout of building, staff, physical environment):

Snack Bowl/ Basket/Vending Machines:

Wellness-Related Advertisements, posters, bulletin boards, newsletters:

Water Fountains/Cooler/Bottled Water:

Break Area, Cafeteria, Lunch Rooms:

Conference Rooms, Meeting Spaces:

Stairwells, Modes of Transportation/Locomotion:

Proximal Physical Environment (parks, restaurants, food vendors, greenspaces):

APPENDIX C: Wellness Committee Site Visit Form

SITE VISIT / TECHNICAL ASSISTANCE FORM

Date of Visit:

Site Visit No:

Worksite:

Address:

Observers, UCLA Staff:

Worksite Staff/PCs present:

PHYSICAL ACTIVITY OBSERVATION (if applicable)

FACILITIES & LOGISTICS:

PROGRAM CHAMPIONS/WELLNESS COMMITTEE REPORTS:

PROCESS TO IMPLEMENTATION (if on 1st site visit)

PHYSICAL ACTIVITY CORE/ELECTIVE ELEMENTS COMMENTS

Daily PA Breaks:

PA Breaks at Meetings:

Elective Elements:

NUTRITION CORE/ELECTIVE ELEMENTS COMMENTS

Snack Basket:

Healthy Nutrition @ Meetings:

Elective Elements:

ADDITIONAL ELEMENTS COMMENTS (i.e. unique innovations, incentive programs, etc.)

CHALLENGES FACED

TA REQUESTS / TROUBLESHOOTING

OTHER OBSERVATIONS / MISCELLANEOUS (i.e. behavioral/social norms modifications)

APPENDIX D: Intervention Evaluation Summary

Intervention Summary:
<Name of the Organization>

Intervention Group:

Contact Information:

Phone #:

Organizational Leadership:

Mid-level Management:

Program Champions:

Baseline Data Collection:

Program Champions Training:

Intervention Kick-Off date:

Site Visit dates:

Environmental Audit dates:

Follow-up Data Collection(s):

Wrap-Up Session date:

Overview/Mission

<A brief descriptive paragraph of the organization, including their mission statement and basic functions. 2-3 sentences is enough.>

Organizational Characteristics

<Overview of physical layout of the facilities, distribution of employees, staff demographics (size, age, gender), staff schedules, description of leadership and decision-makers, etc.>

WORKING Wellness Committee Action

<Overview of the status of the wellness committee throughout the intervention: Number of committee members, job positions of committee members (any supervisors? Clinical staff? Line staff?), roles and responsibilities committee members, loss of committee members, and any specific committee activities.>

Intervention Implementation/Kick-Off

<A "time line" summary of events that occurred at the beginning stages of the intervention. Activities include the Program Champions' Training (how many trained? Any booster trainings?), formation of wellness committee, initial implementation plan, securing the final OK from leadership, PA breaks and healthy eating activities prior to the official kick-off, kick-off event details, etc.>

Summary of Organizational Dynamics throughout Intervention

<A chronological summary of major organizational events that have occurred during the intervention that may have had an impact on the WORKING Project strategies. Changes in leaderships, changes in PCs, loss/gain of key contacts, changes in staff (layoffs, retirements, etc.), major organizational priority shifts (e.g. budget, new grants/projects, relocations, etc.)>

Summary of Core Intervention Elements

Daily PA Breaks:

<How many Instant Recess breaks are completed per day/week? Are these Lift Offs scheduled into the day, or are they conducted sporadically? How many employees participate, on average? What types of activities are featured in the breaks (Instant Recess/Lift Off! CDs/DVDs, walking breaks, Zumba, homegrown activities, etc)? Did employees have a strong preference for certain PA breaks? What is the overall reaction of staff to the activity breaks? How has the frequency and/or conduct of PA breaks changed throughout the intervention?>

PA Breaks at Meetings:

<How has the worksite integrated PA breaks into organizational meetings lasting over an hour (e.g. All-staff/agency meetings, managers' meetings, individual unit meetings, etc.)? During which type of meetings do these breaks take place (or not take place?). How frequent are these meeting breaks (e.g. every meeting, most meetings, rarely, etc.)? What were the participation rates at these meetings? Any changes throughout the intervention?>

Daily Healthy Nutrition Offerings (e.g. Snack Basket):

<How have the healthy eating strategies been implemented (e.g. snack basket, vending machine changes, etc.)? How are the fruit baskets being utilized and managed? Any changes over time?>

Healthy Nutrition Options at Meetings:

<In what ways has the worksite incorporated healthy eating options at site meetings, social events (e.g. potlucks, retirements), and staff programming? Identify any changes over time?>

Summary of Additional "Elective" Intervention Elements

<This pertains to activities/items that have been implemented in addition to the core intervention strategies described above (e.g., additional nutritional components, incentives programs, environmental modifications, competitions, etc.). How did they come about? How are they being implemented? What were workers' reactions to these additional activities? How did they evolve or devolve over time? How has leadership supported these activities?>

Successes/Breakthroughs

<Identify activities, behaviors, and/or events that have worked particularly well for the worksite over the course of the intervention (e.g. forming a wellness committee and having regular meetings, significantly increasing participation in PA breaks, major policy changes, etc.)>

Challenges/Barriers Faced

<Identify any major or recurring challenges or barriers that hindered the success of the intervention.

Examples: Motivating 'hard to reach' employees, lack of support from managers, scheduling issues, lack of equipment, low staff participation, etc.>

Process/Implementation Evaluation

<Overall determination of whether the organization 1) successfully implemented the four core elements of the intervention; 2) maintained strategies without lapses or drops in participation; and 3) properly sustained the elements until the end of the intervention.>

Daily PA Breaks:

PA Breaks at Meetings:

Snack Baskets:

Healthy Meetings and Events:

Future Recommendations

<Recommendations from UCLA staff on how sites/program champions may enhance/sustain their current wellness endeavors, based on information drawn from the process evaluation.>

APPENDIX E: Key Informant Interview E-mail Invitation

Key Informant Interview Email Invitation

From: Jammie M. Hopkins, Doctoral Student, Intervention Coordinator for UCLA WORKING Project
To: [First] [Last], [Position]
Subject: Invitation to Participate in Key Informant Interview for UCLA WORKING Project

Dear [Title] [First] [Last]

My name is Jammie Hopkins, Intervention Coordinator for the UCLA WORKING Project. Our Project team is inviting employees from worksites we engaged in the WORKING Project intervention to participate as key informants for a small interview study. This study is being conducted to:

- 1) Better understand how worksite personnel were involved in implementing WORKING Project physical activity (PA) strategies (e.g. 10-minute *Instant Recess* breaks) at their worksite; and
- 2) Explore factors that both encouraged and discouraged the implementation of physical activity strategies at worksites.

We are asking two types of employees to participate in the interview study: 1) middle management leaders (e.g. program managers, supervisors, coordinators); and 2) employees who volunteered as “Program Champions” when their worksite was actively involved in the WORKING Project study.

I am seeking your perspective as an important middle management leader (or wellness champion) for your organization. I believe you will find the interview questions interesting and worthwhile, and the results will be used to determine how physical activity strategies can be best integrated into dynamic health and human services settings to improve employee health and wellness.

- Your participation entails taking part in a 45-60 minute phone interview with a member of the UCLA WORKING Project Intervention Team.
- The attached *Information Sheet* provides detailed information about the interviews. *Please take a moment to review it.*
- Your participation in the study will be strictly confidential. Participating in the study will not affect your status or employment at your worksite.

What happens next:

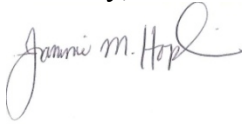
- Unless you tell me otherwise, I will contact you in the next 3-4 days to inquire about your participation decision. If you agree to participate, I will send you a consent document to sign electronically and schedule a day and time for your interview. If you need extra time to make a decision please let me know and I will contact you at a convenient time. If you

wish to have your name removed from my list, please reply to this email with “remove” in the subject line. If you prefer to be contacted at a later date, please let me know.

Contact information:

- If you have questions or wish to discuss your participation as a prospective key informant, please contact Jammie M. Hopkins at jmhopkins99@gmail.com or reach me by phone at (310) 993-7894 cell or (310) 794-6197 office.

Sincerely,



Jammie M. Hopkins, M.S.
Doctoral Student, Health Services
Intervention Coordinator, UCLA WORKING Project
UCLA Fielding School of Public Health
650 Charles Young Dr. South, A2-125 CHS
Los Angeles, CA 90095
[Jmhopkins99@gmail.com](mailto:jmhopkins99@gmail.com)
(310) 993-7894

APPENDIX F: Key Informant Interview Fact Sheet

INFORMATION FACT SHEET

UCLA WORKING Project *Key Informant Interviews for Middle Managers and Program Champions*

Q. What am I being asked to do?

A. You are currently employed at an organization that has recently participated in the UCLA WORKING Project. Our project team is inviting representatives from worksites we engaged in the UCLA WORKING Project to participate as key informants for a small interview study. As a middle management leader or employee who volunteered as a “Program Champion” for your worksite, you are being asked to participate in a phone interview, which will be described below.

Q. What is the purpose of this interview?

A. There are two main objectives for the interview: 1) To better understand how worksite personnel were involved in implementing WORKING Project physical activity (PA) strategies (e.g. 10-minute *Instant Recess* breaks) at your worksite; and 2) to explore organizational, individual, and cultural factors that both encouraged and discouraged the implementation of physical activity strategies at your worksite.

Specifically, we want to know more about your job responsibilities, your physical activity habits and attitudes, and details of your experience with the WORKING Project. We also want to understand what you felt were factors that both encouraged and discouraged the success of the WORKING Project at your worksite. The research study results will be used to determine how physical activity strategies can be best integrated into dynamic health and human services settings to improve employee health and wellness.

Q. Who is invited to participate and how much of my time will this take?

A. We are asking two types of employees to participate in the interview study: 1) middle management leaders (e.g. program managers, supervisors, coordinators); and 2) employees who volunteered as “Program Champions” when their worksite was actively involved in the WORKING Project study.

A total of about 50 employees and middle managers from worksites that have completed their participation in the WORKING Project have been contacted to participate in this interview study. Our goal is interview at least 8-12 employees from four (4) worksites.

The interview will be conducted by phone and take about 45-60 minutes to complete.

Q. What does my participation involve?

A. You are being asked to participate as a key informant for your worksite and complete a 45-60 minute phone interview. Your decision to participate is entirely voluntary. You may also indicate that you do not want to answer particular questions. Your identifying information will not be included in or referred to on any of the interview-related documents and media. You have the option of pausing or terminating the recording during an interview if you wish. You will be able to review and edit the tapes if you wish. Recordings will be transcribed by a professional commercial transcription service. All identifying information contained in the transcripts will be removed before they are analyzed.

Q. What are the risks and benefits of my participation in the survey?

A. Participating in a key informant interview may involve very minimal risks or discomforts. Some of the questions we ask may be sensitive in nature and cause you some unease. Our interviewer will make efforts to maximize your comfort level during the interview. Participating in the study will not affect your employment status at your worksite.

We will use the information you provide only for the purposes stated above. There are no immediate personal incentives or compensation to you for participating in an interview. However, the findings from the interview study may help determine how physical activity strategies can be best integrated into dynamic health and human services settings to improve employee health and wellness.

Q. How do I indicate my voluntary agreement to participate in the interviews?

A. You indicate your agreement to participate by completing an informed consent agreement.

Q. How will the confidentiality of my responses be maintained?

A. We will maintain rigorous privacy and confidentiality protections. Your individual responses will not be accessible to anyone other than authorized UCLA WORKING Project Staff. You will be assigned a code number and all transcripts will only contain your code number, not your name or other identifying information. A master list of names and code numbers will only be accessible to authorized members of our team and locked in a secured location.

Q. Who do I contact if I have questions about my participation?

A. If you have questions about your participation in the research study you may contact Jammie Hopkins, Intervention Coordinator, at (310) 794-6197 or jmhopkins99@gmail.com. If you wish to ask questions about your rights as a research participant or if you wish to voice any problems or concerns you may have about the study to someone other than the researchers, please call the Office of the Human

Research Protection Program at (310) 825-7122 or write to the Office of the Human Research Protection Program, UCLA, 11000 Kinross Avenue, Suite 102, Box 951694, Los Angeles, CA, 90095-1694.

Thank you!

APPENDIX G: Key Informant Interview Consent Form

UNIVERSITY OF CALIFORNIA LOS ANGELES CONSENT TO PARTICIPATE IN KEY INFORMANT INTERVIEW

“WORKING OUT REGULARLY KEEPS INDIVIDUALS NURTURED AND GOING”
The WORKING Project

You are an employee of an organization that has recently participated in the UCLA WORKING Project research study. As you may remember, the objective of the project was to identify and evaluate a practical way of integrating wellness strategies into worksite settings to improve employee health and reduce risk of obesity among employees.

Our project team is inviting representatives from worksites we engaged in the UCLA WORKING Project to participate as key informants for a small interview study. This study is being conducted to:

- 1) Better understand how worksite personnel were involved in implementing WORKING Project physical activity (PA) strategies (e.g. 10-minute *Instant Recess* breaks) at their worksite; and
- 2) Explore factors that both encouraged and discouraged the implementation of physical activity strategies at worksites.

We are asking two types of employees to participate in the interview study: 1) middle management leaders (e.g. program managers, supervisors, coordinators); and 2) employees who volunteered as “Program Champions” when their worksite was actively involved in the WORKING Project study.

PROCEDURE

If you agree to participate in this additional component of the study, we ask that you take part in a 45-60 minute semi-structured phone interview with a member of the UCLA WORKING Project Intervention Team. You will be asked a series of questions about your physical activity habits, your job responsibilities, and your experiences during the time your organization participated in the UCLA WORKING Project.

Your interview will be digitally recorded and transcribed verbatim (word-for-word). Your identity will be held strictly confidential and only certified WORKING Project staff will have access to your transcribed interview manuscripts. All electronic recordings and transcribed manuscripts will be stored in password-protected files on a secured computer. Once your electronic interview recording has been transcribed into manuscript form, it will be destroyed.

POTENTIAL RISKS AND DISCOMFORTS

Participating in a key informant interview may involve minimal risks or discomforts. Some of the questions we ask may be sensitive in nature and cause you some unease.

PARTICIPATION AND WITHDRAWAL

Your participation in this research is completely VOLUNTARY. If you do decide to participate you have the right to refuse to answer any question. You also have the right to stop the interview at any time and for any reason withdraw your consent and discontinue participation. Your decision to withdraw from the interview study will in no way affect your relationship with your employer. Choosing not to participate will not affect your relationship with your employer or your right to services and/or privileges to which you as an employee are entitled.

PAYMENT FOR PARTICIPATION

You will be presented a \$20.00 gift card for participating in this interview study.

IDENTIFICATION OF INVESTIGATORS

If you have any questions about the research, please feel free to contact:

Intervention Coordinator:

Jammie M. Hopkins, M.S.
Doctoral Student, Graduate Student
Researcher
Health Services Department
University of California, Los Angeles
Fielding School of Public Health
650 Charles Young Drive South,
[A2-125 CHS](#)
[Los Angeles, CA 90095](#)
Phone: (310) 794-6197
Fax: (310) 206-3566

Principal Investigator:

Antronette K. "Toni" Yancey, M.D.,
M.P.H.
Professor
Health Services Department
University of California, Los Angeles
Fielding School of Public Health
650 Charles Young Drive South
31-235 CHS
[Los Angeles, CA 90095](#)
Phone: (310) 794-9284
Fax: (310) 206-3566

UCLA Office of the Human Research Protection Program (OHRPP):

If you have questions about your rights while taking part in this study, or you have concerns or suggestions and you want to talk to someone other than the researchers about the study, you may contact the UCLA Office of the Human Research Protection Program by phone: (310) 825-5344; by email: mirb@research.ucla.edu or U.S. mail: UCLA OHRPP, 11000 Kinross Ave., Suite 102, Box 951694, Los Angeles, CA 90095-1694.

CONSENT

You hereby voluntarily agree to participate in the study described above and your signature below confirms this. You understand that the study may involve some discomfort as outlined. These drawbacks and your part in the research study have been clearly explained. You have had complete freedom to ask any questions about the study and may ask others at any time. If at any time you have questions regarding your participation in this study you may call Intervention Coordinator Jammie Hopkins at

(310) 794-6197, or Principal Investigator Dr. Yancey at (310) 794-9284. You have received a copy of this form to keep. You are free to withdraw your consent and discontinue participation in the study at any time.

SIGNATURE OF THE PARTICIPANT

Name of Participant

Signature of Participant

Date

SIGNATURE OF PERSON OBTAINING CONSENT

Jammie M. Hopkins

Signature of Person Obtaining Consent

Date

APPENDIX H: Key Informant Guide for Program Champions

UCLA WORKING Project Program Champions' Interview Guide

Introductory Prompt:

I first want to thank you for agreeing to participate in this interview. Your responses will help us gain a greater understanding of the role employee “Program Champions” play in supporting worksite wellness strategies. Please feel free to be honest and candid in your responses; our desire is to hear YOUR perspective!

Of course, your participation in this interview is entirely voluntary and we will consider everything you say to be confidential. Participating in the interview study will not affect your status or employment at your clinic. We will not identify you specifically in any reports.

Before we start do you have any questions? OK then, let's get started.

1. To start off, please tell me your job position, how long you have been in this position, and how long you have been with the organization.
2. Tell me a little bit about your day-to-day responsibilities on the job.

DOMAIN #1: Perceptions and Motivations

I want to better understand your motivations for serving as a Program Champion for the WORKING Project. I also want to understand any thoughts or opinions you had about the physical activity strategies that were introduced to your worksite by the WORKING Project.

For the purposes of the interview, the physical activity strategies I will be referring to are:

- *Daily 10-minute Instant Recess® breaks on paid time; and*
- *Brief activity breaks during meetings lasting over one hour.*

3. What motivated you to be trained as a Program Champion and support the WORKING Project at your site? ***

4. In what ways do you feel the physical activity strategies “fit in” with the culture of your worksite?***

DOMAIN #2: Roles, Responsibilities, and Actions

In this section, I would like to know more about your role and experience as a Program Champion for your organization.

5. As a Program Champion for your organization, what do you feel was your responsibility when it came to supporting the physical activity strategies at your site?

6. Please describe your specific roles as a Program Champion at your site. What was your specific “job”, and describe to me how you worked with other PCs to manage the wellness strategies.

7. I am very interested in how you communicated with supervisors and middle managers at your worksite. Please describe your interactions with middle managers and supervisors at your worksite throughout the implementation process.***

8. As a Program Champion, how were you most successful in supporting physical activity strategies at your worksite? What qualities or skills do you feel made you an effective Program Champion?***

9. As a Program Champion, what challenges did you face when it came to supporting the physical activities at your site?

For the next few questions, I would like to hear your thoughts about the organization as a whole.

10. Overall, how do you feel the WORKING Project impacted the culture of your organization?***

11. What do you feel were the biggest advantages your organization possessed that helped the implementation process?***

12. What were the biggest challenges your organization encountered when attempting to implement the strategies? Please explain in detail.***

13. The ideal goal of WORKING is to have physical activity breaks and breaks at meetings be integrated into the “standard conduct of business” at different types of worksites.

Based on your experiences with the WORKING Project, what do you feel needs to happen for worksites to realize this goal?

- How do you feel leaders and managers should engage in the process?
- What support do you feel Program Champions need to sustain the strategies?
- What will encourage employees to participate in the activities?

Additional Comments

14. Do you have any additional comments as we complete this interview?***

Conclusion:

Thank you for agreeing to participate in this interview. Your insights are greatly appreciated!

APPENDIX I: Key Informant Interview Guide - Middle Managers

UCLA WORKING Project Middle Managers Interview Guide

Introductory Prompt:

I first want to thank you for agreeing to participate in this interview. Your responses will help us gain a greater understanding of Middle Managers play in supporting worksite wellness strategies. Please feel free to be honest and candid in your responses; our desire is to hear YOUR perspective!

Of course, your participation in this interview is entirely voluntary and we will consider everything you say to be confidential. Participating in the interview study will not affect your status or employment at your organization. We will not identify you specifically in any reports.

Before we start do you have any questions? OK then, let's get started.

INTRODUCTION/WARM-UP:

1. To start off, please tell me your name, your job position, how long you have been in this position, and how long you have been with the organization.
 - *Were you in this same position when your worksite participated in the WORKING Project?*
2. Tell me a little bit about your day-to-day responsibilities on the job.

DOMAIN #1: Roles and Actions of Middle Managers

In this section, I would like to learn more about how you, as a middle manager, operate to support and encourage new ideas, policies, and priorities for your organization.

1. What channels of communication are used to inform managers and staff of new policies, practices, and high-priority objectives? (diffusing information)
2. What strategies do you use to interpret new policies, practices, and priorities to be relevant and useful to employees? (synthesizing information)
3. How are priorities set for the your work unit or organization? Who takes the lead in "setting the agenda," and how is that communicated to others?
4. Middle managers are clearly very busy and have multiple responsibilities to fulfill...how do you determine what is and isn't a priority task or responsibility? How do you relay to front-line staff what is and isn't a priority?

5. What are some of the strategies you use to encourage employees to follow new policies and practices, or to utilize new resources? (Selling Innovation implementation)

In this section, I would like to know more about your role and experience as a Middle Management leader throughout your worksite's involvement in WORKING Project. For the purposes of the interview, we will focus only on the physical activities involved in the WORKING Project:

- *Daily 10-minute Instant Recess® breaks on paid time; and*
- *Brief activity breaks during meetings lasting over one hour.*

6. As a Middle Manager for your organization, what did you feel were your main responsibilities when it came to supporting the physical activity strategies at your site?

7. In your own words, what specific actions or tasks did you accomplish to support the WORKING Project strategies at your worksite?

- *In what ways did you help keep the strategies "on the agenda" of the organization?*
- *Describe your actions with other leaders, managers and key decision-makers.*
- *Describe your interactions with your line staff employees. In what ways did you encourage front-line staff employees to participate in the PA strategies?*
- *Describe your interactions with Program Champions. Did PCs come to you for assistance to troubleshoot problems and/or brainstorm new ideas? What kinds of assistance did you offer PCs? Do you feel that you sufficiently supported their efforts?*
- *Did you have any problems or challenges in communicating with PCs?*
- *Describe how you yourself participated in the physical activity strategies?*

8. Describe any challenges that you yourself faced in your role as a Middle Manager

- *What was it like balancing your PC roles with your normal job responsibilities?*

9. In what ways do you feel you successfully used your influence as a manager to support the physical activity strategies?

DOMAIN #2: Facilitators and Barriers to Implementation

For the next few questions, I would like to hear your thoughts about the organization as a whole.

10. What do you feel were the biggest advantages or assets your organization possessed that helped the implementation process?***

11. What were the biggest challenges your organization encountered throughout the process?

DOMAIN #3: Perceived Outcomes

12. Overall, how do you feel the WORKING Project impacted the culture of your organization?***

DOMAIN #4: Sustainability and Institutionalization

13. The ideal goal of WORKING is to have physical activity breaks and breaks at meetings be integrated into the “standard conduct of business” at different types of worksites.

Based on your experiences with the WORKING Project, what do you feel needs to happen for worksites to realize this goal?

- *How do you feel leaders and managers should engage in the process?*
- *What support do you feel Program Champions need to sustain the strategies?*
- *What do you feel is necessary to best encourage employees to participate in the activities?*

Additional Comments

14. Do you have any additional comments as we complete this interview?***

Conclusion:

Thank you for agreeing to participate in this interview. Your insights are greatly appreciated!

APPENDIX J: Key Informant Interview Transcript Codebook

Code Title	Description
Organizational Structure and Climate	Primary domain code. Elements referring to the physical layout, social climate, and standing priorities for the worksite.
Physical Layout	Descriptions of the physical layout and social climate of the worksite, and how it might have impacted implementation
Organizational fit	Descriptions of how PA strategies and activities fit into the overall organizational mission, priority activities, and social culture
Unhealthy Workplace	Excerpts or mentions of workplace not being conducive to health or well-being. Unhealthy elements can be stress, unsafe work environment, poor food options, etc.
Worksite policies and MOUs	mentions of policies and statements that explicitly detail objectives, expectations, and rules for participation.
Mid Manager Role in Priority and Agenda Setting	Primary Domain Code for middle managers' responses regarding priority and agenda setting
Mid Manager Primary Job Responsibilities	Description of day-to-day job responsibilities and activities of middle manager key informants
Info diffusion and communication channels	Descriptions of how vital information and priority agenda items move through communication channels of the organization to reach leaders, managers, and front-line staff.
Priority and Agenda Setting	Descriptions of how managers were involved in priority and agenda setting activities with top ranking organizational leaders.
Translating information	taking information and making it relevant and decipherable to other employees
Selling innovations and policies	Descriptions of strategies middle managers used to encourage employees to utilize and adhere to new policies, procedures, and administrative directives
Mid Manager Roles and Actions	Primary domain for roles, actions, and motivations expressed by Middle Managers
Mid Manager interaction with leadership	descriptions of middle managers' interactions with other managers, supervisors, and executive leadership
Mid Manager active Participation	Acknowledgments of leadership actually participating alongside employees in PA breaks
Mid Manager interactions with PCs	Descriptions of middle managers' interaction with PCs regarding the implementation progress, troubleshooting challenges, and brainstorming new ideas
Mid manager providing support for PA	Descriptions of how managers provided support for the PA strategies. Support in terms of verbal support, encouragement, allowing employees to participate, providing resources, and assisting in troubleshooting efforts to enhance the implementation of PA strategies.

Mid manager Challenges in Supporting PA	Descriptions of challenges managers had in supporting the PA strategies. These challenges may include job/role tensions, being too busy to participate, being out of office, and/or tensions from leaders and other managers to not prioritize participation.
Program Champion Roles and Actions	Primary domain for roles, actions, and motivations of Program Champions
PC Job Responsibilities	Regular job responsibilities and tasks for PCs
PC's perceived responsibility and unique role	PC identifying any unique role or responsibilities that had in the implementation process
Perceptions and Motivations	Perceptions and Motivations of Program Champions and Middle Managers who led to their engaging in the process of implementing PA strategies
	Broad category of specific roles and actions PCs carried out to support the PA strategies at their worksite. Actions include motivating employees, demonstrating and monitoring PA, managing logistics for PA breaks (music, room prep, announcements, etc.), and troubleshooting challenges)
PC actions in facilitating PA	
Interactions with Supervisors and Managers	Descriptions of relevant interactions PCs had with leaders and managers concerning the PA strategies
PC Challenges in supporting PA	Descriptions or mentions of any challenges PC faced in their role of facilitating activities.
Implementation Advantages and Facilitators	Primary domain for factors and people that assisted or enhanced the implementation process
Impact of Program Champions	acknowledgments of having a strong core of PCs as an asset to implementation
Consistency in PA Efforts	Excerpts describing how being consistent with PA Efforts had been advantageous to implementation
Leadership support	Acknowledgement of leadership support through verbal endorsement, allotting and protecting paid time, and verbally encouraging participation.
pre-existing wellness infrastructure	Evidence of any wellness strategies, competitions, and other elements before the WORKING Project was implemented
Implementation Barriers and Challenges	Primary Domain for factors identified by key informants that had a negative effect on implementing the PA strategies
No time to participate	Declarations of employees or managers not having time to participate
No managerial leadership involvement	Phrases that describe instances where managers and leaders have not been supportive
Logistical Challenges	Challenges regarding the physical space and environment: no room for PA, faulty PA system, no equipment to run CD/DVDs, etc.

PA not prioritized activity	Mentions of PA strategies not being considered a priority activity for the organization. Reasons can be due to internal (e.g. audit seasons) or external forces (e.g. major projects underway, emergency priorities undertaken, etc.). This also includes any shifts in organizational priorities that may have overshadowed or undercut attentions to PA strategies.
HR and Operational Challenges	Broad category to include challenges due to staff layoffs, funding shortages, increased workloads due to increased demand for services, changes in leadership or management, etc.
Perceived Outcomes	Primary domain code for any outcomes resulting from participation in the WORKING Project and implementing PA strategies
Culture Change supporting PA	Mentions of any cultural or organizational shifts or changes as a result of participating in WORKING
Increased Awareness of PA	Descriptions of how the PA strategies help to increase employees' awareness of PA and the importance of reducing sedentariness.
Improved PA behaviors and weight loss	Observed changes in employees' physical activity behaviors and weight status after being exposed to the PA strategies
Staff morale and mood	Acknowledgments of any recognizable changes to mood and morale due to implementing PA breaks
Sustainability and Institutionalization	Primary domain code. Elements and instances key informant believe can improve the implementation process and bring about long term sustainability and institutionalization
Sustainability Leadership Efforts	Efforts leadership must take to encourage sustainability and institutionalization
Sustainability PC Efforts	Efforts and support needed by PC to encourage sustainability and institutionalization
Sustainability Employee Participation	Efforts that need to be taken to maximize employee participation
Great Quotes	Excerpts that really capture or convey an idea I feel is good for including in the manuscript text

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