Workplace Health Promotion Programs: An Assessment of Factors Influencing Participation

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WORKPLACE HEALTH PROMOTION PROGRAMS: AN ASSESSMENT OF
FACTORS INFLUENCING PARTICIPATION

by

Tomeka Lashell Harbin

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

May 2013
ABSTRACT

WORKPLACE HEALTH PROMOTION PROGRAMS: AN ASSESSMENT OF FACTORS INFLUENCING PARTICIPATION

by Tomeka Lashell Harbin

May 2013

Increasing health care costs are indicators of a major threat to short and long term viability of American businesses. As leaders in American businesses and industries face rising health insurance and medical care costs, interest in disease prevention and health promotion increases. Decreasing health care costs coupled with a greater public interest for addressing health issues has led to the workplace health promotion movement. This study utilized quantitative research methods to examine employee perceptions of workplace health promotion in the Mississippi Delta, a rural area identified as one of the three unhealthiest places to live in the United States.

Electronic survey distribution and in-person survey collection were used to obtain data. Two hundred thirty-three employees participated from Delta State University and Mississippi Valley State University. Data was analyzed using frequency distribution and logistic regression. Findings from this study suggest when developing or improving workplace health promotion programs, organizations should focus on providing health screenings, healthy food choices, and ensuring program activities are convenient for employees. Developing comprehensive health promotion programs based on the needs of employees and supported by leadership can assist in improving lifestyle behaviors and controlling health care costs for businesses.
The University of Southern Mississippi

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AN ASSESSMENT OF FACTORS INFLUENCING PARTICIPATION

by

Tomeka Lashell Harbin

A Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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May 2013
DEDICATION

I dedicate this dissertation and my graduate studies to God who enabled me to complete the journey; through all things You strengthened me. I dedicate this work to the New Life Church in Renova, MS, who continuously prayed and encouraged me through this process.

This entire Ph.D. process is also dedicated to my husband Rolander, who encouraged me from beginning to end. I could not have accomplished such a task without you providing an extraordinary support system that allowed me the opportunity to spread my wings and fly. I also dedicate this work to my sons, Rashad and Devon who inspire me daily with hope and laughter.
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CHAPTER I
INTRODUCTION

Background

More than 64% of the U. S. population is overweight or obese. Conditions of overweight and obesity correlate with increased risks for coronary heart disease, type two diabetes, cancers, high blood pressure, high cholesterol, and stroke (Jones, Shivaji, Cosby, & Morgan, 2010). Currently, 18.2 million Americans have diabetes and one-third of these individuals are unaware they have the disease. Heart disease and stroke account for more than 40% of all deaths each year in the United States. Cancer, the second cause of death, kills approximately 500,000 people annually (Carlson & Murphy, 2010; U.S. Department of Health and Human Services [DHHS], 2000). Furthermore, the United States ranks last in a list of 20 industrialized countries in mortality rates for chronic illnesses (Nolte & McKee, 2008), yet more is spent on health care in the United States than in other countries (Partnership for Prevention, 2009). Chronic illnesses occur in 45% of our population and these illnesses account for 70% of deaths and 75% of the $2 trillion annual medical expenses in the United States (Thorpe, 2005).

Increasing health care costs are indicators of a major threat to short and long term viability of American businesses (Partnership for Prevention, 2009). Private health insurance premiums rose 5% from 1997 to 2000 and nearly doubled to 9.2% from 2000 to 2005. Annual health care expenditures increased from $75 billion in 1970 to $2 trillion in 2005; in the past three decades health care costs more than doubled as a percentage of the gross domestic product (GDP), from 7.2% in 1970 to 16% in 2008. Economists predict this will rise to 20% of the GDP by 2015 (Partnership for Prevention, 2009). Per
capita health care expenditures increased from $356 in 1970 to $6,697 in 2005 and predictors expect an increase to $12,320 by 2015 (Partnership for Prevention, 2009).

As leaders in American businesses and industries, face rising health insurance and medical care costs, interest in disease prevention and health promotion increases (Lovato, Green, & Stainbrook, 1994; Partnership for Prevention, 2009). The value in decreasing health care costs coupled with a greater public interest for addressing health issues has led to the workplace health promotion movement. Many organization leaders recognize that some costs associated with health care are avoidable through the modification of unhealthy lifestyles (Sloan, Gruman, & Allegrante, 1987; Partnership for Prevention, 2009). The objectives of health promotion include decreasing health risks, strengthening health and productivity, and lowering health-related costs (Partnership for Prevention, 2007). Health promotion and disease prevention initiatives take place in schools, worksites, insurance companies, communities, hospitals and outpatient clinics (Collins, Marks, & Koplan, 2009; Hundley, 2010). The nation’s leading consumer of medical care are businesses. Businesses develop workplace health promotion programs primarily to help control the cost of medical care, while simultaneously increasing productivity (Jensen, 1987). At its best, workplace health promotion contributes to a culture that nurtures life, motivation, and overall effectiveness of human capital. Therefore, programs that promote workplace health can positively influence policies and procedures that increase profitability for the company and employability of the individual (Partnership for Prevention, 2007).

Lifestyle behaviors contribute to the development of common chronic illnesses, such as, heart disease, cancer, chronic obstructive pulmonary disease (COPD), stroke,
and diabetes (Partnership for Prevention, 2009). In 2000, 37% of deaths nationwide linked to tobacco, physical inactivity, poor nutrition, and alcohol. Poor employee health accounted for a 5% to 10% reduction in net productivity; businesses incur costs associated with medical care, leave time, and decreases in production of goods and services (Partnership for Prevention, 2009). Productivity losses related to personal and family health issues cost U.S. employers approximately $225.8 billion annually (Partnership for Prevention, 2009). Furthermore, an estimated 46 million Americans are uninsured. The lack of insurance and the cost of health care directly relates to individuals not seeking the services of a doctor (Delta Business Institute of Health [DBIH], 2010). Individuals living in poor areas often lack preventative health care or the means to manage chronic illnesses (Torpy, Lynm, & Glass, 2007).

Poverty and health are interrelated: poverty leads to poor health and poor health leads to poverty (Khan, Hotchkiss, Berruti, & Hutchinson, 2005). In both developed and developing countries, poverty is an important determinant of the health status of the population. Health disparities due to socio-economic status relate to differences in education, income, health practices, and psychosocial stressors associated with membership in the lower socio-economic classes (Khan, et al., 2005). An individual’s position in society or income level affects their health in two ways: (a) in one’s ability to access commodities and social capital, and (b) in increased psychosocial distress associated with direct and indirect effects on health (Cosby, Shivaji, & Jones, 2010).

The poor account for an increasing proportion of Americans. In 2009, 43.6 million people lived in poverty, an increase of 3.8 million people since 2008. The number of people living in poverty in 2009 is the largest in the 51 years for which poverty
estimates are published. There were significant increases for all four regions of the country between 2008 to 2009. Those in poverty in the Midwest increased from 8.1 million to 8.8 million; in the West from 9.6 million to 10.5 million; in the Northeast from 6.3 million to 6.7 million; and in the South from 15.9 million to 17.6 million (Poverty in the United States, 2010).

In 2000, 25% of Americans lived in rural areas, with fewer than 2,500 residents (U.S. Department of Health and Human Services, 2000). Injury related deaths are 40% higher in rural areas than urban areas. Heart disease, cancer, and diabetes rates are higher in rural settings than urban settings. Individuals living in rural areas are less likely to use preventive screening services or to exercise regularly. In addition, timely access to emergency services and the availability of specialty care are additional challenges facing rural populations (U.S. Department of Health and Human Services, 2000).

In 2000, 51.2% of the Mississippi population lived in rural areas, compared to 21% of the U.S. population as a whole (U.S. Census Bureau, n.d.). Fifty-six percent of Mississippi physicians are located in the urban areas of the state, leaving 51 of the 82 counties without significant physician representation. Insurance coverage is an important determinant of access to health care. Of the 46 million uninsured Americans, 555,000 live in Mississippi; approximately one out of five Mississippians do not have health insurance (DBIH, 2010).

Jack (2007) argues that many Mississippians experience poverty at rates similar to or worse than some third-world countries. In recent years, Mississippians have lost jobs in industries that once provided high wages and generous benefits. Job losses contribute to decreasing income, increased bankruptcies and fewer people with health insurance.
Poor Mississippians receive inadequate education, have limited access to quality health care, and experience physical and environmental risks that contribute to a poor diet compared to the poor in other states. According to the Mississippi State Department of Health Behavioral Risk Factors Surveillance System (2009), 35.4% of Mississippians are either overweight or obese. The facts are more dire for people living in the Mississippi Delta along the Mississippi River. This area is considered the poorest region in the state with the highest and most serious health problems in the United States (Mississippi Hospital Association, 2010).

Researchers find that the severe health problems of people living in the Mississippi Delta region are the result of complex health care and economic issues combined with political and social factors (Gnuschke, Hyland, Wallace, Hanson, & Smith, 2008). Disparities exist in available public health resources throughout the Mississippi Delta. As a result, Delta residents suffer from high cancer rates, heart disease, infant mortality and diabetes (Graham, 2008). The government developed and implemented programs to address these health care issues.

The Healthy People initiative of the U.S. federal government was developed in 1979 to address public health and medicine by identifying national goals for decreasing premature deaths and preserving independence for the elderly. In 1980, the report entitled *Promoting Health/Preventing Disease: Objectives for the Nation*, set forth 226 targeted health objectives to be achieved over 10 years. Healthy People 2010 is the latest edition of this effort to promote health and prevent illness, disability, and premature death (U.S. Department of Health and Human Services, 2000).
Healthy People 2010 was created based on comprehensive information derived from 350 national organizations and 250 state organizations concerned with public health, mental health, substance abuse, the environment and business. Two goals (organized in 28 focus areas, each with specific objectives) are identified for Healthy People 2010 (a) to increase the quality and years of healthy life, and (b) to eliminate health disparities (U.S. Department of Health and Human Services, 2000). Two major workplace-specific objectives of the plan include:

1. At least three quarters of U. S. employers, regardless of size, will offer a comprehensive employee health promotion program including the five elements listed below:
   a. Reduce tobacco use by adults.
   b. Reduce the cost of lost productivity due to alcohol and drugs.
   c. Increase the proportion of adults who engage in regular, preferably daily, moderate physical activity for at least 30 minutes per day.
   d. Increase the proportion of adults who are at a healthy weight.
   e. Reduce deaths from work-related injuries.

2. At least three-quarters of U. S. employees will be participating in employer sponsored health promotion activities (Partnership for Prevention, 2009, p. 16).

Workplace health promotion programs improve health for employees and overall profitability (Ball, 2009). From a public health perspective, conducting behavioral change interventions at work offers many advantages including (a) increased opportunities to reach more individuals, and (b) the ability to conduct multilevel interventions that
address both organizational policy and individual factors (Bull, Gillette, Glasgow, & Estabrooks, 2003). Workplace health promotion programs benefit employers and employees by offering services and instituting policies to improve employee health and productivity, develop human resources, and control medical costs (Kruger, Yore, Bauer, & Kohl, 2007).

Statement of Problem

Despite increasing evidence suggesting workplace health promotion programs are beneficial for employees and employers; participation in the programs remain low (Clark, 2008; Franklin, Rosenbaum, Carey, & Roizen, 2006; Kwak, Kremers, van Baak, & Brug, 2006; Linnan, Sorensen, Colditz, Klar, & Emmons, 2001). Although many studies have been conducted, most do not include participation rates. Increased participation rates can be used to justify the programs, to increase effectiveness for delivery and evaluation, and to improve the generalization of findings (Ball, 2009; Linnan et al., 2001).

Purpose of the Study

The purpose of this research is to describe factors influencing participation in workplace health promotion programs for the purpose of improving the programs for increased participation in the Mississippi Delta region. Increased employee participation in workplace health promotion programs can lead to healthier lifestyles for employees and provide a reduction in medical costs for businesses.

Significance of Study

The number of individuals with chronic illnesses- coronary heart disease, stroke, cancer, cardiovascular disease, and diabetes; has increased annually in the United States and researchers find that these diseases are concentrated more in minority and low-
income populations like those found in Mississippi. In 2005, 133 million Americans had at least one chronic condition (Bodenheimer, Chen, & Bennett, 2009). These diseases represent 70% of chronic disease morbidity and death experienced by U.S. citizens (Wang et al., 2009). Many chronic diseases correlate with obesity. Currently, Mississippi has the highest obesity rates in the nation (Mississippi State Department of Health, 2011). Mississippi Delta citizens are 1.16 to 1.45 times more likely to die from cardiovascular disease, cancer, stroke, and injury than other citizens in the country (Cosby & Bowser, 2008).

Improving educational efforts to prevent chronic diseases requires a better understanding about the attitudes and beliefs individuals have about chronic diseases (Wang et al., 2009). Previous research on workplace health promotion programs focuses on urban areas (Ball, 2009; Hundley, 2010; Isaak 2010; & Weatherill, 2004). The present study examines employee perceptions of workplace health promotion in the Mississippi Delta, a rural area identified as one of the three unhealthiest places to live in the U. S. (Mirvis, Steinberg & Brown, 2009).

The results of the present study will contribute to the body of knowledge required to determine the health promotion needs of employees at greatest risk for disease and high health care costs (Ball, 2009). Data from the present study provides an internal assessment that can be used by employers to enhance workplace health promotion programs by attracting and maintaining employee participation and reduce medical costs (Kruger et al., 2007).
Limitations

A survey to gather quantitative information from employees of two universities is used in this exploratory research. No qualitative data was collected to understand the meanings behind the responses (Corbin & Strauss, 2008; Swanson & Holton, 2005). Voluntary participation presents limitations, such as a low response rate and potential duplication of participants. Another limitation is that people who chose to participate may differ from the type of people who chose not to participate. For example, those who participated in the study may place a higher value on their personal health, while those who did not participate place less value on their personal health. Another limitation is that the race/ethnicity of employees at the two universities differ significantly. One university employs approximately 74% Whites compared to 11% Whites employed at the other. In addition, the number of faculty members at each university is significantly different: 163 faculty members compared to 259.

Delimitations

The scope of this study does not include an investigation into changes in employee productivity as it relates to workplace health promotion programs, but rather is focused on employee perceptions of the program. The study’s population consists of employees from only two organizations in Mississippi due to a lack of workplace health programs in the Mississippi Delta, as well as time constraints of the researcher.

Research Objectives

Based on the literature regarding employee participation in workplace health promotion programs, the research objectives include the following:

RO1: Describe employee socio-demographic characteristics: a) gender,
b) race/ethnicity, c) age, d) education level, e) organization, f) job classification, and g) participants and non-participants of workplace health promotion programs.

RO2: Determine if a relationship exists between socio-demographics and factors influencing participation in workplace health promotion programs.

RO3: Determine factors influencing the likelihood of participation in workplace health promotion programs.

Conceptual Framework

In Figure 1 the theoretical basis for the present study is depicted. Ball (2009) argues that effective workplace health promotion programs rely on the employees’ willingness to participate in services; therefore, employees’ perception of incentives and challenges regarding workplace health promotion programs contribute to increased or decreased participation. Increased employee participation in workplace health promotion programs can lead to healthier lifestyles for employees and provide a reduction in medical costs for businesses. The present study is grounded in social cognitive, organizational change, and human capital theories.

Social cognitive theory provides a conceptual framework, integrating personal behavioral, and environmental influences, to understand the circumstances that influence human behavior (McAlister, Perry, & Parcel, 2008). Social cognitive theory includes five key concepts: psychological determinants of behavior, observational learning, and environmental determinants of behavior, self-regulation and moral disengagement. Whitehead (2001) argues that health education is best addressed using social cognitive theory.
In organizational change theory, change is seen as a multifaceted process progressing through stages. Lewin (1951) states that a group setting is the most effective situation in which to create change in individuals: change occurs in three steps: unfreezing, moving, and refreezing. Health promotion should exist as a systematic structural component within an organization (Lowe, 2003). Incorporating health promotion in organizational cultures requires a change process.

Human capital theory refers to the set of abilities and skills an employee gains for financial or productive potential through education or on-the-job training (Becker, 1964). The primary determinants to improve individuals’ standards of living derives from investing in the skill, knowledge and health of the people; these factors are then expected to contribute to a country’s economic structure (Becker, 2002a). A decrease in the death rate of working age employees may improve earnings potential by extending the length of their life span.
of time wages are earned; a well-balanced diet increases strength and stamina, and therefore increasing capacity (Becker, 1975). For the employer, health promotion programs constitute an investment in reducing medical costs. For the employee, health promotion programs increase time spent in the workplace due to the employee’s health. For the organization, investments in health align health-related benefits and productivity with organizational profitability (Ginn & Henry, 2001).

Definition of Terms

Key terms significant in this study include:

1. *Body mass index*: a measurement used to determine whether an individual is under or overweight. This is calculated by dividing a person’s weight in kilograms by the square of their height in meters. A measurement of 20-25 is normal (Collins English Dictionary, 2010).


4. *Employer*: a person, company or organization employing individuals for wages (Webster’s, 1989).

5. *Health promotion*: any planned combination of educational, political, regulatory, and organizational support for actions and conditions of living conducive to the health of individuals, groups, or communities (Green & Kreuter, 1991).
6. *Incentive*: something that motivates or encourages a person to do something (Webster’s, 1989).

7. *Obesity*: an excessive amount of accumulated fat on a human body usually identified by a body mass index of 30 or greater (Webster’s, 1989).

8. *Perceptions*: the act of comprehending or understanding (Webster’s, 1989).

9. *Workplace health promotion*: any set of activities in the workplace implemented to assist employees in developing, maintaining, or improving health behaviors (Larson, 2001).

**Summary**

Chronic illnesses among employees result in increased health care and insurance costs for employers. Researchers find that investing in workplace health promotion programs is cost effective for businesses (Partnership for Prevention, 2009). The purpose of this study is to advance the existing body of knowledge regarding the incentives and challenges to participating in a workplace health promotion program from the employees’ perspective. In Chapter I, a brief introduction to chronic health issues impacting employees, especially in rural Mississippi, that lead to the need and efficacy of workplace health promotion programs is provided, along with details including the purpose, research objectives, limitations, delimitations, and theoretical framework of this research.

In Chapter II the literature related to workplace health promotion, and the three theories supporting this research will be discussed. In the remaining chapters, a detailed explanation of the research methods used, the data, results, and a discussion of the findings with recommendations for future research are provided.
CHAPTER II
LITERATURE REVIEW

Overview

This literature review, starting with general definitions of health promotion also includes discussions of the history, components need for, and challenges to workplace health promotion programs. Following is a discussion of the three theories guiding this research- social cognitive theory, organizational change, and human capital theory– and how each are related to workplace health promotion. The focus of the final section is the health of individuals living in Mississippi and the Mississippi Delta.

Health Promotion

According to Beric and Dzeletovic (2003), two definitions of health promotion have been widely used. The following general definition was developed at the International Conference on Health Promotion:

Health promotion is the process of enabling people to increase their control over, and to improve their health. To reach a state of complete physical, mental, and social well-being, an individual and group must be able to identify and realize aspirations, to satisfy needs, and to change or cope with the environment. Health, is therefore seen as a resource for everyday life, not the objective for living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore health promotion is not just the responsibility of the health sector, but goes beyond health life-styles to well being. (p.455)
Green and Kreuter (1991) define health promotion as “Any planned combination of educational, political, regulatory, and organizational support for actions and conditions of living conducive to the health of individuals, groups, or communities” (p.4).

According to Sloan, Gruman, and Allegrante (1994), health promotion efforts can be designed to address two perspectives:

1. Sources of risk external to the individual
2. Individual behavior in relation to risk factors.

For example, health and security policies have been defined for the public at the city, state, and federal levels. These policies do not require individuals to identify risks to their health and often do not require a change in individual behaviors. Health promotion related to alleviating risk factors focus on a finite number of issues including smoking, hypertension, obesity, cholesterol levels, physical fitness, food and nutrition, the misuse of drugs and alcohol, and the management of stress. The goal of health promotion includes motivating people to change lifestyles for short and long-term positive health outcomes individually and collectively. In this first section of the literature review, the foundation and the process of the workplace health promotion movement is discussed.

History of the Workplace Health Promotion Movement

In 1879, an athletic association was created to benefit employees at the Pullman Company, thought to be the first workplace health promotion programs in the United States (Chenoweth, 2007). In 1894, John H. Patterson, president of the National Cash Register Company, authorized morning and afternoon exercise breaks. After these exercise breaks were seen to be successful, Patterson arranged to build a 325-acre park and gymnasium for employees and their families (Jensen, 1987). It would take many
decades, however, before the importance of workplace health promotion programs was generally recognized.

In the late 1960’s, health promotion in the workplace focused on a particular disease or risk factor, or a single unsafe operation affecting the health of employees: environmental, social, or organizational factors were not considered (Chu & Dwyer, 2002). However, the adoption of the 1970 Occupational Safety and Health Act (OSHA) marks the turning point after years of governmental non-involvement in workplace illness, injury, and death. OSHA was designed to create hazard-free work environments, and contains regulations to enforce minimum standards of workplace health and safety. These laws encourage employers to take legal and leadership roles more seriously by setting proactive policies and building a healthy organizational culture (Chu & Dwyer, 2002).

Most health and safety laws throughout the world require employers to provide a safe workplace, a safe system of work, and sound equipment and materials. Although the national rates for workplace accidents and deaths have decreased from 11.0 per 100 employees in 1973 to 4.6 per 100 in 2005, the rate of severe cases causing restricted or lost workdays has only declined from 3.4 to 2.4 per 100 employees in that same time period (Chu & Dwyer, 2002). Out of the top four causes of injuries and deaths (homicides, falls, highway incidents, and struck by objects), only homicides have shown a decrease in incidents.

A number of publications were produced in the 1970s to promote effective disease prevention and health promotion programs for businesses. For example, a report by the National Chamber Foundation (Sehnhert & Tillotson, 1978) focused on the need

Health promotion programs began to be prevalent in workplaces during the 1980s. The programs focused on individual behavior but offered a larger range of interventions, such as health screenings, stress management courses, physical activity programs, and health information. Reports such as Prospects for a Healthier America were published to identify objectives for health promotion in business and industry (U.S. Department of Health and Human Services, 1984). In the 1990s, workplace health promotion programs became a vital part of corporate strategy and values requiring both employees and management to transform companies into health-promoting environments (Chu & Dwyer, 2002). The Healthy People 2000: National Health Promotion and Disease Prevention Objectives were developed to report specific goals and programs targeted for the decade from 2000-2010 in the areas of health promotion, health protection, preventive services, and surveillance and data systems (U.S. Department of Health and Human Services, 1991).

Components of Workplace Health Promotion Programs

According to Jensen (1987), wellness derives from the most favorable combination of physical and mental health, and well-being. To accomplish wellness requires health promotion, health protection, disease prevention, and support. Health
promotion encourages healthy living through workshops in nutrition, weight management, stress management, physical fitness, back care, smoking cessation, medical education, and self-care programs. Health protection refers to the policies and procedures governing the occupational and environmental safety guidelines. Disease prevention involves health screenings and immunizations. Support includes the information sharing and encouragement individuals receive from family, peers, and friends (Jensen, 1987).

According to Chu & Dwyer (2002), the most crucial function of employers is to lead and direct the company. As a change agent rather than the traditional command and control business owner, an employee could play a significant role in developing a strong organizational structure supportive of workplace health promotion. A strong organizational structure strengthens job satisfaction. Therefore, building a strong organizational structure is desirable and necessary.

For workplace health promotion programs to be successful, they must be immersed in an organization’s culture (Jensen, 1987). Employers must take an active role in promoting, supporting, and encouraging participation to realize benefits from the health promotion program. The support of senior management can be demonstrated by providing a physically safe work atmosphere by allowing time for employees to attend activities during work hours, by making resources available for programs, by requiring an accounting of program outcomes, by establishing a family friendly work environment, by creating a culture of fairness, and by participating in health promotion programs themselves. (Shain & Suurvali, 2001). One of the best strategies for developing an effective health promotion program is to ensure policies meet the interests of both employees and employers (Chenoweth, 1994). For businesses owners to obtain the
benefits of a workplace wellness program, a quality program must be offered. Healthy workplace success cannot be achieved unless company leaders align workplace and people practices to support health promotion activities (Lowe, 2003; Weatherill, 2004).

Drennan, Ramsay, and Richey (2006), state that a well-designed, measurable, and integrated health promotion system engages first-line supervisors and line workers in daily on-the-job activity. This type of system provides a long-lasting change to ensure health and productivity. Hillier, Fewell, Cann, and Shephard (2005), believe that attention to the quality of life for employees is an important component of effective workplaces. Organization leaders make decisions pertaining to health issues every day by addressing bullying, discrimination, addiction, injury, and absenteeism. Creating and cultivating wellness at work involves a balance between quality performance, a sense of purpose, effective and comprehensive communication, and work-life balance (Hillier et al., 2005). Employees tend to adopt their supervisors’ attitudes about safety and health. If management conveys enthusiasm and interest about a health promotion program, the employees are more likely to embrace the concept.

For health promotion programs to immerse in the corporate strategy, establishing an explicit, positive relationship to the financial health of the corporation is necessary. While decreasing and containing health care costs remains vital, this is not the only way improved employee health might increase business performance. Greater gains may be experienced through the direct effect of positive employee health on individual or group productivity, improved quality of services, greater creativity and innovation, enhanced resilience, and increased mental capacity are also identified as factors related to positive employee health (Hillier et al., 2005).
Types of Workplace Health Promotion Programs

Workplace health promotion programs vary from exercise classes and workshops to in-house fitness facilities and often include an educational component such as nutrition or stress reduction classes (Parks & Steelman, 2008). Aldana, Merrill, Price, Hardy, & Hager (2005) examined a health promotion program of a Nevada school district in which 11 components are offered:

1. *Brighten your smile*: participants committed to brushing twice and flossing once daily.

2. *Holiday weight challenge*: Participants weighed themselves before Thanksgiving and after New Year’s and received a prize if weight was maintained.

3. *H2O challenge*: promotes awareness about dehydration and protection against heat-related conditions.

4. *Tame the TV*: Employees are encouraged to substitute healthier activities for TV watching.

5. *Mount Everest fitness challenge*: teams moved a certain distance on a web-based map as they exercised, complied with the Food Pyramid Guide, and received adequate rest.

6. *March nutrition mystery*: clues to solve a mystery became available as participants ate five serving of fruits and vegetables daily.

7. *Test your rest*: participants committed to a 7 to 9 hour block of rest each day.
8. *Ironman Triathlon fitness challenge*: each team received points for exercising, daily water intake, eating fruits and vegetables daily, and getting adequate amounts of sleep.

9. *Train your brain*: participants committed to reading a few minutes each day.

10. *Exercise for life*: participants committed to 8 weeks of exercise including 30 minutes a day for 5 days a week.

11. *Buckle up America*: participants committed to buckling themselves and other occupants when they were in a vehicle (p.132).

The Fannie Mae Corporation began a health promotion program offering exercise classes, free annual health screenings, walking programs and nutrition seminars. Over a five-year period, Fannie Mae documented a reduction in the number of employees considered to be at high risk for health issues, and found significant improvements with 86% of the employees who participated in the program. A reduction in the number of sick days and a decrease in health care expenses during a 3-year period were also noted (Thornton & Johnson, 2010).

Researchers evaluated a health promotion program designed to address the body weight, general health variables, physical capacity and musculoskeletal pain of health care workers (Christensen, Faber, Ekner, Overgaard, Holtermann & Sogaard, 2011). The program consisted of a dietary plan with an energy deficit of 1200 calories per day, strengthening exercises 15 minutes per hour, and cognitive behavioral training 30 minutes per hour during working hours. Leisure time aerobic fitness was planned for two hours per week. The extent to which various components of this program contribute to the overall health of individuals were inconclusive. However, researchers found the
support of management to be a strong indicator for a successful program (Christensen et al., 2011).

In the 1970s, risk managers focused on bottom-line targeting and in the 1980s the focus was on a combination of risk and quality of care in workplace health promotion (Chu & Dwyer, 2002). In response to unstable economic conditions and fluctuating markets, organization leaders have gradually changed from these reactive, issue-based approaches to more proactive, integrated system approaches. The integrated model includes health promotion, disease prevention, occupational safety hazard reduction, organizational development, and human resource management (Chu & Dwyer, 2002). The integrative model seeks to prevent and manage physical and mental health conditions, and minimize risk factors and health and safety accidents. Programs based on the integrative model has the potential to increase employee satisfaction and morale, improve the quality and efficiency of work, and create a supportive social atmosphere and workplace culture. This model has evolved into the integrative workplace health management model (WHM) (Chu & Dwyer, 2002).

According to Chu and Dwyer (2002), a series of steps are involved in implementing a WHM:

1. Ensure management support,
2. Establish a coordinating body,
3. Conduct a needs assessment,
4. Prioritize needs,
5. Develop an action plan,
6. Implement the plan,
7. Evaluate the process and outcome,
8. Revise and update the program. (Chu & Dwyer, 2002)

While individual business leaders have specific goals and objectives for health promotion program, the key principles of the WHM are to:

1. Improve work organizations and the working environment,
2. Develop healthy company policies and culture,
3. Encourage active participation by all involved,
4. Foster individual growth, work styles and lifestyles conducive to health,
5. Ensure health promotion and disease prevention strategies become an integral part of management practices. (Chu & Dwyer, 2002)

According to Chu and Dwyer (2002), employers are the “new gatekeepers of health care” due to their control over the health promotion programs they offer, and the environment in which their employees work (p.176). Continued research about the interconnectedness of policy, workplace culture, environmental concerns, ergonomics, individual and organizational factors of workplace health, provides a better understanding of the organization’s role in the well-being of the workforce.

Need for Workplace Health Promotion

According to Chu and Dwyer (2002), at least 1.1 million individuals die from work-related injuries and diseases annually and approximately 250 million accidents on the job resulting in 300,000 fatalities. There are 160 million new cases of work-related diseases annually, including mental and neurological illnesses, reproductive disorders, cardiovascular diseases, respiratory disorders, cancer, hearing loss, and musculoskeletal
disorders. Researchers predict the cost of workplace illness and loss of productivity will increase over the next few decades. Sloan et al. (1994), argue that stakeholders in the medical care system have not devoted sufficient efforts toward prevention of diseases but focus on the treatment of disease instead.

In 2002, American industries lost more than $16,000 per employee due to workers’ compensation for injuries, health care costs, and low productivity (Chu & Dwyer, 2002). Based on this statistic, 60% of the 138 million workers cost businesses $1.5 trillion in lost productivity annually. These substantial losses decreased U.S. competitiveness in the global marketplace (Drennan et al., 2006).

Globalization and technological changes result in negative effects for employers and employees. The pressure to compete globally causes company leaders to re-strategize business practices. Competitive demands have increased stress for employees with more demanding workloads, more hours at work, the need to work faster and cut costs, and operate with limited staff and support (Chu & Dwyer, 2002). The consequences of the increased demands on employees threaten their health and the collective health of the organization resulting in higher absenteeism, and staff turnover, decreased morale, and decreased job satisfaction.

According to Clark (2008), 50% of health care costs relate to lifestyle choices and can be prevented. Tobacco use and obesity have an annual economic impact of $157 billion and $117 billion respectively and are significant contributing factors for chronic illnesses, such as, cardiovascular disease, stroke, cancer, and diabetes (Partnership for Prevention, 2009). These chronic illnesses impact workplaces through increased health care, increased insurance costs, and reduced productivity (Partnership for Prevention,
According to Lovato et al. (1994), the workplace represents the most significant channel through which a wide selection of the adult population can be accessed systematically through health information and health promotion programs. Advantages include greater access to adults, reasonable consistency with the target population, adequate meeting space and management support.

**Challenges to Workplace Health Promotion Programs**

A variety of challenges affect workplace health promotion programs. One is the lack of awareness on the part of managers about how their behaviors affect employee health and well-being (Lowe, 2003; Polanyi, Frank, Shannon, Sullivan, & Lavis, 2000). Many factors within the workplace cause stress including a heavy workload, fast-paced environment, and poor relationships with coworkers and managers. Stress, known to be a precursor for illnesses, produces negative outcomes for organizations, such as high-employee turnover rates, poor quality control, decreased production, and increased absenteeism (Hillier et al., 2005).

A second problem with workplace health promotion programs involves the integration with other human resources policies and procedures to improve the work environment. An integrated approach to workplace health promotion requires management leadership and collaboration among diverse stakeholders (Lowe, 2003). It is important for health goals and objectives to be immersed in company mission statements and values, and for employees to participate in every facet of the programs (Chu, Driscoll, & Dwyer, 1997).

Leaders of large, profitable companies are more likely to develop workplace health promotion programs. However, about one-third of the total employees in the
United States work for small businesses (Linnan et al., 2008). Results from the 2004 National Worksite Health Promotion Survey indicate that businesses with more than 750 employees consistently offered more programs, policies, and services regarding health promotion than small businesses (Linnan et al., 2008). In addition, health promotion programs are often offered in a benefits package to full-time employees: contractual, part-time, and non-unionized employees, therefore have limited access to the programs (Polanyi et al., 2000).

Participation

Reaching the entire workforce with health promotion programs is also a significant challenge (Linnan et al., 2001). Even though executive management teams are increasingly implementing wellness programs, challenges continue to occur when employees do not take advantage of the activities (Clark, 2008). Authors of a Society for Human Resource Management study found that 55% of companies with an on-site gym or membership reimbursement plan have only 15% employee participation (Harden, Peersman, Oliver, Mauthner, & Oakley, 1999). Researchers found that people who are already healthy are more likely to use wellness programs to maintain their health; 20-60% of employees who are at greater risk for adverse health outcomes due to smoking, elevated blood and cholesterol levels, and inactive lifestyles are less likely to engage in workplace health promotion programs. Employees who do participate are more likely younger, well educated, females, nonsmoking, and white-collar (Harden et al., 1999).

The variation in participation rates suggests that workplace health promotion programs are not attractive to all employees, but sustaining the programs requires employee involvement (Harden et al., 1999). Clark (2008) identifies key components to
help increase participation in workplace health promotion programs: regular activities with ongoing promotion, the presence of one or more wellness leaders, and strategic incentives. Linnan et al. (2008) report in the 2004 National Worksite Health Promotion Survey that out of the 730 employers interviewed only 6.9% offered a comprehensive workplace health promotion program, and those businesses with a staff person dedicated to and responsible for health promotion were significantly more likely to offer a comprehensive program (Linnan et al., 2008).

Franklin et al. (2006) assessed the effectiveness of using emails to promote health in workplaces. The study involved 345 employees at a New York insurance company. The participants received emails, Monday thru Friday for 26 weeks. The emails provided strategies to encourage physical activity and to increase fruit and vegetable intake, along with links to web-based resources and tools. The number of employees who continued opening emails and clicking on health related links over six months, were considered participants of the program. After six months, 75% of the employees opened 50% of the daily emails. In addition, 75% of the participants continued to open at least one email a week at the conclusion of the 26 weeks. The researchers concluded that the rate of enrollment and sustained participation supported the feasibility of email communication for workplace health promotion.

Company leaders have designed health promotion programs for employees that included monetary awards, spa packages, tickets to events, gift certificates, and compensated work time (Clark, 2008). Nearly two-thirds of U. S. employers who provide health promotion programs, also offer incentives (Clark, 2008).
Some researchers argue that the inherent incentive to participating in workplace health promotion programs is better health and external incentives should not be offered. Clark (2008), states “The fact is most people do not want to know how unhealthy they are, most people do not enjoy working out, and most people do not want to change their eating habits” (p. 26). Incentives, therefore are thought to serve as inspiration to develop better and healthier lifestyles (Clark, 2008).

Volpp et al. (2009) randomly assigned 442 employees to receive information about smoking-cessation programs and 436 employees to receive the same information plus financial incentives. If an employee completed the smoking-cessation program, they received $100. If employees completed the program within six months of enrollment, they received $250; and if they continued with the cessation of smoking six months after the program ended, employees received $400. Results from the study indicated the incentivized group had higher enrollment rates than the information only group (15.4% compared to 5.4%) and also had significantly higher rates of smoking cessation than the information only group (14.7% compared to 5.0%).

Developing, implementing, and evaluating health promotion programs that positively affect health is a tedious process that requires knowledge of comprehensive, logical and relevant theories. Health promotion theories propose factors that explain, predict, motivate, or influence health behavior (Hundley, 2010). The following section describes the theoretical framework by which this study is grounded.

**Theoretical Framework**

The most widely used theoretical framework in regard to research about health education is social cognitive theory or SCT (Whitehead, 2001). Social cognitive
theories apply to many disciplines; however, research indicates Bandura as the most influential person applying SCT to health. A primary aspect of SCT is that human behavior is the outcome of the interconnectedness of personal, behavioral and environmental influences.

The focus of SCT is on the individual’s inherent abilities to develop environments to fulfill purposes they discover for themselves and emphasizes a reciprocal effect in the interaction between individuals and their environment. Another aspect of SCT is the human capacity for collective action enabling individuals to work together to achieve environmental changes benefitting the entire group (McAlister et al., 2008). According to McAlister et al. (2008), “SCT provides a comprehensive and well-supported conceptual framework for understanding the factors affecting human behavior and the processes through which learning occurs, offering insight into a wide range of health-related issues” (p. 175).

Bandura (2004) states, “Health promotion should begin with goals, not means; if health is the purpose, biomedical interventions are not the only way to it” (p. 143). Lifestyle habits significantly affect the quality of an individual’s health, therefore individuals who manage life habits may live longer and healthier lives (Bandura, 2004). Social cognitive methods develop successful self-management strategies for health habits, keeping people healthy through their lifespan (Bandura, 2004).

Four determinants: 1) knowledge; 2) perceived self-efficacy; 3) outcome expectations; and 4) perceived facilitators and impediments are fundamental to translating knowledge into successful health practices (Bandura, 2004). Knowledge of health risks and the benefits of different health practices are required precursors of
change (Bandura, 2004). If people are not aware of how lifestyle affects their health, they have no reason to change. The second determinant, perceived self-efficacy, or the belief that one could control habits related to health, plays a crucial role in personal change. Human motivation and engagement derive from self-efficacy (Bandura, 2004). Unless individuals believe they can take actions that produce favorable effects, they have little incentive to engage in the first place or to continue through difficult times.

The third determinant, outcome expectations, addresses the costs and benefits of specific health habits, the health goals individuals choose for themselves, and the plans they use to achieve the goals. Outcome expectations could take several forms (Bandura, 2004). Actual outcomes include the positive and adverse effects of the behavior and the resulting material gains and losses. Social outcomes refer to the reaction of individuals in one’s social group to an exhibited behavior. Personal outcome involves individuals’ positive and negative evaluation of themselves concerning their health behavior. Individuals tend to behave in ways that increase their sense of self-worth. Goals based on a value system, provide self-incentives to guide individual health (Bandura, 2004). The fourth determinant for health habits was an individual’s perceived facilitators and impediments. Some of the impediments hindering performance of healthy behavior are self-inflicted. Others reside in the social and economic structure of health systems (Bandura, 2004). Since organizations have personalities just as individuals do, collective values, beliefs, and purposes establish an organization’s culture and affect the behavior of the individuals involved and their effectiveness as a group (Weatherill, 2004). An organization’s culture plays a significant role in the attitude and behavior of its individual employees.
Organizational Change

Lewin (1947) researched the implementation of change as a process and believes that individual change happens most effectively in groups:

Experience in leadership training, changing of food habits, work production, criminality, alcoholism, prejudices – all seem to indicate that it is usually easier to change individuals formed into a group than to change anyone of them separately. (Lewin, 1951, p. 228)

Lewin (1951) also posits that a successful change process took takes place in three steps: a) unfreezing, b) moving, and c) refreezing.

Lewin (1951) believes human behavior originates from a quasi-stationary equilibrium supported by a powerful force field of driving and restraining forces altered under certain psychological conditions (Schein, 1996). During the first phase of a successful change process, an individual needs to be stirred up emotionally to unfreeze an established equilibrium before an old behavior can be unlearned and a new behavior accepted (Bargal, 2006; Burnes, 2004).

The unfreezing of the present level may involve quite different problems in different cases. Allport...has described the ‘catharsis which seems necessary before prejudice can be removed. To break open the shell of complacency and self-righteousness it is sometimes necessary to bring about an emotional stir up. (Lewin, 1951, p. 229)

Expanding on Lewin’s theory, Schein (1996) identifies three methods to achieve unfreezing, a) disconfirmation of the validity of the information, b) the induction of guilt or survival anxiety, and c) creating psychological safety. Schein (1996) argues “unless
sufficient psychological safety is created, the disconfirming information will be denied or in other ways defended against, no survival anxiety will be felt, and consequently, no change will take place” (p. 61).

The “moving” phase, of the change process as defined by Lewin (1951) describes a change process not only about acquiring new knowledge, habits and social skills, but much more. It is a process where knowledge, value systems and everyday changes occur in totality within the framework of the group. Influence for changing an individual’s perspective and behavior results in a group effort (Bargal, 2006). For successful re-education, the group leader must create an atmosphere of “we are in this together” (Bargal, 2006, p. 379). According to Lewin (1948), feelings of freedom and spontaneity are necessary. Conditions such as, voluntary attendance, informal meetings, freedom to voice grievances and emotional stability leads to changes in the individual’s self and social perceptions. The third stage defined by Lewin (1951) refreezing stabilizes the group at a new quasi-stationary balance to ensure new behaviors do not deteriorate. Unless group norms and organizational culture transform changes into individual behaviors, the new behaviors will not continue.

Successful implementation of change related to health care requires change readiness from an organization (Weiner, 2009). Based on Lewin’s three-step model of change, change management experts have developed strategies to promote readiness by unfreezing- existing mindsets and creating enthusiasm for change (Weiner, 2009). Egan (1985) stresses the importance of change agent skills; to promote health and well-being in human systems such as family, community, government, and the workplace. Life skills
such as self-assessment, planning, problem solving, and decision-making empower individuals to undertake health and wellness enhancing goals (Egan, 1985).

Authors from the National Institute for Occupational Safety and Health states, “A healthy work organization is defined as one whose culture and climate practices create an environment that promotes employee health and safety, as well as organizational effectiveness” (Lowe, 2003, p. 10). Organizations whose members strive for effectiveness in the 21st century value people for their potential to add to the company. In these organizations, helping employees gain additional knowledge is a priority because “human capital is widely recognized as the key ingredient for productivity and innovation in a knowledge-based economy” (Lowe, 2003, p. 7).

*Human Capital Theory*

Human capital has been conceptualized as the knowledge, attitudes, health, and skills of individuals developed and valued primarily for their financial, productive potential (Baptiste, 2001; Becker, 2007). In 1691, Sir William Petty made the first attempts to determine the monetary value of humans based on their labor (Kiker, 1966). The economist, Adam Smith, discussed the idea of humans as capital in his book, *Wealth of Nations* (as cited in Baptiste, 2001). However, it was Theodore Shultz who revolutionized the concept. In his address, to the American Economic Association in 1960, Schultz argues that human capital investment directly relates to finances expended on human advancement. For example, direct expenditures on education, health, and internal migration, earnings expended by mature students attending school, employees acquiring on-the-job training, and the use of leisure time to develop skills and knowledge are examples of how human performance can be improved and productivity enhanced.
Schultz (1961) argues that an investment in human capital contributes to a significant rise in work earnings and states “Truly, the most distinctive feature of our economic system is the growth in human capital” (p. 16).

Sweetland (1996) contends that human capital investment includes health and nutrition, but education emerges as the primary investment in human capital for empirical analysis. The literature linking education and human capital includes formalized education at the primary, secondary, and higher levels; informal education; on-the-job training; apprenticeships; and specialized vocational training. All of the concepts contribute to human capital and improves the financial capabilities of individuals (Schultz, 1971).

The set of abilities and acquired skills gained by an employee through education and job training, increases his or her employment opportunities and earning potential. Investing in the education of employees is an investment in human capital (Clark & Jones, 2011). On-the-job training exemplifies the impact of human capital on wages and employment (Becker, 1975). Many employees improve their efficiency by learning new skills and perfecting old skills while on the job and, in turn, increase their earning power. Consequently, increased productivity improves at a cost that includes the value placed on the time and effort of the trainees, the facilitation of learning provided by the trainers, and the equipment and materials used (Becker, 1975).

Although several articles and books are written on the human capital dimension of education and training, fewer discussions on health as human capital have been published (Becker, 2007). Three interrelated developments are relevant to the emerging concept of health as human capital:
1. The analysis of optimal investments in health by individuals, drug companies, and to a lesser extent by governments;

2. The value of life literature that analyzes how much people are willing to pay for improvements in their probabilities of surviving different ages and;

3. The importance of linking health to education and other types of human capital investments, and in linking investments in health to discount rates, to progress in fighting different diseases. (Becker 2007, pp. 379-380)

According to human capital theory, health promotion programs are an investment in employees. In that way, human capital theory aligns the interests of the employer and the employee concerning health promotion programs (Ginn & Henry, 2001).

Employers understand a healthy organization consists of satisfied and committed employees. On the contrary, an unhealthy organization reduces profits and increases absenteeism (Lowe, 2003; Lyden & Klengele, 2000). Foulke and Sherman (2005) state “employers should invest in their human capital in the same manner that they provide ongoing maintenance for an expensive piece of machinery” (p. 19). Workplace health promotion aligns the goals of health-related benefits delivery and productivity with organizational profitability (Foulke & Sherman, 2005). Levey and Levey (2000) examined 350 sources and studies determining the links between corporate culture and people management, employee health, productivity, retention, customer loyalty, and bottom-line business results. The findings, “support the assertion that healthier organizational cultures are more likely to reduce workforce turnover and stress; improve
employee health, productivity, performance, and retention; and lead to significant improvements in business results” (Levey & Levey, 2000, p. 1).

Over the past decade, a growing body of literature has developed on the macroeconomic and microeconomic relationship between health and productivity (Tompa, 2002). On the macroeconomic or community level, justifiable generalizations result from using a human capital strategy (Ginn & Henry, 2001). For example, Schultz (1997) studied the effect of nutrition programs on the productivity of individuals. He describes five types of human capital increasing the lifetime productivity of an employee: childhood nutritional status, education, migration, fertility, and an adult’s current health and nutritional status, as indicated by body mass index. The study proposes a model of how public and private agencies utilize these human capital forms to increase productivity in individuals (Ginn & Henry, 2001). Similarly, at the microeconomic or household level, Kedir (2009) utilized a human capital approach to examine the relationship between health measures and wages in Ethiopia. The study reveals education, height and BMI positively and significantly affects productivity.

Health and productivity management represents a new trend in health promotion; the concept of a health promoting workplace continues to increase. Making worker productivity the cornerstone of success for health promotion transforms wellness into a business issue versus a health issue (Ginn & Henry, 2001). Businesses realize, in order to compete in the global economy, a healthy, qualified, and motivated workforce is necessary (Chu et al., 2000). Health promoting workplaces establish balance between customer expectations and organizational goals and employee skills and health needs.
The activities provide a successful combination of human capital and economic development.

“One way to invest in human capital is to improve emotional and physical health” (Becker, 1975, p. 40). Increasingly, emotional health determines wages. According to Becker (1975), improving health occurs in many ways. A decline in the death of employees in the workforce improves earning prospects by extending the number of years they remain in the workforce; a healthy diet adds strength and endurance; and an improvement in working conditions (environment, higher salaries, and breaks) affects morale and productivity.

In recent years, The United States experienced an economic downturn. Specifically, Mississippians lost jobs in industries that once provided high wages and generous benefits. The significant job losses contribute to decreasing income, increased bankruptcies and a decreased number of people with health insurance (Jack, 2007). The next section explores the health crisis in the State of Mississippi.

Mississippi and Health

Mississippi has become a symbol for many of the societal problems affecting the poor of the United States. Of the challenges facing Mississippi, none is more important than the problems with health and the health care system (Cosby et al., 2010). The health problems plaguing Mississippi begins with the state’s history. From the days of slavery through segregation to the present-day hospital systems, unequal access to health care for citizens has been a struggle (Cosby et al., 2010). A history of segregation, experimentation, and discrimination in health care continues to plague the citizens of Mississippi. The heritage of the plantation economy, the Civil War, and financial
constraints do not only affect African American Mississippians. The century following the Civil War revealed an unequal distribution of wealth formulating small, wealthy, elite and leaving most of the rest of the state in poverty (Cosby et al., 2010).

In 2008, 21% of Mississippians lived in poverty, compared to the national average of 13.2%. Mississippi’s median income was $14,771 below the national average. Mississippi placed last across the country of individuals obtaining a high-school education and 48th in the achievement of a college education (Cosby et al., 2010; U.S. Census Bureau, 2006-2008). Mississippi’s poor socio-economic status leaves the state open for the emergence of health disparities. Since 1987, rates of overall cancer deaths in Mississippi exceed the national rates. In 2005, Mississippi experienced 20 cancer deaths per 100,000 citizens higher than the nation (Shivaji, Jones, & Cosby, 2010). The Center for Disease Control and Prevention (CDC) and the Mississippi State Department of Health conducted a Behavioral Risk Factors Surveillance System Study (BRFSS) in 2003 to determine the prevalence of health risk factors in Mississippi. The BRFSS is a tool used to assess health trends and chronic disease risks. The BRFSS is also used to evaluate the effectiveness of policies, programs, and prevention campaigns Mississippi State Department of Health, 2009). According to the BRFSS, diabetes was the seventh leading cause of death in 2008, with approximately 11.3% of Mississippians diagnosed with diabetes.

Early diagnoses of high-blood pressure prevent future complications and the onset of other diseases. Untreated high-blood pressure leads to stroke, kidney failure, or a heart attack. The 2008 BRFSS indicates approximately 37.1% of Mississippians received hypertension diagnose. The leading causes of death in Mississippi include heart disease
and stroke. Mississippi’s cardiovascular disease death rate remains highest in the United States. Tobacco use represents the single leading preventable cause of death in the United States. Nevertheless, one out of five deaths in Mississippi relate to tobacco (Center for Disease Control, Behavioral Risk Factors Surveillance System, 2009). Health issues relating to tobacco use include cancer, lung disease, and heart disease. People with high-cholesterol levels experience twice the risk of developing coronary heart disease. The 2009 BRFSS indicates 41.4% of individual’s reporting having cholesterol checks received notice that levels were high. In the 65 and older group, the percentage was 58.2.

Morbidity caused by obesity represents the second cause of death in the United States causing approximately 300,000 deaths a year. Overweight individuals significantly increase their risk of illness from hypertension, high cholesterol, Type 2 diabetes, heart disease and stroke, gall bladder disease, cancer of the endometrium, breast, colon, and prostrate as well as arthritis (Center for Disease Control, 2009). According to the Mississippi State Department of Health Behavioral Risk Factor Surveillance Survey (Mississippi State Department of Health, 2009), 35.4% of Mississippians were either overweight or obese.

*Mississippi Delta and Health.* The Mississippi Delta region experiences challenges in every social and societal development endeavor, including health, education, and economic disparities. The gap between the Mississippi Delta and the rest of the country mirrors those in developing nations of Africa. The challenges interconnect; poor health status contributes to decreased educational achievement. Low educational achievement leads to stunted economic growth, and both low educational achievement and poverty lead to poor health conditions. Poor health reduces the economic
development of the overall community through macroeconomic effects of reducing 
worker productivity, community resources for non-health care needs, external 
investment, and educational achievement (Mirvis et. al. 2009).

The Delta has experienced a long history of poor health problems compared to the 
rest of the nation (Mirvis et. al., 2009). Chronic disease rates in Mississippi are among the 
highest in the United States, and the Mississippi Delta has the highest rates of chronic 
diseases in Mississippi. A person living in the Delta has a greater chance of being obese, 
23% more likely to have high-blood pressure, 41% more likely to report having diabetes, 
and 13% more likely to report tobacco use than the rest of the nation (Mirvis et. al., 2009). 
Health disparities in the Delta can be understood in the context of the convergence of 
forces brought about by an “agrarian plantation economy, slavery, segregation, poverty, 
low educational achievement, and the limited access to health care typical of rural areas. 
These influences characterize the Delta region’s history and collectively have set the 
stage for persistent, substantial health disparities” (Cosby & Bowser, 2008, pp. 68-69). 

Summary

The chapter presents a review of studies examining the history of the workplace 
health promotion movement, defines health promotion, and discusses components of 
health promotion programs. Increased health care costs and health disparities facing the 
United States reveal the necessity of integrating workplace health promotion programs to 
compete in the global economy (Lovato et al., 1994).

The Center for Disease Control states that “chronic diseases, such as heart 
disease, stroke, cancer, diabetes, and arthritis are among the most common, costly, and 
preventable of all health problems in the U.S.” (Center for Disease Prevention and Health
Promotion, 2011). Increased health care costs cause employers to seek solutions to help control expenditures. Out of the problem of rising health care expenditures and increased insurance costs, workforce health management emerges as a new strategy (Foulke & Sherman, 2005). The approach recognizes the relationship between employee health, health care expenses, and employee performance. Healthier employees consume less health care monies, use less sick days, and are more productive (Foulke & Sherman, 2005).

Research indicates the Mississippi Delta as one of the unhealthiest regions in the United States. Although the literature indicates positive outcomes from the implementation of workplace health promotion programs, minimal data have been reported on employee perceptions of participating in programs. The present study seeks to discover the incentives and challenges of participation in workplace health promotion programs as perceived by employees. The next chapter details the methods selection and the process utilized to conduct the present study. Details include plans for participation requirements, data collection and analysis.
CHAPTER III

METHODOLOGY

Introduction

More than 64% of the U.S. population ranks as overweight or obese. Conditions of overweight and obesity correlate with increased risks for coronary heart disease, type two diabetes, cancers, high blood pressure, high cholesterol and stroke (Jones et al., 2010). These interrelated health issues cost the U.S. hundreds of billions of dollars in expenses related to work missed and productivity lost (Jones et al., 2010). As health insurance and medical care costs increase, interests in disease prevention and health promotion increases (Lovato et al., 1994).

Business leaders recognize many costs associated with health care as avoidable through modification of unhealthy lifestyles. Most health promotion programs are designed to help change unhealthy behaviors (Sloan et al., 1987). Workplace health promotion programs are primarily developed to help control health care costs, while simultaneously increasing productivity (Jensen, 1987). At its best, workplace health promotion contributes to the overall effectiveness of human capital and can positively influence policies and procedures that increase profitability for the company and employability of the individual (Partnership for Prevention, 2007).

This study will explore the following objectives:

RO1: Describe employee socio-demographic characteristics: a) gender, b) race/ethnicity, c) age, d) education level, e) organization, f) job classification, and g) participants and non-participants of workplace health promotion programs.
RO2: Determine if a relationship exists between socio-demographics and factors influencing participation in workplace health promotion programs.

RO3: Determine factors influencing the likelihood of participation in workplace health promotion programs.

In Chapter III, the research design and methodology used for the study are described. Beginning with a synopsis of the research design, a discussion of the population and the sampling methods to be used. A discussion of the survey instrument, validity and reliability issues, and data collection methods are also included. Finally, the data analysis methods are described.

Research Design

This is a non-experimental, exploratory study. Swanson and Holton (2005) argue quantitative techniques are effective for studying large groups of people and generalizing from the sample studied to broader groups beyond the sample. Quantitative research is either experimental, quasi-experimental, correlational, or descriptive. Descriptive research utilizes surveys to gather information about individuals, groups, and organizations. The present study was designed to discover employee perceptions of participation in workplace health promotion programs.

Electronic survey distribution and in-person survey collection opportunities were used to obtain data from employees of two Mississippi universities offering health promotion programs to employees. The questions of the survey are adapted from the HealthStyles Syndicated Survey Data (2004), which surveyed consumers by mail throughout the United States about perceptions of workplace health promotion. Kruger et al. (2007), addressed perceived barriers and incentives to participation in workplace
health promotion among U. S. companies, and Ball (2009) explored barriers and
incentives to participation in a university setting. The research methods in the study were
approved by the University of Southern Mississippi, Delta State University, and
Mississippi Valley State University Institutional Review Boards (IRB) prior to collecting
data (Appendix A, B, and C respectively). The IRB helps to ensure no human subjects
involved in the research are at risk of any harm or danger associated with their
participation in the study.

Population

More than the poor in other states, poor Mississippians receive inadequate
education, have limited access to quality health care, and experience physical and
environmental risks leading to a poor diet (Jack, 2007). The facts remain more ominous
for the Mississippi Delta. The Delta ranks as the state’s poorest region and the region
with the highest and most serious health problems (Mississippi Hospital Association,
2010). In four of the leading causes of death in the U. S., (cardiovascular disease, cancer,
stroke, and injury) the Mississippi Delta citizens fall between 1.16 and 1.45 times more
likely to die than the rest of the country in general (Cosby & Bowser, 2008).

The population for the present study includes employees from Delta State
University (DSU) and Mississippi Valley State University (MVSU) both located in the
Mississippi Delta. DSU and MVSU are two of the largest employers in the region,
employ a wide range of individuals in multiple job classifications, have extensive health
promotion plans for employees, and a diversity of race/ethnicities and socio-economic
statuses among employees.
Researchers at the Equal Employment Opportunity Commission established ten classifications for employees: officials and managers, professionals, technicians, sales workers, administrative support workers, craft workers, operatives, laborers and helpers, and service workers. Within each category, multiple job titles exist (Employer Information Report EEO-1, 2007). Executive, faculty, professional non-faculty, technical, clerical, skilled crafts, and service maintenance are job classifications represented at both universities and included in this study. The data in Tables 1 & 2 identify the number of employees in each job classification represented at each university. The tables also include the race/ethnicities of employees at the universities.

As indicated in Tables 1 & 2, the number of employees at both universities is equivalent; however, the race/ethnicity numbers are different. DSU employs an approximate 74% White population while MVSU employs an approximate 11% White population. There are 160 faculty members at MVSU and 259 faculty members at DSU. To reflect the perceptions of employees accurately, the target population consists of full-time and part-time employees (with the exception of work-study and graduate assistants).

Both DSU and MVSU offer similar free health promotion programs. Fitness classes include activities such as, aerobics, kickboxing, and Yoga. Wellness classes and wellness resources include discussing disease prevention and healthy eating choices and health coordinators offer lifestyle coaching to those interested. Free health screenings are offered periodically throughout the year at different events and activities. Campus recreation and activities are offered throughout the year at both university fitness centers as well as the opportunity to participate in sports leagues. Upon supervisor approval, the opportunity exists for employees to participate in fitness classes during work hours.
Figure 2 indicates the type of health promotion activities employees offer at both universities.

Table 1

*Delta State University, 2011 Employee Demographics*

<table>
<thead>
<tr>
<th>EEO Category</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive, administrative, managerial</td>
<td>38</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Faculty</td>
<td>221</td>
<td>26</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>259</td>
</tr>
<tr>
<td>Professional non-faculty</td>
<td>92</td>
<td>22</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>118</td>
</tr>
<tr>
<td>Technical/paraprofessional</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Clerical/secretarial</td>
<td>50</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>64</td>
</tr>
<tr>
<td>Skilled crafts</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Service maintenance</td>
<td>34</td>
<td>77</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>112</td>
</tr>
<tr>
<td>TOTAL</td>
<td>456</td>
<td>142</td>
<td>6</td>
<td>10</td>
<td>4</td>
<td>619</td>
</tr>
</tbody>
</table>

Data was collected from the population using a survey. Fink (2003) argues “surveys are tools for collecting information from or about people to describe, compare, or explain their knowledge, attitudes, and behavior” (p. 1). Surveys are a preferred method of collecting data in organizations. Advantages of using surveys over other research methods include minimal costs and efficient and broader in coverage (Swanson & Holton, 2005). The next section discusses the survey instrument.

Survey Instrument

The survey includes categorical and ordinal variables with overall percentages and statistical differences calculated to determine variances between demographic groups and factors influencing participation in workplace health promotion programs.
### Table 2

**Mississippi Valley State University, 2011 Employee Demographics**

<table>
<thead>
<tr>
<th>EEO Category</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive, administrative, managerial</td>
<td>2</td>
<td>44</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td>Faculty</td>
<td>24</td>
<td>117</td>
<td>1</td>
<td>17</td>
<td>1</td>
<td>160</td>
</tr>
<tr>
<td>Professional non-faculty</td>
<td>8</td>
<td>127</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>138</td>
</tr>
<tr>
<td>Clerical/secretarial</td>
<td>3</td>
<td>71</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>77</td>
</tr>
<tr>
<td>Technical, paraprofessional</td>
<td>0</td>
<td>23</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Skilled crafts</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Service maintenance</td>
<td>0</td>
<td>103</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>105</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>38</td>
<td>497</td>
<td>3</td>
<td>21</td>
<td>4</td>
<td>563</td>
</tr>
</tbody>
</table>

Construct areas explored by the survey include demographics, perceived incentives and challenges to participation in workplace health promotion, and use of health promotion services (Ball, 2009).

**Socio-Demographics**

Socio-demographic categories included in the survey are gender, race/ethnicity (African American/Black, Caucasian/White, Hispanic, Native American, Asian, or other), age, highest education level completed (high-school diploma or less, some college, bachelors degree, some graduate work, masters degree, specialist, doctorate),
Figure 2. Health Promotion Activities offered at DSU and MVSU

organization (Delta State University or Mississippi Valley State University), and job classification (executive/administrative/managerial, faculty, and staff). These questions yielded categorical and ordinal data reported in Chapter IV.

Factors Influencing Participation

The second research objective of this study was to determine if a relationship exists between the socio-demographics and factors influencing participation in workplace health promotion programs. Respondents were asked to answer questions regarding participation in particular physical activity and nutrition services. Respondents selected either yes or no for each service. These questions yielded categorical data which are reported in Chapter IV.
Program Participation

RO3 sought to determine the factors influencing the likelihood of participation in workplace health promotion programs. Respondents were asked to answer yes or no to indicate if the following elements influence their participation in workplace health promotion programs. Incentives included receiving support from their supervisor, getting paid time off to participate in services, and holding programs at a convenient time and place. Respondents were asked to indicate if certain challenges hinder them from participating in a workplace health promotion program. Challenges included lack of energy, lack of interest, no time during work hours, already involved in similar programs or activities, and lack of self-discipline. This question yielded categorical and ordinal data and is reported in Chapter IV.

Table 3

Survey

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Survey Questions</th>
<th>Type of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO1</td>
<td>Questions 4</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ordinal</td>
</tr>
<tr>
<td>RO2</td>
<td>Questions 1, 2, 4</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ordinal</td>
</tr>
<tr>
<td>RO3</td>
<td>Question 3</td>
<td>Categorical</td>
</tr>
</tbody>
</table>

Validity and Reliability

Fink (2003) argues a valid instrument obtains accurate results. A survey instrument that measures what it intends to measure obtains valid data. The survey utilized in the present study was adapted from previous surveys, which have
demonstrated validity. The previous surveys have been successful in measuring perceptions of influences effecting individuals participating in health promotion programs (Ball, 2009; HealthStyles Syndicated Survey Data, 2004; Kruger et al., 2007). According to Fink, (2003) construct validity is established by demonstrating that a survey distinguishes between the respondents who do and do not exhibit certain behaviors. To test for construct validity, The HealthStyles Syndicated Survey questions were developed with the assistance of content experts from several health agencies and the Centers for Disease Control and Prevention. Kruger et al. (2007), utilized the survey and Ball (2009) adapted the survey with the assistance of the university’s wellness coordinator.

Swanson and Holton (2005) state external validity establishes a domain for the findings of research studies to be generalizable. The sample should be representative of different subtypes of people and organizations. Universities employ individuals to work in various capacities therefore the data will reflect perceptions of individuals from different job classifications. For the current study, generalizing refers to the applicability of employees perceiving the same incentives and challenges of workplace health promotion programs.

Swanson and Holton (2005) state “internal validity relates to establishing a causal relationship where specific conditions are shown to lead to other conditions” (p. 338). All data collection takes the form of a model or assumptions about the process of the research studied. The present study identifies factors likely to influence participation in workplace health promotion programs. Swanson and Holton (2005) argue the main threat to internal validity develops from unmeasured events occurring independently of the data collection, accounting for the results received in the study.
A threat to validity may be the use of different modes of survey collection. The present study distributed the survey through electronic survey distribution and in-person opportunities at each university. Different types of survey collection procedures often produce different answers to the same questions (Dillman et al., 2009). Several factors differentiate between the different types of survey collection tools and may be the reason for response differences. These factors can be grouped in three main categories: media related factors, factors influencing the information transmission, and interviewer effects. Media-related factors consist of who has the most control over the question-answer process. In an interview, the interviewer controls the pace and flow of the communication, while in a mail or Internet survey the respondent is in control. In Internet and mail surveys, visual appearance of the survey design may have influence on the way questions are answered. The graphic design or layout of the survey may give additional meaning to the text, thereby influencing the respondents answer (De Leeuw, 2005).

Reliability of a research design indicates the operations of a study consistently repeat itself, with the same results. Reliability ensures a researcher replicating a study, and following the same procedures as a previous researcher, should arrive at the same findings and conclusions as the earlier researcher (Swanson & Holton, 2005). The survey in this study was adapted from an existing survey (Ball, 2009) which included modified content from the public HealthStyles Syndicated Survey Data (2004) also used by Kruger et al. (2007).

Permission was obtained from the author (Ball, 2009) of the survey to modify the instrument for the needs of this study (Appendix E). Questions were modified to reflect the health promotion services offered at the universities surveyed in this study, as
opposed to reflecting the university population characterized in Ball’s (2009) study. In addition, questions in this study reflected the health promotion services respondents currently participated in, rather than which services they would likely participate in as depicted in Ball’s (2009) study.

Data Collection

Targeting the entire population in the present study took place through the two university’s network services, employee email accounts, and in-person survey collection opportunities. Zoomerang was used to distribute the survey via the Internet. The survey was distributed electronically via the two universities email systems and a secure webpage (Appendix D). Swanson & Holton (2005) state Internet and Intranet survey practices have increased within the past decade. Birnbaum (2004) lists several advantages to Internet survey usage. Researchers are able to collect data from participants at any time and from any place. Surveys can be administered promptly to anyone with Internet access. Data can be saved instantly in electronic form, reducing the cost of space, equipment, paper, and labor. Umbach (2004) argues Internet surveys provide a less threatening method for collecting sensitive information. Finally, data received from the participants can be stored in a form ready for review, saving costs of coding and data entry.

Cobanoglu and Cobanoglu (2003) argue when using web-based surveys researchers should employ other methods for dissemination, such as mail or fax for parts of the population that do not have Internet access. Employees without email accounts were determined with the assistance of each university’s Institution for Research and
Planning directors. An additional attempt for increasing the response took place through an in-person distribution of surveys at each university.

The researcher emailed the survey link and reminders to each Wellness Director at the two universities. The Wellness Directors emailed the survey link and reminders to the employees via the two universities network services. Enlisting the aid of the directors helped to protect employee identity and avoid privacy violations. The researcher communicated only with the Wellness Directors.

The initial communication to the employees consisted of an introduction of the study, including the purpose and request for participation with an expected date for the survey arrival. Dillman et al. (2009) suggest informing potential participants the survey is coming as a strategy for helping to increase the response rate. The next communication included the link for the actual survey. The third communication served as a reminder encouraging employees to complete the survey and a thank you note for those who already completed the survey. The survey link was also included in the third communication (Dillman et al., 2009). Archer (2003) suggests shortening the time between notices and reminders, he further states 8-10 working days or less is sufficient. Each communication for the present study was sent 3 days later from the previous communication. The fourth email served as the final electronic communication reminding and encouraging employees to complete the survey. Once this process is over, in order to increase the response rate Dillman et al. (2009) suggests changing survey collection procedures. Despite the fact that a 100% response rate is rare, researchers should aim to have as high a response rate as possible (Baruch & Holtom, 2008).
McMorris, Petrie, Catalano, Fleming, Haggerty, and Abbot (2009) argue self-administered, in-person surveys help reduce the non-response and coverage error often associated with sensitive questions. The survey questions for this research addresses personal health habits of the respondents. Therefore, the responses to the questions may be perceived as sensitive information. In order to help increase the response rate, the researcher worked with Wellness Directors to offer an opportunity for employees to complete surveys in conjunction with an existing health promotion event.

On the day of the event, the researcher and health promotion staff informed the participants that the survey must only be filled out by employees of the university. The researcher requested the assistance of the health promotion staff to help disseminate and collect surveys from employees. In order to reduce error of duplication, the researcher and volunteers asked the participants if they already completed the survey online. If the response was yes, the researcher and volunteers thanked the employee for their participation and advised the participants that it was not necessary for them to complete the survey a second time.

Collection of the surveys took place an additional time by going to the employee department identified as not having email accounts. The researcher and health promotion staff set up a table in each department and asked employees to complete the survey. In order to reduce error of duplication, the researcher and volunteers asked the participants if they had already completed the survey online. If the response was yes, the researcher and volunteers thanked the employee for their participation and advised the employees that it was not necessary for them to complete the survey a second time.
Cobanoglu and Cobanoglu (2003) and Dillman et al. (2009) recommend offering incentives when conducting web-based surveys to achieve a higher response rate. Further, they recommend delivering incentives promptly and including a timeline in the introductory email about how the distribution of incentives will take place. Based on a study conducted by Goritz (2006), incentives used with web-based surveys increased the response rate by an average of 4.2%.

Due to the large population of the current research, the researcher offered each participant the chance to win a cash prize of $50 by entering their name in a one-time drawing for each university. Web survey respondents and in-person respondents received directions as to how to enter into the drawing after completing the survey. Directions were as follows:

Thanks for completing the survey! If you are interested in participating in a one-time drawing for a cash prize of $50, please include your email address or phone number for contact purposes.

The surveys were deposited in an envelope at each in-person opportunity and kept by the researcher. The survey remained open for 21 days. At the conclusion of the 21 days, the researcher asked the Wellness Director at each university to pull a name from a box of names of all names submitted in the drawing from each respective university. The name selected was the winner of the $50 cash prize at each university. The winner was contacted via phone or email. After contact was made with the winner, the researcher hand delivered the cash prize to the recipient. A description of the data collection plan is displayed in Table 4.
Data Analysis

The methods outlined in this section provide information used to analyze the present study’s questions. Responses to the survey were recorded in an electronic database and analyzed in SPSS. Surveys collected during in-person collection were entered into SPSS. According to Krejcie & Morgan (1970), the researcher needed a sample of 291 completed surveys from the population to reach a 95% confidence interval rate.

Table 4

Data Collection Plan

<table>
<thead>
<tr>
<th>Phase</th>
<th>Procedure</th>
<th>Responsible Party</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Sent introduction of the study and expected date for the survey arrival via email.</td>
<td>Researcher, wellness directors</td>
<td>Day 1-3</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Sent link for the actual survey via email.</td>
<td>Researcher, wellness directors</td>
<td>Day 4-7</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Sent reminder notification and link to the survey via email.</td>
<td>Researcher, wellness directors</td>
<td>Day 8-11</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Sent second reminder notification and link to the survey via email.</td>
<td>Researcher, wellness directors</td>
<td>Day 12-15</td>
</tr>
<tr>
<td>Phase 5</td>
<td>Disseminated and collected surveys at an event hosted by the health promotion staff at each university. Visited department in which employees did not have email accounts for in-person invitation to participate.</td>
<td>Researcher, graduate assistants, and health promotion staff</td>
<td>Day 16-21</td>
</tr>
<tr>
<td>Phase 6</td>
<td>Awarded $50 cash prize to one winner of the drawing at each university.</td>
<td>Researcher</td>
<td>Day 22</td>
</tr>
</tbody>
</table>
ROI was analyzed using descriptive statistics. For both RO2 & RO3, a logistic regression was employed. According to Swanson and Holton (2005), logistic regression is ideally designed for explaining and predicting dichotomous dependent variables. Logistic regression can be viewed as a distinct form of regression analysis utilized to classify participants into a dichotomous dependent variable (Swanson & Holton, 2005). The dependent variable in this study was dichotomous, yielding binary results; "yes" employees participate in workplace health promotion programs or "no" they do not. The binary response enabled an assessment of the association between the independent variables and the response variables (Manor, Matthews, & Power, 2000). The independent variables in the present study were socio-demographics, selected services, and factors influencing workplace health promotion program participation. Logistic regression identified the employees who “do” or “do not” participate in workplace health promotions based on socio-demographics (RO2) and employees “influenced to participate” or “not influenced to participate” based on a list of factors (RO3). Table 5

### Table 5

**Statistical Procedures**

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Items</th>
<th>Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe employee socio-demographic characteristics:</td>
<td>4</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>gender, race/ethnicity, age, education level, organization,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>job classification, and participants and nonparticipants of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>workplace health promotion programs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Determine if a relationship exists between socio-demographics and factors</td>
<td>1,2,4</td>
<td>Logistic regression</td>
</tr>
<tr>
<td>influencing participation in workplace health promotion programs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Determine the factors influencing the likelihood of</td>
<td>3</td>
<td>Logistic regression</td>
</tr>
<tr>
<td>participation in workplace health promotion programs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
provides the statistical procedures used in the investigation of the research objectives.

Summary

This non-experimental, exploratory study utilizes quantitative research methods. The study explores employee perceptions of workplace health promotion programs. Describing factors influencing participation in workplace health promotion programs can lead to increased employee participation in the programs. Increased employee participation in workplace health promotion programs can lead to healthier lifestyles for employees and provide a reduction in medical costs for businesses.

The research methods described in this chapter include data collected from two Institutions of Higher Learning in the Mississippi Delta region. The chapter describes the population researched, content development, instrumentation, and how the data were analyzed. The next chapter focuses on the results obtained from the data collection.
CHAPTER IV

RESULTS

Data Analysis Procedures

Socio-Demographic Characteristics

Data collected from the demographics section of the survey described the socio-demographic characteristics of employees as stated in RO1. Frequency distribution was used to report the number of employees in each category. The socio-demographic characteristics are gender, race/ethnicity, age, education level, organization, and job classification.

Relationship Between Socio-demographics & Factors Influencing Participation

For RO2 & RO3, logistic regression was conducted to determine if a relationship exists between factors and socio-demographic characteristics and to determine how the factors explain the odds of employees participating or not participating in the workplace health promotion program. Logistic regression focuses on relationships among variables, one variable being the dependent and the other the independent. Whitlock, Eckenrode, & Silverman (2006), utilized logistic regression to determine the prevalence, nature, and correlates of Self–Injurious Behaviors (SIB) on college campuses:

Predictors included demographics, history of abuse, and the presence of mental health conditions. The results indicated few demographics were associated with multiple SIB incidents. There were no differences between people with one single SIB incident and no SIB incidents. Compared with those with no SIB incidents, respondents with repeat SIB incidents were significantly more likely to be female than male (adjusted odds ratio (OR): 1.5; 95% confidence interval (CI): 1.1-1.9).
Respondents were less likely to be over 24 than in the 18-20 year age category (adjusted OR: 0.7; 95% CI: 0.5-1.0) and the only ethnic group to show significantly less repeat SIB incidents than white respondents were Asian respondents (adjusted OR: 0.7; 95% CI: 0.4-1.0). (p. 1943)

In this research, the dependent variable was participation in workplace health promotion programs and socio-demographics and factors influencing participation are independent variables. The independent variables in this research dataset are categorical and ordinal and do not have a numerical value; therefore dummy variables were assigned to the independent variables. The purpose of using logistic regression was to determine how socio-demographics explain the odds of employees participating or not participating in physical and nutritional services and to determine how the factors explain the odds of employees participating or not participating in the workplace health promotion program.

SPSS reports both the logistic coefficients (β) and the exponentiated logistic coefficient (Exp (β)). The logistic coefficient (β) helps determine the direction of the relationship (positive or negative). The exponentiated coefficients Exp (β) gives the expected change in the odds of participation versus not participating, per unit change in an explanatory variable (Field, 2009). An exponentiated value less than 1.0 represent a decreased change in the predicted odds; exponentiated values greater than 1.0 indicate increases in the percentage change in predicted odds; exponentiated values equal to 1.0 indicates the socio-demographic had no effect on participation.

The researcher dichotomized responses for employees who use health promotional services at their university (yes) and those who do not (no). The researcher created a dummy variable for participants and nonparticipants, yes = 1 and no = 0.
Employees were identified as a participant of the health promotion program if they selected “yes” to participating in any services provided by the university. The logistic regression estimated the likelihood of participation occurring and the results were reported in an odds ratio. The regression captured the differences in the occurrences of participation of employees.

For RO3, the researcher dichotomized responses into factors influencing participation in workplace health promotion programs and those that do not influence participation in workplace health promotion programs. The researcher created a dummy variable for influential factors and non-influential factors, yes = 1 and no = 0. A factor was identified as influential if an employee selects “yes” and non-influential if an employee selects “no”. In addition, a logistic regression model was conducted comparing those who participated in multiple services to those who do not participate at all.

This study examined health promotion services, incentives, and challenges associated with employee participation in workplace health promotion programs. Identifying correlates of participation in such programs provides opportunities through which employers can support healthier lifestyles for employees and potentially reduce medical costs for businesses. This study analyzed the results of 230 surveys collected from Delta State University (DSU) and Mississippi Valley State University (MVSU) employees, yielding a 17% response rate. One hundred sixty-five (72%) respondents were from DSU and 65 (28%) were from MVSU. All data were analyzed using SPSS.

Study results are presented in this chapter. Descriptive analyses of respondent socio-demographics, and logistic regression analyses of perceived incentives and
challenges to future participation in workplace health promotion programs, and future use of health promotion services are presented.

Results

Research Objective One

Describe employee socio-demographic characteristics: a) gender, b) race/ethnicity, c) age, d) education level, e) organization, f) job classification, and g) participants and non-participants of workplace health promotion programs.

Of the 1,182 employees invited to participate in the survey, 230 completed the instrument. The socio-demographic characteristics of the sample are shown in Table 6. The respondents were predominately female (n=149, 64.8%). A total of 93 (40.4%) participants identified as African American/Black compared to 639 (54%) of the actual employees, 113 (49.1%) identified as Caucasian/White compared to 494 (41%) of the actual employees, and 12 (5.2%) identified as Hispanic, Native American, Asian, or other race compared to 48 (.04%) of the actual employees. Respondent ages ranged from 18-62+, and the majority of respondents (n=182, 79.1%) were 35 and older.

Forty-three respondents (18.7%) reported having a high school diploma or completed some college courses as their highest level of education. Forty-five respondents (19.6%) completed bachelor’s degrees or had taken some graduate courses. One hundred thirty-two respondents (57.4%) either completed a master’s degree or a doctorate degree. Thirty-one (13.5%) of the respondents were executive or managerial employees compared to 86 (.07%) of the actual employees, 84 (36.5%) were faculty similar to 419 (35%) of the actual employees, and 102 (44.3%) were staff compared to 677 (57%) of the actual employees.
Table 6

Respondent Socio-demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>n=</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>71</td>
<td>30.9%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>149</td>
<td>64.8%</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td>African American/Black</td>
<td>93</td>
<td>40.4%</td>
</tr>
<tr>
<td></td>
<td>Caucasian/White</td>
<td>113</td>
<td>49.1%</td>
</tr>
<tr>
<td></td>
<td>Hispanic, Native American, Asian, Other</td>
<td>12</td>
<td>5.2%</td>
</tr>
<tr>
<td>Age</td>
<td>18-34</td>
<td>39</td>
<td>17.0%</td>
</tr>
<tr>
<td></td>
<td>35+</td>
<td>182</td>
<td>40.0%</td>
</tr>
<tr>
<td>Education level</td>
<td>Some College or Less</td>
<td>43</td>
<td>18.7%</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s to some graduate work</td>
<td>45</td>
<td>19.6%</td>
</tr>
<tr>
<td></td>
<td>Master’s or Doctorate degree</td>
<td>132</td>
<td>57.4%</td>
</tr>
<tr>
<td>Job classification</td>
<td>Executive/administrative/managerial</td>
<td>31</td>
<td>13.5%</td>
</tr>
<tr>
<td></td>
<td>Faculty</td>
<td>84</td>
<td>36.5%</td>
</tr>
<tr>
<td></td>
<td>Staff</td>
<td>102</td>
<td>44.3%</td>
</tr>
</tbody>
</table>

Research Objective Two

*Determine if a relationship exists between socio-demographics and factors influencing participation in workplace health promotion programs.*

Research Objective Two examined relationships between employee participation in onsite fitness centers, onsite exercise classes, health screenings, selecting healthy food choices, and participating in a weight loss program and socio-demographic characteristics. One hundred three (44.8%) respondents reported using the onsite fitness center, 66 (28.7%) participated in onsite exercise classes, and 128 (55.7%) participated in health screenings. Logistic regression analyses of the associations between physical and nutritional measures and socio-demographic factors indicated only two significant associations. All other associations were not significant. The estimates and confidence intervals of these predominately non-significant findings are presented below.
Socio-demographic Correlates of Using the Onsite Fitness Center

Odds ratio estimates suggested men had greater odds of using the onsite fitness center than women [OR = 1.71; 95% CI = 0.97-3.04]. Caucasian/White employees had greater odds of using the fitness center than African American/Black employees [OR = 1.48; 95% CI= 0.85-2.58]. The odds of using the fitness center for respondents aged 18-49 were 2 times that of respondents 50 and older [OR= 2.15; 95% CI= 1.00-4.63; OR= 1.34; 95% CI= 0.74-2.42]. Employees with a bachelor’s degree or some graduate work had greater odds of using the fitness center than those with a master’s or doctorate degree [OR= 1.18; 95% CI= 0.60-2.32]. Executive employees odds of using the fitness center were 2 times more likely than faculty and staff employees [OR= 2.31; 95% CI= 0.99-5.41]. Table 7 displays the relationship between participating in a fitness center and socio-demographics.

Table 7

Logistic Regression Analysis for Relationship between Utilizing a Fitness Center & Socio-Demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
<td>1.71</td>
<td>0.97-3.04</td>
</tr>
<tr>
<td>Female</td>
<td>63</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>59</td>
<td>1.48</td>
<td>0.85-2.58</td>
</tr>
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<td>Hispanic, Native American, Asian, Other</td>
<td>3</td>
<td>0.43</td>
<td>0.11-1.78</td>
</tr>
<tr>
<td>African American/Black</td>
<td>39</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>23</td>
<td>2.15</td>
<td>1.00-4.63</td>
</tr>
<tr>
<td>35-49</td>
<td>43</td>
<td>1.34</td>
<td>0.74-2.42</td>
</tr>
<tr>
<td>50+</td>
<td>36</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>
Table 7 (continued).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>17</td>
<td>0.77</td>
<td>0.38-1.55</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>23</td>
<td>1.18</td>
<td>0.60-2.32</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>62</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Job classification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>21</td>
<td>2.31</td>
<td>0.99-5.41</td>
</tr>
<tr>
<td>Faculty</td>
<td>31</td>
<td>0.65</td>
<td>0.36-1.17</td>
</tr>
<tr>
<td>Staff</td>
<td>48</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

Socio-demographic Correlates of Using Onsite Exercise Classes

Sixty-six (28.7%) respondents reported participating in on-site exercise classes. Odds ratio estimates suggested men had greater odds of participating in on-site exercise classes than women [OR= 0.57; 95% CI= 0.30-1.10]. The odds of participating in onsite exercise classes were greater for respondents aged 18-34 than employees aged 50 or more [OR= 2.02; 95% CI= 0.91-4.48]. A significant finding was employees with a high school diploma or some college were least likely to participate in exercise classes than those with a master’s or doctorate degree [OR= 0.36; 95% CI= 0.14-0.92].

Executive/administrative/managerial and faculty odds were less likely to use fitness centers than staff [OR= 0.67; 95% CI= 0.27-1.64; OR= 0.68; 95% CI= 0.36-1.28].

Table 8 displays the relationship between participating in on-site exercise classes and socio-demographic characteristics.

Socio-demographic Correlates of Participating in Health Screenings

One hundred twenty-eight (55.7%) employees reported participating in health screening tests. Men had greater odds of participating in health screenings than women
OR = 1.53; 95% CI = 0.86-2.74]. African American/Black respondents had greater odds of participating in health screenings than Caucasian/White respondents [OR = 1.23; 95% CI = 0.36-4.21]. The odds of participating in health screenings were greater for respondents age 35 and older than respondents 18-34 [OR = 1.03; 95% CI = 0.58-1.87].

Table 8

*Logistic Regression Analysis for Relationship between On-site Exercise Classes & Socio-Demographics*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>0.57</td>
<td>0.30-1.10</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>24</td>
<td>1.04</td>
<td>0.26-4.17</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>49</td>
<td>1.58</td>
<td>0.40-6.17</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>3</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>16</td>
<td>2.02</td>
<td>0.91-4.48</td>
</tr>
<tr>
<td>35-49</td>
<td>27</td>
<td>1.21</td>
<td>0.63-2.32</td>
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<td>50+</td>
<td>23</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>6</td>
<td>0.36</td>
<td>0.14-0.92*</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>19</td>
<td>1.62</td>
<td>0.81-3.25</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>41</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td>Job classification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>8</td>
<td>0.67</td>
<td>0.27-1.64</td>
</tr>
<tr>
<td>Faculty</td>
<td>22</td>
<td>0.68</td>
<td>0.36-1.28</td>
</tr>
<tr>
<td>Staff</td>
<td>35</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

Employees with a bachelor’s degree or some graduate work had greater odds of participating in health screenings tests [OR = 1.33; 95% CI = 0.66-2.66]. Table 9 displays
the relationship between participating in health screening tests and socio-demographic characteristics.

Table 9

*Logistic Regression Analysis for Relationship between Health Screening Tests & Socio-Demographics*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>45</td>
<td>1.53</td>
<td>0.86-2.74</td>
</tr>
<tr>
<td>Female</td>
<td>79</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>59</td>
<td>1.23</td>
<td>0.36-4.21</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>58</td>
<td>0.75</td>
<td>0.23-2.51</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>7</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>19</td>
<td>0.65</td>
<td>0.33-1.47</td>
</tr>
<tr>
<td>35-49</td>
<td>54</td>
<td>1.03</td>
<td>0.58-1.87</td>
</tr>
<tr>
<td>50+</td>
<td>52</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>24</td>
<td>1.02</td>
<td>0.51-2.04</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>28</td>
<td>1.33</td>
<td>0.66-2.66</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>73</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Job classification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>19</td>
<td>0.98</td>
<td>0.43-2.23</td>
</tr>
<tr>
<td>Faculty</td>
<td>43</td>
<td>0.65</td>
<td>0.36-1.16</td>
</tr>
<tr>
<td>Staff</td>
<td>63</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

*Socio-demographic Correlates of Healthy Food Choices*

Ninety-five (41.3%) employees reported participating in selecting healthy food choices in cafeterias. Odds ratio estimates suggested men had greater odds of participating in health screenings than women [OR= 1.25; 95% CI= 0.71-2.21]. African American/Black respondents had greater odds of participating in health screenings than Caucasian/White respondents [OR= 1.20; 95% CI= 0.35-4.06].
Respondents aged 18-34 had greater odds of selecting healthy food choices than respondents 50 or older [OR= 1.53; 95% CI= 0.72-3.27]. Respondents with a bachelor’s degree or some graduate work were significantly more likely to report selecting healthy food choices than those with a high school diploma [OR= 2.34; 95% CI= 1.17-4.71]. Executive/administrative/managerial [OR= 0.71; 95% CI= 0.31-1.62] and faculty [OR= 0.80; 95% CI= 0.45-1.44] had greater odds of selecting healthy food choices than staff.

Table 10 displays the relationship between selecting healthy food in cafeterias and socio-demographic characteristics.

Table 10

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>33</td>
<td>1.25</td>
<td>0.71-2.21</td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>42</td>
<td>1.20</td>
<td>0.35-4.06</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>48</td>
<td>1.03</td>
<td>0.31-3.45</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>5</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>21</td>
<td>1.53</td>
<td>0.72-3.27</td>
</tr>
<tr>
<td>35-49</td>
<td>36</td>
<td>0.85</td>
<td>0.47-1.53</td>
</tr>
<tr>
<td>50+</td>
<td>38</td>
<td>referent</td>
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<td><strong>Education level</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>13</td>
<td>0.64</td>
<td>0.30-1.34</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>28</td>
<td>2.34</td>
<td>1.17-4.71*</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>54</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Job classification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>12</td>
<td>0.71</td>
<td>0.31-1.62</td>
</tr>
<tr>
<td>Faculty</td>
<td>35</td>
<td>0.80</td>
<td>0.45-1.44</td>
</tr>
<tr>
<td></td>
<td>47</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.*
Socio-demographic Correlates of Participating in Weight Loss Programs

Thirty-five (15.2%) employees participated in the weight loss program. Odds ratio estimates suggested men had greater odds of participating in weight loss programs than women [OR= 1.10; 95% CI= 0.51-2.37]. African American employees had greater odds of participating in a weight loss program than any other race/ethnicity [OR= 1.28; 95% CI= 0.26-6.35]. Employees aged 18-49 had greater odds of participating in weight loss programs than employees age 50 or older [OR= 0.93; 95% CI= 0.35-2.45; OR= 0.57; 95% CI= 0.25-1.30]. Employees with a high school diploma or some college were less likely to participate in weight loss programs than employees with a bachelor’s, master’s, or doctorate degree [OR= 0.59; 95% CI= 0.19-1.83]. Table 11 displays the relationship between participating in weight loss programs and socio-demographic characteristics.

Table 11

Logistic Regression Analysis for Relationship between Weight Loss Programs & Socio-Demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>1.10</td>
<td>0.51-2.37</td>
</tr>
<tr>
<td>Female</td>
<td>23</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>19</td>
<td>1.28</td>
<td>0.26-6.35</td>
</tr>
<tr>
<td>Caucasian/White</td>
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<td>0.71</td>
<td>0.14-3.60</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>2</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>7</td>
<td>0.93</td>
<td>0.35-2.45</td>
</tr>
<tr>
<td>35-49</td>
<td>11</td>
<td>0.57</td>
<td>0.25-1.30</td>
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<tr>
<td>50+</td>
<td>17</td>
<td>referent</td>
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</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.59</td>
<td>0.19-1.83</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
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<td>1.81</td>
<td>0.79-4.15</td>
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<td>referent</td>
<td></td>
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</tbody>
</table>
Table 11 (continued).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job classification</strong></td>
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<td></td>
</tr>
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<td>Executive/administrative/managerial</td>
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<td>0.84</td>
<td>0.29-2.47</td>
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<tr>
<td>Faculty</td>
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<td>0.66</td>
<td>0.29-1.47</td>
</tr>
<tr>
<td>Staff</td>
<td>19</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note: n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.*

**Socio-demographic Correlates of Participating in Physical and Nutritional Services**

Logistic regression models were used to compare socio-demographic characteristics of employees participating in none (n= 40, 17%) compared to one or more (n=185, 80%) physical/nutritional services. Five respondents did not respond to these questions. Men had greater odds for participating in multiple services than women [OR= 1.73; 95% CI= 0.78-3.88]. Employees aged 18-49 had greater odds of participation in multiple services than employees 50 and older [OR= 1.70; 95% CI= 0.58-4.96; OR= 1.18; 95% CI= 0.56-2.50]. The odds of participating in more than one physical and nutritional service were two times greater for respondents with a bachelor’s or some graduate work than those with a high school diploma [OR=2.39; 95% CI= 0.78-7.30].

Table 12 displays the relationship between participating in multiple services and employees participating in no services.

**Table 12**

*Logistic Regression Analysis for Employees Participation in Any Compared to No Physical/Nutritional Services*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>1.73</td>
<td>0.78-3.88</td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>referent</td>
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</tr>
</tbody>
</table>
Table 12 (continued).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>77</td>
<td>1.60</td>
<td>0.39-6.59</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>94</td>
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<td>0.41-6.66</td>
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<tr>
<td><strong>Age</strong></td>
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<td></td>
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</tr>
<tr>
<td>18-34</td>
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<td>1.70</td>
<td>0.58-4.96</td>
</tr>
<tr>
<td>35-49</td>
<td>76</td>
<td>1.18</td>
<td>0.56-2.50</td>
</tr>
<tr>
<td>50+</td>
<td>72</td>
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</tr>
<tr>
<td><strong>Education level</strong></td>
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<td>Faculty</td>
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<td>0.68</td>
<td>0.32-1.45</td>
</tr>
<tr>
<td>Staff</td>
<td>87</td>
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<td></td>
</tr>
</tbody>
</table>

*Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

Research Objective Three Results

Determine the factors influencing the likelihood of participation in workplace health promotion programs.

Research Objective Three assessed associations between a number of suggested influential factors, including having paid time to attend, having no energy to participate, having activities at a convenient time, having no interest to participate, having activities at a convenient location, family member participation, and having support of a supervisor and participation-in workplace health promotion programs. The most commonly reported factors influencing participation in workplace health promotion programs were health promotion activities being held in a convenient location (65.7%), health promotion activities being held at a convenient time (63%), and having no time to participate in
health promotion activities (57.8%). Respondents having a current injury (16.5%),
respondents having no interest in participating in health promotion activities (23.9%), and
respondents receiving support from supervisors to participate in health promotion
activities (24.3%) were the least influential factors. Logistic regression analyses of the
associations between incentives and challenges for participating in workplace health
promotion and socio-demographic factors indicated only two significant associations. All
other associations were not significant. The estimates and confidence intervals of the
predominately non-significant findings are presented below.

Socio-demographic correlates for paid time to attend influencing participation

Men were more likely to report health promotion activities being held at a
convenient time as an influence for participation than women. [OR= 1.39; 95% CI= 0.75-
2.58]. The odds of selecting having paid time off to attend health promotion activities as
an influence for participation for respondents aged 18-34 were 3 times that of employees
50 and older, a significant finding [OR= 2.95; 95% CI= 1.32-6.59]. Employees with
some college or less education were more likely to report having paid time to attend
health promotion activities as an influence for participation than respondents with a
bachelor’s degree or more [OR= 1.46; 95% CI= 0.70-3.07]. Respondents classified as
executive/administrative/managerial were least likely to report having paid time off to
attend health promotion activities as an influence to participation than faculty and staff
[OR= 0.63; 95% CI= 0.23-1.68]. Results are displayed in Table 13.

Socio-demographic Correlates for Having no Energy Influencing Participation

Men were less likely to report having no energy to participate in health promotion
activities as an influential factor than women [OR= 0.74; 95% CI= 0.41-1.33].
Table 13

Logistic Regression Analysis for Paid Time to Attend Influencing Participation in Workplace Health Promotion Programs

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
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<td>0.53-1.84</td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
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</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
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<td></td>
<td></td>
</tr>
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<td>African American/Black</td>
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<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>18</td>
<td>2.95</td>
<td>1.32-6.59*</td>
</tr>
<tr>
<td>35-49</td>
<td>25</td>
<td>1.28</td>
<td>0.65-2.53</td>
</tr>
<tr>
<td>50+</td>
<td>20</td>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
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<td>High School or less or Some College</td>
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<td>1.46</td>
<td>0.70-3.07</td>
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<td>Bachelor’s Degree or Some Graduate Work</td>
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<td>1.11</td>
<td>0.52-2.36</td>
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<td>Master’s or Doctorate Degree</td>
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<td>referent</td>
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<td><strong>Job classification</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>6</td>
<td>0.63</td>
<td>0.23-1.68</td>
</tr>
<tr>
<td>Faculty</td>
<td>28</td>
<td>1.30</td>
<td>0.69-2.44</td>
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<tr>
<td>Staff</td>
<td>28</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

Respondents with a bachelor’s degree or some graduate work were significantly more likely to report having no energy to participate in health promotion activities as an influential factor than respondents with a high school diploma or some college [OR= 2.01; 95% CI= 1.01-4.00]. Results are displayed in Table 14.

Socio-demographic Correlates for Activities at Convenient Time Influencing Participation

Men were more likely to report having health promotion activities at a convenient time as an influential factor than women [OR= 1.39; 95% CI= 0.75-2.58].
Table 14

*Logistic Regression Analysis for No Energy Influencing Participation in Workplace Health Promotion Programs*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
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<td><strong>Gender</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>26</td>
<td>0.74</td>
<td>0.42-1.33</td>
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<tr>
<td>Women</td>
<td>66</td>
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<tr>
<td><strong>Race/ethnicity</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
<td>43</td>
<td>1.75</td>
<td>0.49-6.23</td>
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<tr>
<td>Caucasian/White</td>
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<td>1.27</td>
<td>0.36-4.48</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>20</td>
<td>2.07</td>
<td>0.96-4.45</td>
</tr>
<tr>
<td>35-49</td>
<td>42</td>
<td>1.65</td>
<td>0.91-3.01</td>
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<td>0.64</td>
<td>0.30-1.33</td>
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<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
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<td>2.01</td>
<td>1.01-4.00*</td>
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<td></td>
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<td>0.73</td>
<td>0.32-1.65</td>
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<tr>
<td>Faculty</td>
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<td>0.74</td>
<td>0.41-1.33</td>
</tr>
<tr>
<td>Staff</td>
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<td></td>
</tr>
</tbody>
</table>

*Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.*

Caucasian/White respondents were more likely to report having health promotion activities at a convenient time as an influence of participation than African American/Black [OR= 2.32; 95% CI= 0.70-7.72]. Respondents with a bachelor’s degree or higher were more likely to report having health promotion activities at a convenient time as an influence of participation than respondents with a high school diploma [OR= 1.16; 95% CI= 0.55-2.43]. Results are displayed in Table 15.
Table 15

*Logistic Regression Analysis for Convenient Time Influencing Participation in Workplace Health Promotion Programs*

<table>
<thead>
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<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
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<td><strong>Gender</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>49</td>
<td>1.39</td>
<td>0.75-2.58</td>
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<tr>
<td>Women</td>
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<td>referent</td>
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<tr>
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<td></td>
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<td>0.51-5.71</td>
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<td>0.70-7.72</td>
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<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.85-4.73</td>
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<tr>
<td>35-49</td>
<td>59</td>
<td>1.07</td>
<td>0.58-1.96</td>
</tr>
<tr>
<td>50+</td>
<td>55</td>
<td>referent</td>
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<tr>
<td><strong>Education level</strong></td>
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<td></td>
<td></td>
</tr>
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<td>High School or less or Some College</td>
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<td>0.28-1.16</td>
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<td>1.16</td>
<td>0.55-2.43</td>
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</tr>
<tr>
<td>Executive/administrative/managerial</td>
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<td>0.73</td>
<td>0.32-1.69</td>
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<tr>
<td>Faculty</td>
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<td>0.88</td>
<td>0.48-1.62</td>
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<tr>
<td>Staff</td>
<td>69</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

*Socio-demographic Correlates for Having no Interest Influencing Participation*

Men reported having no interest in health promotion activities more than women [OR= 1.19; 95% CI= 0.62-2.28]. Respondents 35 and older were more likely to report having no interest in health promotion activities as an influence for participation than age 18-34 [OR=1.25; 95% CI= 0.64-2.45]. Respondents with a bachelor’s degree or less were less likely to report having no interest in health promotion activities as an influence to
participation compared to respondents with a master’s or doctorate [OR = 0.55; 95% CI = 0.23-1.29; OR = 0.79; 95% CI = 0.35-1.77]. Results are displayed in Table 16.

Table 16

*Logistic Regression Analysis for No Interest Influencing Participation in Workplace Health Promotion Programs*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
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<td><strong>Gender</strong></td>
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<td></td>
</tr>
<tr>
<td>Men</td>
<td>19</td>
<td>1.19</td>
<td>0.62-2.28</td>
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<tr>
<td>Women</td>
<td>36</td>
<td>referent</td>
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<tr>
<td><strong>Race/ethnicity</strong></td>
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<td></td>
</tr>
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<td>0.12-1.36</td>
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<td><strong>Age</strong></td>
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<td></td>
<td></td>
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<tr>
<td>18-34</td>
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<td>0.82</td>
<td>0.33-2.06</td>
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<td>35-49</td>
<td>26</td>
<td>1.25</td>
<td>0.64-2.45</td>
</tr>
<tr>
<td>50+</td>
<td>21</td>
<td>referent</td>
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<tr>
<td><strong>Education level</strong></td>
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<td></td>
<td></td>
</tr>
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<td>High School or less or Some College</td>
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<td>0.35-1.77</td>
</tr>
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<td>Bachelor’s Degree or Some Graduate Work</td>
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<td>0.55</td>
<td>0.23-1.29</td>
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<td>Master’s or Doctorate Degree</td>
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<td></td>
</tr>
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<td>Executive/administrative/managerial</td>
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<td>0.28-2.09</td>
</tr>
<tr>
<td>Faculty</td>
<td>24</td>
<td>1.28</td>
<td>0.66-2.48</td>
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<tr>
<td>Staff</td>
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<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

*Socio-demographic Correlates for a Convenient Location Influencing Participation*

Men were more likely to select health promotion activities being held at a convenient location as an influence of participation than women [OR = 1.28; 95% CI = 0.69-2.39]. Caucasian/White respondents were more likely to select health promotion activities being held at a convenient location as an influence to participation than African American/Blacks, Hispanics, Native Americans, Asians, and other race/ethnicities [OR =
1.97; 95% CI= 0.58-6.70]. Ages 18-49 were more likely to select health promotion activities being held at a convenient location as an influence to participation than 50 or older respondents [OR= 1.60; 95% CI= 0.69-3.70; OR= 1.19; 95% CI= 0.65-2.22].

Results are displayed in Table 17.

Table 17

*Logistic Regression Analysis for Convenient Location Influencing Participation in Workplace Health Promotion Programs*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n=</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>51</td>
<td>1.28</td>
<td>0.69-2.39</td>
</tr>
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</tr>
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<td>African American/Black</td>
<td>59</td>
<td>1.23</td>
<td>0.36-4.21</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>83</td>
<td>1.97</td>
<td>0.58-6.70</td>
</tr>
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<td>Hispanic, Native American, Asian, Other</td>
<td>7</td>
<td>referent</td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>29</td>
<td>1.60</td>
<td>0.69-3.70</td>
</tr>
<tr>
<td>35-49</td>
<td>63</td>
<td>1.19</td>
<td>0.65-2.22</td>
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<td>50+</td>
<td>58</td>
<td>referent</td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>27</td>
<td>0.76</td>
<td>0.37-1.56</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
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<td>1.10</td>
<td>0.53-2.33</td>
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<td>Master’s or Doctorate Degree</td>
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<td>referent</td>
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<td>Executive/administrative/managerial</td>
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<td>0.39-2.17</td>
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<td>Faculty</td>
<td>57</td>
<td>1.92</td>
<td>0.49-1.71</td>
</tr>
<tr>
<td>Staff</td>
<td>71</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note. n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.*

*Socio-demographic Correlates for Family Member Participation Influencing Participation*

Men were least likely to report having family member participation in health promotion activities as influencing their decision to participate than women [OR= 0.87;
95% CI= 0.48-1.56]. Odds ratio estimates suggested executive/administrative/managerial
[OR= 0.60; 95% CI= 0.25-1.43], and faculty [OR= 0.95; 95% CI= 0.52-1.71] were least
likely to report having family member participation in health promotion activities
influencing their decision to participate than staff. Results are displayed in Table 18.

Table 18

*Logistic Regression Analysis for Family Member Participation Influencing Participation
  in Workplace Health Promotion Programs*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
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<td><strong>Gender</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>25</td>
<td>0.87</td>
<td>0.48-1.56</td>
</tr>
<tr>
<td>Women</td>
<td>59</td>
<td>referent</td>
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<tr>
<td><strong>Race/ethnicity</strong></td>
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</tr>
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<td>African American/Black</td>
<td>35</td>
<td>1.22</td>
<td>0.34-4.38</td>
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<td>0.36-4.48</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>4</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>18</td>
<td>1.65</td>
<td>0.77-3.57</td>
</tr>
<tr>
<td>35-49</td>
<td>36</td>
<td>1.24</td>
<td>0.68-2.28</td>
</tr>
<tr>
<td>50+</td>
<td>30</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>16</td>
<td>1.06</td>
<td>0.52-2.18</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>20</td>
<td>1.38</td>
<td>0.70-2.75</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>48</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Job classification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>9</td>
<td>0.60</td>
<td>0.25-1.43</td>
</tr>
<tr>
<td>Faculty</td>
<td>33</td>
<td>0.95</td>
<td>0.52-1.71</td>
</tr>
<tr>
<td>Staff</td>
<td>41</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.

*Socio-demographic Correlates for Support of a Supervisor Influencing Participation*

Men were more likely than women to report receiving support from a supervisor
to participate in health promotion activities as an influence for participating in workplace
health promotion programs [OR= 1.62; 95% CI= 0.90-2.95]. African Americans/Black
and Caucasian/White were least likely to report receiving support from a supervisor to participate in health promotion activities as an influence of participation than Hispanics, Native Americans, Asians, and other race/ethnicities, but the findings were not significant [OR= 0.51; 95% CI= 0.15-1.70; OR= 0.40; 95% CI= 0.12-1.33]. Respondents with a bachelor’s degree or some graduate work were more likely to report receiving support from a supervisor to participate in health promotion activities as an influence to participation than with a high school diploma, and master’s or doctorate degrees [OR= 1.85; 95% CI, 0.92-3.75]. Results are displayed in Table 19.

Table 19

Logistic Regression Analysis for Support of a Supervisor Influencing Participation in Workplace Health Promotion Programs

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>28</td>
<td>1.62</td>
<td>0.90-2.95</td>
</tr>
<tr>
<td>Women</td>
<td>43</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
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<td></td>
<td></td>
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<tr>
<td>African American/Black</td>
<td>31</td>
<td>0.51</td>
<td>0.15-1.70</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>32</td>
<td>0.40</td>
<td>0.12-1.33</td>
</tr>
<tr>
<td>Hispanic, Native American, Asian, Other</td>
<td>6</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34</td>
<td>18</td>
<td>2.07</td>
<td>0.95-4.52</td>
</tr>
<tr>
<td>35-49</td>
<td>27</td>
<td>1.02</td>
<td>0.54-1.94</td>
</tr>
<tr>
<td>50+</td>
<td>26</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or less or Some College</td>
<td>15</td>
<td>1.41</td>
<td>0.67-2.94</td>
</tr>
<tr>
<td>Bachelor’s Degree or Some Graduate Work</td>
<td>19</td>
<td>1.85</td>
<td>0.92-3.75</td>
</tr>
<tr>
<td>Master’s or Doctorate Degree</td>
<td>37</td>
<td>referent</td>
<td></td>
</tr>
<tr>
<td><strong>Job classification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive/administrative/managerial</td>
<td>10</td>
<td>0.88</td>
<td>0.37-2.08</td>
</tr>
<tr>
<td>Faculty</td>
<td>25</td>
<td>0.79</td>
<td>0.42-1.46</td>
</tr>
<tr>
<td>Staff</td>
<td>35</td>
<td>referent</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* n = frequency of responses; OR = odds ratio; CI = confidence interval. * = a significant finding.
Summary

Research Objective 1, described the demographic characteristics of employees including age range, highest level of education completed, and job classification. The age range was 35-49 years (40%), and the fewest number of participants were in the 18-34 year age range (17%). Participants with a master’s or doctorate degree yielded the most respondents (57.4%) and staff employees were represented more than other job classifications (44.3).

Research Objective 2 examined relationships between employee participation in physical and nutritional services and socio-demographic characteristics. There were only two significant findings. The first indicated that respondents with a bachelor’s degree or some graduate work were two times more likely to select healthy food choices as an influence to participate in workplace health promotion programs than respondents with a high school diploma or less. The second indicated that respondents with a high school diploma or some college were least likely to participate in exercise classes than those with a master’s or doctorate degree. The logistic regression models suggested no other significant associations.

Research Objective 3 utilized logistic regression to examine whether factors influenced employee participation in workplace health promotion programs. The first significant finding was respondents age 18-34 were more likely to report having paid time off to attend health promotion activities as an influence to participation than respondents 50 or older. The second significant finding indicated that respondents with a bachelor’s degree or some graduate work were more likely to report having no energy to participate as a influence to participation. All other associations were not significant.
Chapter IV presented the results of this study as it relates to the three research objectives. Chapter V will present the discussion of the findings as well as the conclusions drawn from the analyses. In addition, Chapter V will include recommendations and suggestions for future research for further study.
CHAPTER V
DISCUSSION

Time, money, and resources invested on employee health benefits businesses. The “health” of a business relies on the ability to manage business and health care costs. More employers are incorporating measures promoting healthy lifestyles and disease prevention strategies, while simultaneously meeting business goals, such as decreasing absenteeism, employee turnover, and improving employee morale (Chu & Dwyer, 2002). Healthier employees can help minimize health care expenditures, through preventing illnesses and managing existing illnesses. A healthy workforce can improve employee productivity and employee satisfaction (Partnership for Disease Prevention, 2008a).

Research suggests workplace health promotion as a tool for changing unhealthy lifestyle behaviors (Ball, 2009; Bull et al., 2003; Kruger et al., 2007).

Despite increasing evidence suggesting workplace health promotion programs are beneficial for employees and employers; participation in the programs remains low (Clark, 2008; Franklin, et al., 2006; Kwak, et al., 2006; Linnan et al., 2001). The cause of low participation may be due to employee related factors, such as availability of programs, membership fees, or lack of funding for program initiatives. Few studies have examined low participation rates from the employee perspective. Previous studies suggest examining employee perceptions of workplace health promotion programs can help improve participation rates (Ball, 2009; Kruger et al., 2007).

Findings, Conclusions, and Recommendations

This study assessed the physical and nutritional services and incentives and challenges associated with employee participation in workplace health promotions in the
Mississippi Delta. Findings, conclusions, and recommendations based on university employee perceptions of their workplace health promotion programs are presented below.

Research Objectives One & Two

Describe employee socio-demographic characteristics: a) gender, b) race/ethnicity, c) age, d) education level, e) organization, f) job classification, and g) participants and non-participants of workplace health promotion programs. Determine if a relationship exists between socio-demographics and factors influencing participation in workplace health promotion programs.

Finding One

Most of the respondents for this study were female, Caucasian/White, 35 and older, highly educated and staff employees. Trends in the data suggest health screenings were the most popular physical (require acts of the body) services used by employees. Fitness centers were the second most often used physical service followed by exercise classes.

Conclusion. Previous research indicates individuals living in rural areas, such as the Mississippi Delta, are less likely to use preventive screening services (U.S. Department of Health and Human Services, 2000). Nevertheless, respondents of this study selected health screenings as the most popular physical service in the workplace health promotion program. Program leaders have an opportunity to assist employees with their health by offering health screenings that may detect potential health problems. Preventing the spread of chronic diseases in employees such as heart disease, cancer, chronic obstructive pulmonary disease (COPD), stroke, and diabetes can help decrease health expenditures for businesses.
**Recommendation.** Program leaders should develop comprehensive workplace health promotion programs with an emphasis on preventative activities such as health screenings and immunizations to help encourage employees to participate in other activities. Organizations could survey employees at the health screenings to determine their needs and wants as it relates to health promotion. Designing and implementing programs based on employee feedback may create buy-in from employees. Longevity of workplace health promotion programs requires employee ownership of the intervention (Harden et al., 1999). Once the employees participate in the health screenings, program leaders have a captive audience to increase awareness about the variety of health promotion initiatives offered on-site. By educating employees on the benefits of using on-site physical services employers could promote, support, and encourage employees to participate in healthy lifestyle behaviors (Lowe, 2003; Polanyi et al., 2000). Creating an organizational culture of health and wellness through receiving feedback from employees and providing regular activities with ongoing promotion may lead to increased participation in workplace health promotion programs (Drennan et al., 2006; Hillier et al., 2005).

**Finding Two**

Based on this study’s results, selecting healthy food choices was the most popular nutritional service offered as part of the workplace health promotion program. Research suggests individual’s attitudes towards healthy food choices can be changed and sustained if the environment in which choices are made support healthy food selection (Larson & Story, 2009). Therefore, it is important for organizations to make available
healthy food selections in cafeterias, vending machines, and special events that cater food.

**Conclusion.** Understanding the importance of nutrition is a determinant for decreasing chronic illnesses. Nevertheless, the Mississippi Delta remains one of the unhealthiest regions in the United States. Due to the large number of people who are overweight and obese, organizations need to develop strategies to promote healthy eating behaviors. Most employees spend half of the day at work, therefore worksites should provide opportunities for educational, behavioral, environmental, and economic strategies to improve nutrition (Benedict & Arterburn, 2008).

**Recommendation.** Providing a healthy company culture in the form of healthy eating classes, healthy food choices in the cafeteria and vending machines, and establishing policies that reinforce healthy eating habits may decrease obesity, chronic illnesses and consequently reduce medical costs for businesses (Goetzel & Ozminkowski, 2008). Email blasts, interactive websites, and newsletters could also be beneficial for providing healthy tips for meal planning and healthy recipes. Franklin et al., (2006) examined the feasibility of using emails as a strategy to encourage increasing physical activity, increasing fruit and vegetable intake, and offering links to web-based resources. The researchers concluded that the rate of enrollment and sustained participation supported the feasibility of email communication for workplace health promotion. Therefore, email communication can be used as a strategy to increase and recruit participation in workplace health promotion programs.
Research Objective Three

Determine the factors influencing the likelihood of participation in workplace health promotion programs.

Finding Three

Findings suggest convenience was the most influential factor reported for participating in the workplace health promotion programs. The findings are consistent with previous research reporting the times fitness centers were available for employees as barriers for their participation (Gurley, 1999). The factor with the greatest odds for influencing Caucasian/White respondents’ participation in a workplace health promotion program was having health promotion activities held at a convenient time. The factor with the greatest odds for influencing faculty participation in a workplace health promotion program was having activities held at a convenient location.

Conclusion. Ensuring that the time and location of health promotion activities is accessible for all employees is a challenge that may be difficult for employers to eliminate. However, because of the control organizations have over the type of health promotion programs they offer, employers are able to change the environment in which their employees work to accommodate health promotion activities (Chu & Dwyer, 2002).

Recommendation. Employee feedback is important for the success of workplace health promotion programs. Since convenience was reported as an important factor for participation, organizations could seek input from employees about the best times to offer physical and nutritional services during the day or week. In addition, organizations could offer the same classes several times a day or week at different locations to increase convenience for employees.
Limitations

This study was subject to various limitations. 1) There was a relatively low number of respondents for the survey for each socio-demographic characteristic. It is possible that the sample does not adequately represent the entire population. Therefore generalizations should be made with caution. 2) Surveys were the only means of collecting data and answers were limited to “yes” or “no” responses. Respondents were not given the opportunity to elaborate on why they selected an answer. Therefore, the reader is left to assumptions as to why the respondent selected that particular answer. Selecting “yes” or “no” does not reveal the “why” behind the answer. 3) Respondents may have had a different interpretation of what the questions were asking compared to the researcher’s intent for the question. This could cause problems with the validity of the study. 4) The survey instrument used in this study was adapted from a previous study to more accurately reflect the population and needs of this study. Modifications and adaptations of survey instruments may affect the validity and reliability of the instrument. 5) Disseminating and collecting the survey at more than one in-person opportunity at each location may have yielded a higher employee response rate. The survey risks potential bias as in-person opportunity locations were chosen based on their willingness to allow the surveys to be distributed. Not all employees were mandated to attend the in-person opportunities used as a distribution and collection point for this study. Therefore, many potential respondents may have been missed due to lack of awareness about participating in the research.
Recommendations for Future Research

More in-depth qualitative studies are needed to help determine employee perceptions of workplace health promotions. Understanding the needs of employees, especially those with high health risk, such as obesity/overweight, hypertension, high cholesterol, and diabetes may contribute to decreased health care expenditures for businesses. Since the main force behind organizational interest in workplace health promotion is health care costs, a longitudinal study could be beneficial in tracking changes in employee health and organizational medical care costs. Aldana (2001) suggests a relationship between obesity, stress, and multiple risk factors (obesity/overweight, hypertension, high cholesterol, and diabetes) and health care expenditures. Therefore, understanding employees, health risks may have an impact on total labor costs. Since many employers are reluctant to offer comprehensive health promotion programs because they are unsure of the financial return on investment, a more in-depth study could provide the data needed to invest more confidently in the programs (Goetzel & Ozminkowski, 2008). Over the past three decades, growing evidence supporting workplace health promotion programs yielding acceptable financial returns for employers have been mounting. Studies suggest that programs grounded in behavior change theories and utilizing comprehensive marketing strategies and individualized counseling sessions for high-risk individuals are likely to produce a positive return on the money invested in those programs (Aldana, 2001; Chapman, 2005; Goetzel, Juday & Ozminkowski, 1999).
Conclusion

Chronic illnesses, such as diabetes, cancer, and cardiovascular disease are the driving force for health care expenditures in the United States. Unhealthy lifestyle behaviors including physical inactivity and poor nutrition contribute to the development of chronic illnesses (Carlson & Murphy, 2010; Partnership for Prevention, 2009; U.S. Department of Health and Human Services, 2000). Chronic disease rates in the Mississippi Delta are among the highest in the United States. The impact of employee health status on organizational costs and performance leads to the emergence of workplace health promotion programs. Workplace health promotion has the potential to improve health while decreasing health care expenditures for businesses, nevertheless employee participation rates remain low.

This study describes factors influencing employee participation in workplace health promotion programs at two universities in the Mississippi Delta. Understanding factors influencing participation in an area with employees at greatest risk for disease and high health care expenditures can provide an internal assessment to enhance workplace health promotion programs by attracting and maintaining employee participation and reducing medical costs (Ball, 2009; Kruger et al., 2007). Findings from this study suggest when developing or improving workplace health promotion programs in the Mississippi Delta, organizations should focus on providing health screenings, healthy food choices, and ensuring program activities are convenient for the employees.

Creating an organizational culture of health and wellness is an important determinant for increasing employee participation rates (Gurley, 1999). Effective workplace health promotion programs depend on the employers’ and employees’
willingness to participate. Developing comprehensive health promotion programs that are based on the needs of employees and supported by leadership can assist in improving lifestyle behaviors and controlling health care costs for businesses (Ball, 2009; Kruger et al., 2007; Lowe, 2003).

Creating change in individuals’ health requires several factors such as personal commitment, opportunities to transform lifestyles, participant education of health issues and availability of resources aiding in the positive change. Transformative health efforts arise through established support systems and individuals finding commonality in their goals, progress, challenges, and results. Workplace health promotion has the potential to affect many individuals. Through identifying the needs and interests of employers and employees, the establishment of effective workplace health promotion programs can lead to improved health for individuals and overall profitability for businesses through increased productivity and decreased medical expenses.

Organizations striving to create an effective work environment must be concerned about employee health because of the employee’s potential to add to the company through the effort, knowledge, and skills they possess. By helping employees through providing health promotion activities, services and knowledge, organizations have the opportunity to enhance their human capital, a significant factor in achieving a competitive advantage in the global marketplace.
NOTICE OF COMMITTEE ACTION
The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months.

Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 12050802
PROJECT TITLE: Workplace Health Promotion: An Assessment of Factors Influencing Participation
PROJECT TYPE: Dissertation
RESEARCHER/S: Tomeka L. Harbin
COLLEGE/DIVISION: College of Science & Technology
DEPARTMENT: Economics and Workforce Development
FUNDING AGENCY: N/A
IRB COMMITTEE ACTION: Exempt Approval
PERIOD OF PROJECT APPROVAL: 05/09/2012 to 05/08/2013
Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair
APPENDIX B

INSTITUTIONAL REVIEW BOARD LETTER

May 30, 2012

Tomeka Harbin
Broom Hall 272
Campus

Study: Workplace Health Promotion: An Assessment of Factors Influencing Participation
IRB Protocol number: 11-062
Approval date: May 30, 2012
IRB Identification Number: IRB00001545

Dear Tomkea Harbin:

On behalf of the Institutional Review Board (IRB) at Delta State University, I am pleased to inform you that your request for IRB clearance for the project identified above appears to be in order. I see no deception, coercion, or harmful effects to your participants. Participants are voluntary and they do not appear to be vulnerable in any way.

This project is classified as EXPERT from further review for a period of one year from this date. As with other projects, you are required to report major changes and to report any incidents that have affected research subject welfare. It is understood that re-approval must occur within one year of the initial approval date if the project is ongoing.

You are free to begin data collection.

Sincerely,

Albert Nylander, Ph.D.
Institutional Review Board, Chair
Dean, Graduate & Continuing Studies
Delta State University
Cleveland, MS 38733
APPENDIX C

INSTITUTIONAL REVIEW BOARD LETTER

HUMAN SUBJECTS APPLICATION

IRB Log # 11/3/10

Title of Proposal: Workplace Health Promotion Programs: An Assessment of Factors Influencing Participation

Principal Investigator: Tomeka Harbin

MVSU Employee/Status: N/A

Department Address:

MVSU Phone #: Home Phone #: 

Will this study receive any direct or indirect federal support? (Including use of federal facilities):

Yes ______________ No ________ Agency ________

Type of review requested: Exempt ______ Expedited ________ Full ______

Proposed start/completion date: ____________

Composition of study group (age, sex, race, disadvantaged, etc.): All employees at MVSU 18 and above.

Name, MVSU Address, Phone of Co-Investigators and Students:

Principal Investigator Assurance:

On behalf of my co-investigators, associated students, staff, and myself, I agree: To perform the research according to the ethical principles of the Belmont Report, requirements of 45 CFR 46 to strictly adhere to the research protocol as it relates to human subjects, and to promptly report to the IRB any proposed change in the research activity, and to ensure that no changes be made in the activity without obtaining prior IRB approval (except that a change may be made to eliminate apparent immediate hazards to the subject); to comply with any contingencies upon which approval may be granted; to promptly notify any member of the IRB verbally (with written confirmation) of unanticipated problems involving risk to subjects or others and of any other adverse circumstance actions affecting the subject that arise from the research.

Principal Investigator: _______________ Date: _______________

IRB USE: Exempt ______ Expedited ________ Full ______

Contingencies for Approval:

Re-review Frequency: Yearly ________ Date: _______________

Approved/Disapproved: _______________ Date: _______________ Signature (Chair)
MVSU INSTITUTIONAL REVIEW BOARD CONSENT FORM CHECKLIST

Proposer: Tomika Harbin

Signature: ________________ Date: 2/13/12

Proposal Title: Workplace Health Promotion Programs: An Assessment of Factors Influencing Participation

The primary investigator (PI) or Faculty Advisor (FA), if the investigator is a student, must answer following questions YES, NO, or NA and provide satisfactory explanation if answer is "NO"; Otherwise the Consent Form must be revised to eliminate "NO" answers.

Yes 1. Is the consent form written in "lay language" and presented in a way comprehended by the participant? (Explain on the reverse special arrangements for those unable to read the consent form).

Yes 2. Is it free of any exculpatory language through which the participant is made to waive any legal rights, including any release of the investigator, sponsor, institution or its agents from liability for negligence?

Yes 3. Will the participant be provided a copy of the consent document?

NA 4. If the blood is to be withdrawn, is the standard blood withdrawal information included?
   a. Number of times; amount, period of time covered; minimal risk of "bruising, inflammation of vein, and infection?"
   b. Have all personnel handling blood been immunized against Hepatitis B?
   c. Does your laboratory have approved exposure control plans for blood-borne or other pathogens?
   d. Has your laboratory conformed to all applicable OSHA regulations concerning blood-borne or other pathogens?

NA 5. If children (individuals who have not reached the legal age of consent, 18 in Alaska) are participants, is provision made for securing the assent of the child and the consent of the parent or guardian?

NA 6. If investigational drugs or devices are to be used, or of approved drugs or devices are to be used in a manner for which they have not been approved, are such drugs or devices identified as "experimental?"

Yes 7. Does the consent form include each of the following basic elements of informed consent?
a. A statement that the study involves research, an explanation of the purposes of the research and the expected duration of participation?

b. A description of the procedures to which the participant will be subjected, and identification of those that are experimental?

c. A description of any benefits to the participant or to others?

d. A full disclosure of any reasonably foreseeable risks or discomforts, or a statement that minimal risk is considered to be associated with participation in the study?

e. For research involving more than minimal risk, a description of medical care, or other compensation is available, and who to contact to access such resources?

f. A statement describing the extent to which confidentiality of records identifying the subject will be maintained.

g. Information on who to contact for answers to questions about the research, participant’s rights?

h. A statement that participation is voluntary at all times, and the choice not to participate, or to discontinue participation will involve no penalty or loss of benefits to which the individual is entitled.

i. In the case of evaluation of a medical procedure or therapy, a disclosure of alternative procedures that might be advantageous to the participant?

Yes 8. Is provision of any of the following information appropriate, and if so, is it provided in a consent form?

a. A statement that the procedure may involve risks to the subject or fetus (if the subject is or may become pregnant) which are currently unforeseeable?

b. Anticipated circumstances under which the subject’s participation may be terminated by the investigator without regard to the subject’s consent? (A concern if the subject benefits by participation.)

c. Any additional costs to the subject from participation?

d. Any consequences of a participant’s decision to withdraw from the research, and procedures for orderly termination of participation by the subject?

e. A statement that significant new findings developed during the course of the research that might affect the subject’s willingness to continue participation will be provided to the subject?

IRB Consent Form Approved By: [Signature] Date: [Date]

IRB Approval cannot be granted until a copy of the approved consent form is on file.
APPENDIX D

SURVEY INSTRUMENT

Consent Statement:
By agreeing to the following statement, you consent to participate in this Workplace Health Promotion Program Survey. You will be asked a series of questions regarding your perceptions of the health promotion program at your university.

I understand that:
- My participation in this study is voluntary.
- I have the right to withdraw from participation at any time.
- All data collected will remain confidential and will be reported in aggregate form.

Do you agree to participate in this study? Please circle your choice.
Yes or No

1. Do you use the following physical activity services provided through your university’s health promotion program? Please circle your choice.
   a. Fitness center
      Yes No
   b. On-site exercise classes.
      Yes No
c. Personalized diet or exercise counseling.
   Yes No
d. Sports leagues
   Yes No
e. Health screening tests
   Yes No
f. Other__________________

2. Do you use the following nutritional services provided through your university’s health promotion program? Please circle your choice.
   a. Healthy food choices in cafeterias.
      Yes No
   b. Healthy eating or healthy cooking classes.
      Yes No
c. Weight loss program
      Yes No
d. Weight loss support group
      Yes No
e. Other__________________

3. Do the following factors influence your participation in the health promotion program at work? Please circle your choice.
   a. Encouragement from supervisor
      Yes No
   b. Getting paid time off to attend
      Yes No
c. Lack of energy
      Yes No
d. Having programs held at a convenient time
      Yes No
e. No interest
      Yes No
f. Having programs held at a convenient location
   Yes No
g. Being able to invite family members to come
   Yes No
h. Having good co-worker participation
   Yes No
i. No time during work day
   Yes No
j. Already involved in other, similar programs or activities
   Yes No
k. Would not want to participate in programs with other employees
   Yes No
l. Lack of self-discipline
   Yes No
m. Current injury or ill-health
   Yes No
n. Support of Supervisor
   Yes No

(Continue on Reverse Side)
4. Demographics
   Please circle your choice.
   a. What is your gender?
      Male
      Female
   b. Do you consider yourself to be
      Hispanic/Latino?
      Yes
      No

   In addition, circle one or more of the
   following racial categories to describe
   yourself:
   African American/Black
   Caucasian/White
   Native American
   Asian
   Other
   c. What is your age group
      18-25
      26-33
      34-42
      43-51
      52-60
      61-69
      70 or more
   d. What is your highest level of education
      completed?
      High School diploma or less
      Some College
      Bachelor’s Degree
      Some Graduate work
      Master’s Degree
      Specialist
      Doctorate
   e. What is your job classification?
      Executive/Administrative/Managerial
      Faculty
      Staff

Thank you for your Feedback!
If you would like to participate in a $50 Cash Prize Drawing, to be held on September 4, 2012 please include your email address or phone number for contact purposes.
APPENDIX E

CONSENT TO USE WELLNESS SURVEY

Tomeka Harbin

Subject: Survey Instrument

From: Trever Ball [mailto:trever.ball@utah.edu]
Sent: Tuesday, December 04, 2012 2:55 PM
To: Tomeka Harbin
Subject: RE: Survey Instrument

Dear Tomeka:

You have my permission to use the survey I created as part of my Master's thesis in any way needed, including reproducing all or parts of the survey. It is not protected by copyright.

Regards,
Trever Ball
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