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ABSTRACT

Health Promotion and Management Issues Associated with the Underutilization of a Civilian Fitness Program and Fitness Facility by Employees: An exploratory Case Study of the 221st Base Support Battalion in Wiesbaden

by

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Abstract

Despite documented benefits for health and productivity, civilian employees of the U.S. Army's 221st Base Support Battalion in Wiesbaden, Germany, are not participating in the Civilian Fitness Program (CFP) and Fitness Center (FC), which the Army is offering free of charge. This underutilization of the CFP by 99% and the FC by 12% of the civilian workforce not only fails to realize the expected benefits of exercise—greater productivity, fewer health care costs, and better morale—but adds to the Army's and, ultimately, the U.S. tax payers' costs the building, maintaining, and staffing of facilities that remain largely unused. The purpose of the study was to discover the reasons for the underutilization of these wellness programs through a triangulation approach. Data were collected with (a) a self–administered questionnaire, completed by 208 civilian employees; (b) archival data searches pertaining to current utilization of the CFP and FC; and (c) direct observation of both programs and the Wiesbaden Army community's exercise participation in general. Significant positive findings included that 38.1% of the respondents used the fitness facility, 65% reported their stress to be manageable, and exercise days averaged 3 per week. Significant negative findings included that 87.9% of respondents did not use the CFP; 75% were unaware of the programs; 55% worked more than 40 hours per week; most were overweight; number of barriers and utilization of the FC had a linear, synergistic relationship; and the Number 1 reported barrier to exercise was *employer does not allow time off during working hours for exercise.* The researcher recommends changing the current transactional leadership style to a transformational leadership approach to maintaining the health of both employers and employees.

Transformational leaders view all of their organization's resources—real property and human capital—as essential to the organization's success. They seek to modify employees' beliefs and values and, ultimately, their behaviors to inspire actualization, both individually and collectively. Through the implementation of the researcher's recommendations for the Wiesbaden Army community and by seeing positive changes, this organization could serve as a role model for fitness and wellness improvement within the Army. These positive changes could have broad implications in shifting the current fitness/wellness paradigm that the Army advocates. Expanding the scope of the Army's programming to include its' civilian workforce-extending beyond the soldier-and serve as a role model for work organizations in the private sector.

DEDICATION

This dissertation is dedicated to all those who make managing health an integral part of their balancing act in life.

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My gratitude goes first and foremost to God for sending such fantastic people to accompany and assist me during this challenging, yet rewarding experience. They include, but are not limited to, my husband, Major George ReGester, my sons, Nino Jessup-ReGester and Stedman ReGester. Thank you for sharing your lives, time, and energy with me throughout this personal endeavor. Dr. Marcia Steinhauer, my first-year advisor, thank you for believing in me and embarking on this journey with me. Dr. James Brown, thank you for mentoring me even during your illness; Dr. Aqueil Ahmad, for your mentorship during the early stages of KAMS; Dr. John Vinton, for your leadership throughout the program; and Rochelle Stuve, for your administrative and advisory services. Dr. Charles Nichols, my committee chair and advocate throughout my studies, without your encouragement and academic support I could not have made it through. Dr. Monica Gordon and Dr. Vicky Black, thank you for serving on my committee and being my advocates throughout the dissertation process. Thanks go to Lieutenant Colonel Franks and Lieutenant Colonel Slagter for supporting this study and for their commitment to wellness for all members of their military communities. To my editor, Dr. Elisabeth Johnson-Kallos, thank you for your excellent editorial services. Dr. Roulette Smith and Herr Christian Schendera, thank you for invaluable statistical expertise.

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CHAPTER 1

INTRODUCTION TO THE STUDY

Introduction

An alarm has been sounded by the Center for Disease Control (CDC)—Americans are obese, and American workers are sick and dying from obesity and obesity-related diseases (CDC, 2001b; CDC, 2002). Among the top 10 leading causes of death, heart disease ranked as Number 1 and diabetes ranked as Number 6; both are interrelated with obesity and excess weight (CDC, 2004, January 21, p. 1). The NCHS (2002) estimated that, 64% of U.S. adults are either overweight or obese. These adults work for America's business organizations, including the Army, which may be experiencing rising health care costs, absenteeism, and a decrease in productivity as a result of their employees' poor health (Dunnagan, Haynes, & Smith, 2001; Mitvalsky, personal communication, June 4, 2004; Mooney, personal communication, June 1, 2004).

One of the nation's largest employers is the United States Army, and it, too, is increasingly concerned about the health status of its employees. The Army pays health care costs for over 490,000 soldiers and over 200,000 civilian employees. This study focused on the 10,038 civilian employees who work in the United States Army 221st Base Support Battalion in Wiesbaden, Germany (USA221st BSBWG; Personal

communication by: Evans, June 1, 2004; Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17, 2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Penedia, December 5, 2002; Woods, February 26, 2004).

In its quarterly newsletter, the Army acknowledged that it considers the physical and emotional wellness of its community important. The Office of the Chief of Public Affairs (2003) wrote:

> The wellness of our total Army is inextricably linked to the well-being of our people. . . . Well-being responds to the physical, material, mental and spiritual needs of all Army people—soldiers, civilians, retirees, veterans and their families. . . . Well-being programs help make the Army a good place to raise a family. (p. 6)

This statement could also be applied to the dependents of both military and civilian employees of the Army because dependents account for most of the population in any given Army community. They are its employee base, especially in Germany. Actual numbers were not made available to this researcher because civilian employees who work for the Army in the USA221st BSBWG have a different health care insurance than soldiers, and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) ensures the privacy of the civilian employees' health status. Thus, information could not be shared with this researcher or the public (Center for Medicare and Medicaid Services, 2003, November 24). However, a study of The Research Triangle Institute International (2004,

January 21, para. 1) and the CDC estimated that medical expenditures attributable to U.S. obesity reached $75 billion in 2003 and that tax payers financed about half of these costs through Medicare and Medicaid. Secretary of Health and Human Services Thommy G. Thompson stated, "Obesity and overweight has become a crucial health problem for our nation, and these findings show that the medical costs alone reflect the significance of the challenge" (CDC, 2004, January 21). The Director of the Wellness Center for the United States Army in Heidelberg, Germany, William Burgess, echoed the same concern:

> Civilian employees who work for the Army are facing the same wellness issues as their civilian counterparts in America; likewise, their health statuses are comparable to one another. The civilians who work for the Army are a microcosm of American culture exported from America. Why should their health issues be any different? (Personal communication, September 25, 2003)

Thus, the civilians who are employed by the Army are just as vulnerable to obesity and obesity-related diseases (OORD) as their American counterparts back home. The Army does not keep health statistics for civilian employees; however, their health statuses are included in the CDC reports, just as those of every other American (Mitvalsky, personal communication, June 4, 2004; Mooney, personal communication, June 1, 2004).

Employers are taking action to implement wellness programs in the workplace to combat OORD. However, one must wonder: Are they

implementing these programs correctly? Has management been effective in its approaches? Are managers truly effective at meeting the wellness challenge? Although these are not research questions pursued in this study, they remain a concern in so far as Americans remain obstinately obese or overweight.

This case study sought to add to an existing body of literature that has demonstrated the benefits of and needs for fitness/wellness programs. For example, on a national scale, the top 10 actual causes of death in America are connected to poor diet and physical inactivity; the CDCP (2004) noted that *actual causes of death* are defined by lifestyle and behaviors, such as smoking and physical inactivity. These contribute to America's leading killers, including heart disease, cancer, and stroke.

Fitness facilities constantly boast that memberships are increasing and people must be getting healthier because gym owners are doing their job in motivating them. However, as the International Health, Racquet, and Spotsclub Association (IHRSA, 2003, November 11) noted, "People say that they are putting a priority on health behaviors, such as having a good diet, exercising, a good night's sleep, stress reduction, and rest and relaxation" (para. 2); in reality, however, people are not modifying their behavior to become healthier. This was found in the Roper study (IHRSA, November 11), which compared the avowed health priorities of Americans

with actions taken by these same Americans to modify their unhealthful behaviors.

The purpose of this case study was to explore the underutilization of a Civilian Fitness Program (CFP) and Fitness Center (FC), which the United States Army offers free of charge to its civilian workers at the USA221st BSBWG. This study differs in its approach from the track traditionally taken in the literature: This study sought to explore the barriers to participation in the CFP and FC, as well as identify any associations between employment groups and exercise participation. The study is, thus, a reflection of the issues surrounding the underutilization of both the CFP and the fitness facility at the USA221st BSBWG. Civilian employees utilize the CFP at a rate of .128%, and the FC at a rate of 12% annually (Army Regulation 600-63; Martin, personal communication, February 25, 2004; Penedia, personal communication, December 5, 2002).

Whereas previous research reported results for those who participate in employer-offered fitness/wellness programs, more or less as an advertisement for employer-sponsored programs, this study intended to gain insights about the population that is *not* exercising or only minimally participating. This line of investigation was thought to be

more productive for finding ways to help organizations motivate inactive workers to become more active—and healthier.

The Current Health Crisis in American Society

Numerous studies indicated that obesity is on the rise among America's adult population (Flegal, Carroll, Ogden, & Johnson, 2002; National Center for Health Statistics [NCHS], 2003). "The problem keeps getting worse," according to Secretary of Health and Human Services Thommy G. Thompson.

> We've seen virtually a doubling in the number of obese persons over the past two decades and this has profound health implications. Obesity increases a person's risk for a number of serious conditions, including diabetes, heart disease, stroke, high blood pressure, and some types of cancer. (U.S. Dep. of Health and Human Services, 2002c, para. 2)

In the view of U.S. Assistant Surgeon General Susan J. Blumenthal, "obesity may soon surpass smoking as the leading cause of preventable death in the United States" (Blumenthal, Hendi, & Marsillo, 2002). The CDC (2004) recently reported that physical inactivity and poor nutrition were catching up to tobacco as an actual cause of death of Americans (para. 3).

Implications of Poor Health in the Workplace

The health implications of obesity and ORD have severely impacted the American work environment and can be seen in their negative effect on productivity due to absenteeism, employee turnover, and what has been termed *presenteeism*. Hummer, Sherman, and Quinn (2002) defined presenteeism as a situation in which employees come to work but are less productive than usual because of injury, illness, stress, or other distractions. Presenteeism not only negatively affects the quantity of work completed, but also reduces the quality of products, services, decisions, and coworker and customer interactions.

Hummer et al. (2002, p. 42) reported that, in 2000, the MedStat Group conducted a survey of personnel with certain medical conditions, asking what their average time loss in an 8-hour day was when they were afflicted with their medical condition. For the diseases directly related to obesity, employees reported the following hours of reduced productivity: heart disease 4.3 hours, diabetes 4.0 hours, high blood pressure 3.4 hours, high stress 2.3 hours, anxiety 2.2 hours, and depression 2.2 hours. The authors further noted that a study (conducted at Yale University and published in the American Journal of Psychiatry in 2001) concluded that previous reports on presenteeism and its effects on productivity, absenteeism, and the true cost to business might have been

vastly underestimated. The Employers Health Coalition of Tampa, Florida, sponsored one of the most definitive recent studies. Based on a 1999 analysis of 17 diseases, researchers found that lost productivity due to presenteeism was on average 7.5 times greater than productivity lost to absenteeism. In January 2001, the *Journal of Occupational and Environmental Medicine* reported that effective implementation of health and productivity management (HPM) programs could save employers more than $2,500 per employee ("Health, productivity," 2001).

Research further indicated that between 70% and 80% of all diseases and illnesses are related to stress (Seaward, 1999, p. 3). Although physical activity has primarily been used as a tool to combat the American workplace- and societal-obesity problems, it has also been shown to alleviate stress and, thus, reduce health care costs as well as employee absenteeism (Seaward, 1999; Yorke & Galdwin, 1999). "Exercise (fitness) and lifestyle modification (nutrition and stress management) have gained in acceptance as valuable tools in improving health. Exercise is no longer considered the exclusive domain of the young and perfectly fit" (Codute et al., 1996, p. 5). Despite evidence of its health benefits, as many as 74% of U.S. adults reported that they did not engage in the regular physical exercise activities recommended by the U.S. Department of Health and Human Services (2002).

As businesses continue their fast-paced, stressful, dynamic, and competitive practices, obesity will continue to climb because of increasing demands placed on individual workers, leaving them little time or desire to attend to their health (Ho, 1997; IRSHA, 2003, November 11, 25; Sealey, 2004, May 3; Sussman, 2004, April 30). Ho (1997) stated that workers who feel stressed will not be able to perform to their fullest potential, and "their health may also be adversely affected, thus lowering productivity levels" (p. 2). Seaward (1999) stated, "Consequences of a stressful work environment include poor mental and physical health leading to a decrease in productivity, rise in health care costs, and frequency of employee absenteeism" (p. 3). The result is a rapidly narrowing profit margin for businesses and an increasingly obese and unhealthy society, especially in America.

Wellness as a Management Solution

In general, America's working class is not well. Wellness promotion is necessary in today's high-stress work environment because studies are suggesting that between 70% and 80% of all diseases have some correlation with stress. This was reported by the Aerobics and Fitness Association of America (AFAA, 2000b), which corroborated Seaward's (1999) assessment. The 2000 Annual Gallup poll surveying the "Attitudes

in the American Workplace VI found that 80% of workers feel stress on the job, nearly half say they need help in learning how to manage stress, and 42% say their coworkers need help" (Marylinn, 2000, para. 2). In the VII Annual Gallup poll surveying the "Attitudes in the American workplace," the Marylinn Company (2001) reported that "35% of American workers say that their jobs are harming their physical and emotional health" (p. 1). The NIOSH (n.d.) pointed out that "the nature of work is changing at whirlwind speed . . . perhaps now more than ever before, job stress poses a threat to the health of workers and, in turn, to the health of organizations" (para. 4).

The good news is that stress and one's weight are manageable, and quality physical activity and fitness programming could be just the stress release that workers need (CDC, 2004, January 16). Such management of stress would appear to be the key to an organization's success as employee health is transformed from a costly burden to a competitive advantage (Hummer et al., 2002, p. 43). One of the steps taken by American organizations to address this management issue of reduced productivity, high stress, and high weight is the application of wellness initiatives (Blosser, 2004, March 4; CDC, 2002; Dizikes, 2003; Ho, 1997; NIOSH, n.d.; NCHS, 2004).

Wellness is a multidimensional health concept, incorporating the physical, mental, emotional, and spiritual aspects of a human being (Yorke & Galdwin, 1999, p. 1), and "individuals of all ages and levels of conditioning are now interested in improving their health through fitness and lifestyle modification" (Codute et al., 1996, p. 5). However, positive, long-term behavior modification has not changed for the better in terms of the overall health status of Americans (IRSHA, 2002, November). Since 1998, the number of Americans belonging to health clubs has grown by 23%, or 7 million members, according to the 2002 IRSHA (2003, October, para. 2) trend report. Yet, despite these increases in membership, the obesity and overweight statistics are still climbing. As previously mentioned, the NCHS (2002) estimated that in 2002 approximately 61% of Americans were overweight or obese. The IRSHA (2003, January 10, par. 2) reported that 60% of U.S. adults are overweight, and the government blames 300,000 deaths per year on weight-related diseases. Further, the CDC (2004, January 10) reported that "despite proven benefits of physical activity, more than 50% of American adults do not get enough physical activity to provide health benefits . . . and 25% of adults are not active at all in their leisure time" (para. 3).

The above comparison of increased membership numbers and actual health status demonstrates that just signing people up for

exercise, saying one wants to improve their health, or even having them come to the gym is not enough and does not permit the health promotion community to rest on its laurels and assume that it has done a satisfactory job. In his interview with Ellen Barret (2004), Richard Simmons summed up the problem:

> Heart disease (for example), is (generally) preventable with regular physical activity, yet it is the number one killer of Americans. . . . With more gyms, fitness professionals and money spent on diet products than ever before, it doesn't seem to make any sense. . . . Shouldn't the battle be won by now? Why is there an inverse relationship? . . . For one, people don't make exercise a priority—everybody seems too busy. . . . Secondly, gyms are too intimidating for overweight persons. (Simmons quoted in Barret, p. 18)

The present study was both necessary and timely because still, Americans are not exercising. This not only adversely impacts their health, but also affects the bottom line of profits within organizations and, indeed, the wallet of every tax payer.

Background of the Organization

The Department of the Army is one of America's largest organizations, employing over 490,000 soldiers and over 200,000 civilians. It is responsible for the care of over 5,000,000 family members, who are the dependents of soldiers and civilian employees (United States Department of the Army, 2003). More than 10,038 of these civilian employees live and work at the USA221st BSBWG; they provided the

sample for this study (Personal communication by: Evans, June 1, 2004; Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17, 2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Penedia, December 5, 2002; Woods, February 26, 2004).

This study was concerned with the physical wellness of approximately 10,038 civilian employees of Wiesbaden, who are working to support American soldiers. As the Army reduces its soldier workforce, it is placing greater reliance on civilian employees to perform duties that are in direct support of its mandated mission. As seen in both the Gulf War and Operation Iraqi Freedom, a greater number of civilians were placed in or near the battlefield to support the Army and other branches of service. Therefore, like the soldiers, civilian employees have met and will continue to meet work demands that challenge them both physically and emotionally. However, unlike their military colleagues, civilians are not required to maintain their health in order to maintain their employment with the Army.

Background of the Army's Current Approaches to Managing the Health of Civilian Employees

Mirroring other organizations, the civilian employees of the U.S. Army contribute to America's obesity problem and overweight rates,

which are reaching epidemic proportions (CDC, 2002). The NCCDPHP (2002) reported that, between 1995 and 2000, the obesity and overweight rates for America's workers between the ages of 18 and 59 years were steadily rising. This obesity/overweight problem could be avoided in most instances with the implementation of quality programs and by providing access to these programs so that people will become active. According to the NCHS, 7 of 10 adults did not exercise regularly, in 2002, and 4 in 10 were not physically active at all (IRSHA, 2002).

The Army recognizes that the health and wellness of its community, including civilian employees, is an "invaluable part of its organization because they contribute significantly to its institutional strength" (Office of the Chief, 2003a, p. 1). Because the Army also recognized that it was placing increased emotional and physical demands on its civilian workforce, it has instituted two major approaches to preventively empower civilian employees to maintain or improve their health. These two approaches offer paid time off from work to exercise; they are the CFP and free access to the fitness facility. The Army also provides preventive health awareness classes that cover medical conditions, such as diabetes, high blood pressure, and prenatal care. However, these programs are beyond the scope of this study.

Civilian Fitness Program. The Center for Health Promotion and Preventive Medicine (CHPPM), is responsible for all aspects of wellness in the Army; thus, the CHPPM oversees the CFP. Gilmore (1996) stated, "Soldiers, their families, and retirees should know that there is a 900-plus member organization that's dedicated to look out for their physical and mental health and well-being" (p. 1). Created in November 1995, the CHPPM acts generally as the Army's center for disease control and prevention. It has a broad spectrum of responsibilities, which includes disease control, preventive medicine, and health promotion. Strictly speaking, the agency does not prescribe exercise programs; it did, however, establish the need for wellness programming.

The CFP is one of the Army's health promotion initiatives, intended to "encourage engagement in regular exercise programs and other positive health habits" (U.S. Department of the Army, 1996, p. 1). Under the CFP, managers of civilian personnel are permitted (but not required) to allow up to 3 hours per week for employees to participate in formal exercise training. As part of the program, the Army is responsible for the participants' health assessment evaluation, both prior to and following participation in the program, along with regular monitoring during the program. Yet, according to the data analysis of the health promotions director at the USA221st BSBWG, Lori Penedia (personal

communication, December 5, 2002), a mere .128% of those who are eligible, utilize the program on an annual basis. Therefore, the CFP is not meeting its goals (Army Regulation 600-63; Martin, personal communication, February 25, 2004).

Fitness facility. In its fitness facility, the Army provides participants with cardiovascular, strength, and flexibility equipment, all designed to improve people's health. Additionally, fee-based services, such as massage therapy, personal training, and group exercise classes, are provided. Access to these facilities is free of charge for anyone in the Army community, including civilian employees. However, in spite of the Army's offering the CFP and access to a fitness facility, the civilian employee population is underutilizing the facility with a mere 12% participation (Personal communication by: Evans, June 1, 2004; Givens, 2004, February 4; Penedia, December 5, 2002).

Because a lack of physical activity leads to health disorders, such as diabetes, heart disease, and other ORD, and because many waking hours of the day are spent working, it is reasonable for America's workers to call upon their employers to implement wellness initiatives as a benefit of employment. Wellness initiatives, such as FCs and health programs, might empower workers to address their wellness needs. By

the same token, when employers such as the Army implement such programs, it is reasonable for them to expect the programs to be used.

This study sought to provide managers of organizations with greater insight and understanding of what makes employees want to use or not use health-promoting programs and make recommendations to alleviate a vast and very costly problem. The study was, therefore, both necessary and timely. Although civilian employees work for the Army, they are not required to meet the same rigorous physical health and fitness standards mandated by the Army for its soldiers. Consequently, some civilians are not, as the Army slogan says, *fit to fight,* or in this case, fit to fulfill their responsibilities should it become necessary for them to work side-by-side with soldiers in a combat zone. This creates a dangerous disequilibrium in the Army's interrelated and interdependent organizational systems because the soldiers depend on the direct support of their civilian colleagues.

This study was an important project because a lack of civilian-employee participation in health improvement programs offered by the Army is a problem that this researcher, a certified personal trainer in military communities for over 10 years, has observed in at least 11 other international military installations. These observations are confirmed by professionals who have been working for the Army for many years and in

many locations across the globe (Personal communication by: Burgess, September 2003; Chenault, January 25, 2003; Morrison & Ringgold, April 14, 2003; Appendix E).

Private organizations across the globe are assumed to experience the same phenomenon. Thus, the purpose of health promotion programs is defeated and a lose-lose situation occurs within organizations: Employers lose profits because they have invested in an underutilized program and, in addition, they have to absorb loss of productivity and health care costs for their unhealthy employees. Employees also lose because they remain unhealthy or place themselves at risk for many preventable diseases.

The study is premised on physical wellness through employer-sponsored programs, and participation in the CFP or the FC is the primary indicator for the program's effectiveness. This is a study of management issues because there continues to be little or no participation in these fitness programs by civilian employees who work at the USA221st BSBWG despite the Army's efforts. Moreover, these opportunities are being funded without any discernible accountability for success (i.e., actual positive effects on civilian-employee health), which also reflects a management problem.

Background of the Problem

In America, obesity has reached an epidemic level, especially among its working population, aged 18 to 55 years (CDC, 2002). This epidemic has become a management issue because it has created a dilemma for American industry that is straining its capital resources and reducing the effectiveness of its human resource (Collins & Stahl, 1991). For example, the increase in obesity has proportionately increased the demand for health care services provided to employees. Parry and Lacy (2000) reported that "workers compensation (WC) losses are climbing, and group health costs are resuming the upward spiral" (p. 52). Additionally, as reported by Parry and Lacy, the National Coalition on Health Care predicted in 2000 that health care premiums would increase from 15% to 20%, and workers' compensation costs would increase from 9% to 15%. Many employers are providing health care insurance for their workers; in fact, "75% of workers and their families are covered by health insurance through their employers" (Rockefeller, 1991). The health industry reported that 65% of all health insurance is offered by employer-related programs (Health Insurance Association, 1990). As mentioned earlier, the Army could not release any information on the true cost of what it is paying for civilian health care because of the HIPPA Act of 1996; however, the costs are comparable with what civilian

employers are paying because civilians who work for the Army get their medical insurance through the same private carriers as their civilian counterparts in corporate America (Center for Medicare and Medicaid Services, 2003, November 24; Maxwell, Briscoe & Temin, 2000; Mitvalsky, personal communication, June 4, 2004; Patrick et al., 1999).

Just as any other organization, the Army wants to keep health care costs manageable. Dunnagan et al. (2001) stated that "the increases in health care costs have grown faster than the overall economy in 20 of the past 30 years. . . . Provision of health care benefits has put a severe strain on corporate profits" (p. 1). What is particularly frustrating to employers is that they are often paying for their employees' self-inflicted health problems. The American government is so concerned about the health crisis that it is allowing overweight Americans a medical tax deduction for weight loss costs by recognizing obesity as a disease (IRS, 2002). This again puts the onus for being overweight on someone other than the employees who must improve their health, in this case, the American tax payer who pays between $150 and $200 a year to finance obesity-related medical expenditures for Medicare and Medicaid recipients (Finkelstein, 2003, May 19, p. 1). Finkelstein (2003) stated:

> Governments will not be the only ones looking for strategies to reduce medical payments resulting from excess weight. Employers and insurers have a clear motivation to reduce these costs and will continue to look for strategies to make that happen. (p. 2)

Professionals are hard-pressed to find solutions and develop just the right programming to transform the health status of Americans of all ages into a state that could lower a person's risk for disease and improve his or her quality of life (CDC, 2004, January; Meletis, 2000; Meyers 1999; Sherman, 2001; Schutler, 1998). They have advocated implementing preventive health care services, such as personal training, health education, and nutrition programs within employer-sponsored health programs (AFAA, 2000; Barrett, 2004; IRSHA, 2002, November; IRSHA, 2003, January, October). Some organizations have recognized the need to honor this request by the health community—aside from the fact that substantial work hours are being lost because of OORD—and are offering organizational FCs, discounted or complete memberships at local gyms, and time off from work for exercise. Dunnagan et al. (2001) wrote:

> There are numerous cited reasons for implementing such programs, however, the most frequently cited reasons for implementing such programs are: (a) to improve physical and mental health of employees, (b) to reduce medical care costs, (c) to enhance quality of life, (d) to enhance company image. (p. 2)

Despite these efforts by management and the health community, the majority of employees are still not utilizing the fitness facility or the CFP at the USA221st BSBWG, and by all appearances, employees are not using such programs in the United States in general. As mentioned earlier, only .128% (i.e., 3-10 civilian employees) utilize the CFP at the

USA221st BSBWG. The gym managers in the community, Ron Givens and Nathan Evans, estimated that about 1,300 different civilians use the FC annually. This includes civilian employees who may also be enrolled in the CFP. It should be kept in mind that this is out of a population of 10,038. One cannot help but wonder why approximately 12% of the civilian employee population uses the fitness facility and only .128% sign up for the CFP, which offers such obvious benefits for their physical health status (Personal communication by: Evans, June 1, 2004; Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17, 2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Penedia, December 5, 2002; Woods, February 26, 2004)

This phenomenon leaves health, business, political, and other concerned professionals at a loss about what to do to motivate workers to become more active. Business organizations deplore the waste of funds poured into building, staffing, and equipping facilities that stand unused, while health care costs remain high. They also ask themselves why are some employees self-motivated to exercise, and how can others be reached through extrinsic motivators, such as the CFP, free access to facilities, and possibly other incentives. The gross underutilization of the CFP and fitness facility by civilian employees was noted through direct observation by the CFP manager at the USA221st BSBWG, Lori Penedia;

the director of sports and fitness in Wiesbaden, Kevin Ringgold; the group exercise coordinators for the 221st BSBCWG, Tracey Chenault and Suzzanne Dale; and this researcher, who is a certified personal trainer at the 221st BSBCWG. This underutilization is all the more puzzling because the Army has made a strong effort to provide programming and access for its employees to improve their physical well-being (Personal communication by: Chenault, December 2002; Dale, May 2, 2004; Ringgold, April 2003). The objective of this exploratory case study was, therefore, to gain a better understanding why this phenomenon exists and to identify what personal or managerial barriers might prevent employees from utilizing the programs offered.

One might think that, based upon its façade of fitness, it would be impossible for the Army's employees to be unhealthy or unfit. However, the Army's civilian workforce is not subject to the same stringent health requirements that apply to soldiers; thus, the civilian workforce of the Army contributes its share to America's overall obesity rate of 61% for adults (National Health and Nutrition Examination Survey [NHANES], 1999-2000; Mitvalsky, personal communication, June 4, 2004; Mooney, personal communication, June 4, 2004). Here, too, obesity and ORD have become a management issue because not only does the Army pay for the health care costs of these unfit civilians, but it also incurs the

negative effects of their reduced productivity. This study reflects the issues surrounding the CFP and fitness facility, which the U.S. Army has implemented to combat OORD in its civilian workforce. The problem can be summed up with the question: Why is it that only 12% of the civilian workforce utilizes the fitness facility and a mere .128% of those who are entitled avail themselves of the equally free CFP?

Managers and civilian employees appeared to hold conflicting opinions as to who was responsible for this almost complete nonparticipation in the CFP and the fitness facility. Management believed that it had done its fair share by providing an effective program to address the health conditions of the civilian workforce and giving workers both free access to the facilities and an opportunity to participate (Personal communication by Givens, 2004; Morrison, May 31, 2004; Ringgold, April 14, 2003). However, workers seemed to be experiencing some unknown barriers to exercise, which could be organization- or management-related or self-imposed. Whatever was causing this near-total nonparticipation, its impact was pervasive. If such barriers to exercise exist, they clearly needed to be exposed and greater insight gained into the employees' perspectives. What are their reasons for not taking advantage of the opportunities offered?

Statement of the Problem

Preliminary observations indicated that despite having free access to both a fitness facility and a CFP, approximately 99% of the civilian workforce of the 221st BSBCWG, in Germany, did not use the CFP, and 88% did not use the fitness facility on an annual basis (Givens, personal communication, February 2004; Penedia, personal communication, December 2002). It was not known whether particular employment groups—appropriated-funded (AF), nonappropriated-funded (NAF), or government-contracted (GC)—accounted for the nonparticipation; nor was it known what specific barriers might exist that prevented the civilian workforce from availing itself of the U.S. Army's fitness/wellness offerings.

Purpose of the Study

In spite of employer-sponsored programs and access to these programs, fitness/wellness professional observations indicated that many civilians who work for the Army are not utilizing the programs. The purpose of this study was twofold: First, it sought to identify associations between exercise participation and employment groups and to determine whether barriers to exercise existed that might be imposed by the individual, by management, or by both. Second, it was conceived as a

potential pilot study should the Army wish to follow up with a larger research project.

The nonparticipation in wellness programs by civilian employees had become a management problem of large proportions, which needed to be addressed because civilian-employee health and fitness impacts the Army's mission capability and places a severe a financial strain on the Army's budget—in the same manner that it strains the budgets of other American business organizations (Dunnagan et al., 2001).

Theoretical Framework of the Study

To illustrate the complexity and dynamics of attempting social change of a single issue, such as workplace wellness, Figure 1 places this issue into a larger societal context. Business organizations are small societies embedded in society at large, and as such, they mirror society's complexity and dynamics. Thus, instituting a change that affects social inertia within an organization can become a complex task. Figure 1 (developed by this researcher) depicts the dynamics of instituting wellness changes within an organization. The organization (central oval) is an open system whose daily operations are affected by employees (small circles) and a myriad of social, technical, economic, and political pressures (large arrows) issuing from the society of which employees are

a part. The organization's sphere of influence (outer oval band around the central shape) never fully encompasses its employees, who are also affected by diverse issues from society (e.g., family and religion, depicted as small solid arrows of varying degrees). The small dashed arrows represent areas that the organization is able to affect directly within the lives of its employees. However, being open systems, corporations never fully control all aspects of their employees' lives.

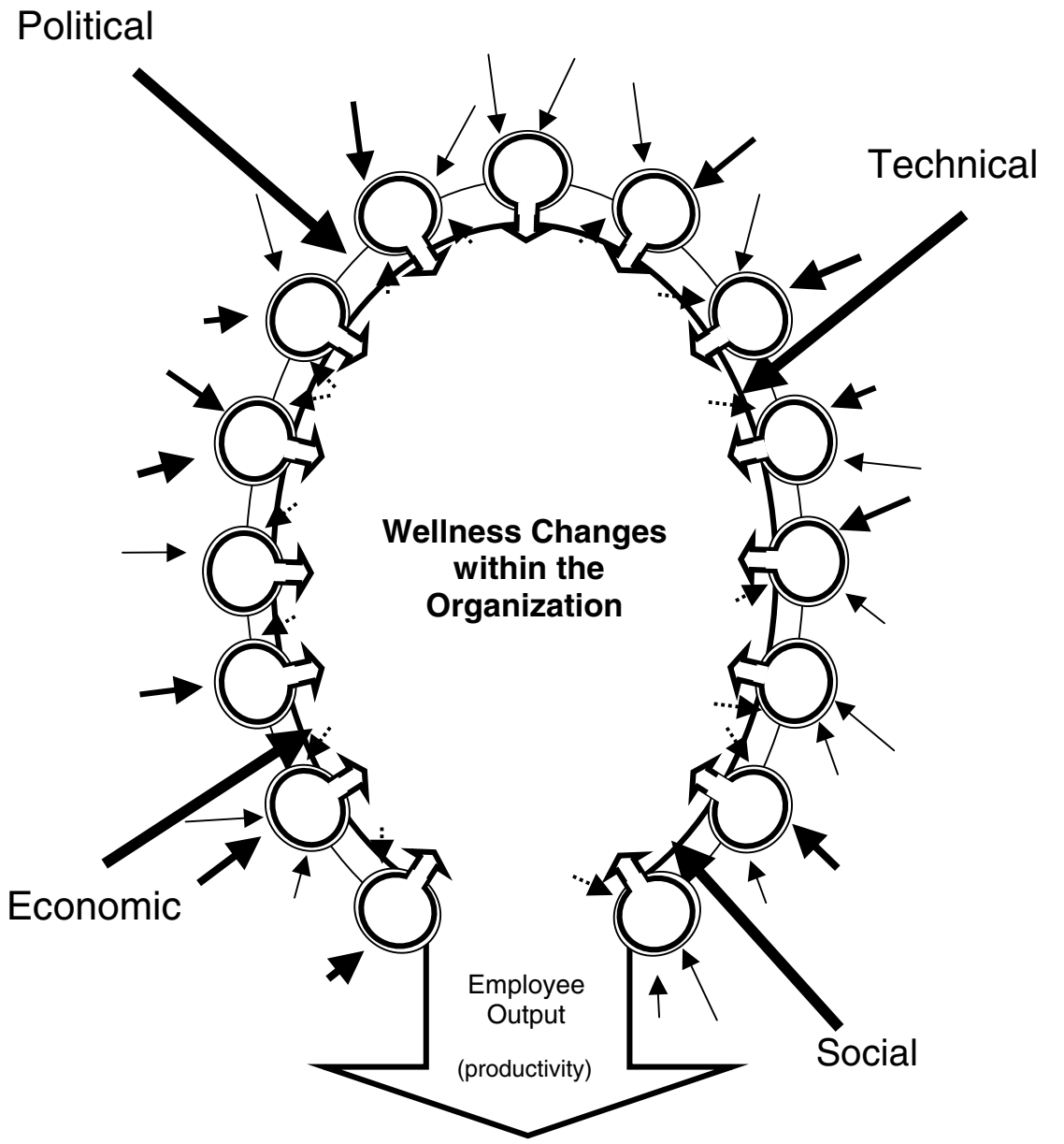

Figure 1. The dynamics of instituting wellness changes in an organization.

Theoretically, any policy or program instituted to change one aspect of the individuals' wellness will meet with varying degrees of success because of competing factors that affect the individuals' lives (Bertalanffy, 1975). The IHRSA (2003) stated that the percentage of Americans who say they place great importance on six areas of personal health, including exercise, is up by an average 3 points since 2000, and an average 9 points since 1998. Americans appear to understand much better what a healthy lifestyle entails, when compared to 1998 and 2000; however, corresponding behaviors still lag and positive attitudinal changes are still missing in the majority of people surveyed (p. 3). Thus, while people's knowledge about the benefits of exercise has improved, their motivation to change their behavior and start to exercise has not. The IHRSA contended that "health clubs need to entice members and prospective members to actually make good on the health/lifestyle goals and priorities they have set for themselves" (p. 2).

The concept of improving employee wellness relies on several theoretical perspectives for its support, such as Descartes's mind/body duality, Einstein's unity theory, Dunn's wellness theory (as cited in Cooper, 1999), Bandura's (1977) social learning theory, and Bass's (1985) leadership theory (Figure 2).

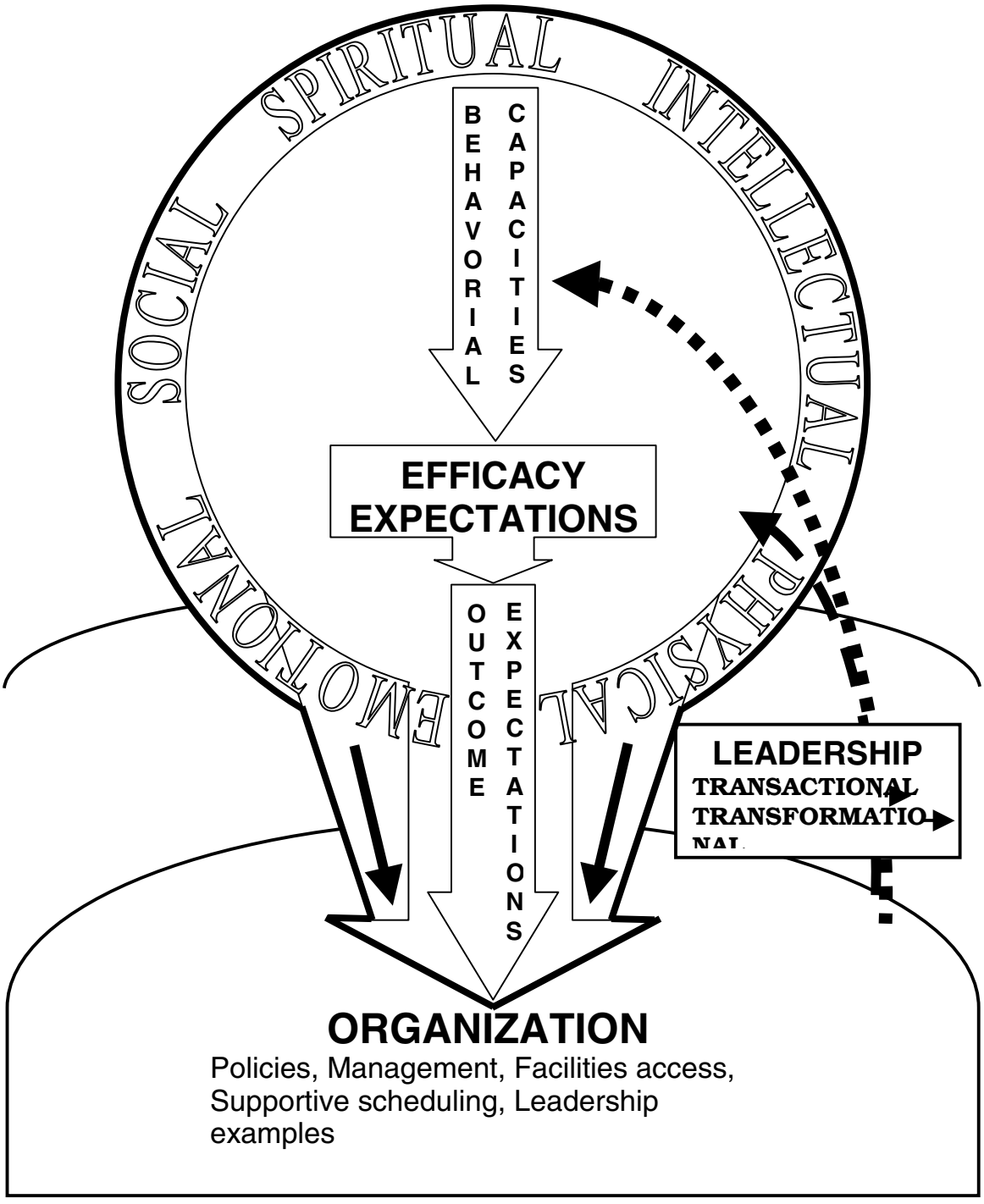

Figure 2. The dynamics of workers' adopting physical wellness into their lives.

While Figure 1 provides a perspective of the organization's attempt to institute wellness changes, Figure 2 (created by this researcher) places the individual into the proper context for this study and shows the dynamics he or she must face when attempting to adopt physical wellness behaviors. In the context of this study, it may be more useful to abandon the long-standing Western view of the individual, which is based on the Cartesian philosophy and focuses on the dichotomy of body and mind (the two solid arrows of Figure 2). The researcher proposed to adopt a more modern perspective that borrows from Einstein's unified field theory and sees not separation, but rather the connectivity of mind and body. This unified perspective, noted Seaward (1999), should be attributed to Einstein's theory of unity, which emphasizes the connection of all elements in the universe.

Figure 2 represents the individual (the central figure, boldly outlined) whose productiveness within his or her organization is directly linked to a balance in the five elements of wellness, as proposed by Dunn (the outer circle). Dunn (cited in Cooper, 1999) looked at the total person, whom he described as having social, spiritual, intellectual, emotional, and physical dimensions. It is the responsibility of individuals and their organizations to consider the total person when attempting to change behaviors that are not conducive to maintaining wellness. This

responsibility derives from the seriousness of the effects that a low degree of wellness has on the workplace and the individual's outer environment (Yorke & Galdwin, 1999). This study focused on one of the five aspect of wellness, proposed by Dunn, namely, physical wellness.[1]

Learning theories can provide a useful framework for considering the challenges individuals must face when they are about to embark on changes that will improve their physical well-being. One such theory is Bandura's (1977) social learning theory (wide arrows in the center of Figure 2). With its emphasis on the interpersonal aspects of behavior modification, it provided a guiding perspective for this study of an organization's attempt to promote, motivate, and encourage employees to adopt positive physical wellness habits. Bandura (1977, 1986) suggested and Kline (1999) concurred that behavior change involves three major constructs: behavioral capacity, efficacy expectations, and outcome expectations.

Behavioral capacity focuses on the skills necessary for the performance of the desired behavior. In the case of physical wellness, organizations and individuals must strive to correct misconceptions and

[1] Although all five aspects must be considered when a behavior change is attempted, not all five can be changed by the organization. In designing a new wellness program, the rules of gender integration or modesty of potential participants must be considered by a government agency. Legal constraints prevent the organization from instituting changes that would affect spiritual aspects. Additionally, not all aspects are easily measured. There is, however, a generally recognized and accepted link between a person's physical health and total health, which can be considered here.

attain the knowledge and skills necessary to transform themselves from unhealthy to healthy individuals and organizations.

The second construct, efficacy expectations, concerns individual beliefs regarding one's ability to carry out a course of action, or successfully perform a new behavior. This can be a major challenge because it requires transformational leadership both on a personal and on an organizational level. Transformational leadership (dashed arrow of Figure 2) stands in sharp contrast to the traditional transactional leadership style (dotted line) examined by Ivancevich, Lorenzi, Skinner, and Crosby (1997), who described it as "a leadership approach in which leaders appeal to the workers' rational exchange motive. . . . In other words, workers exchange labor for wages" (pp. 352-353). To avoid creating unrealistic expectations and setting the individual or the organization up for failure, a transformational leadership style is required. It focuses on modifying followers' beliefs and values and, ultimately, their behaviors. Transformational leadership can, in the words of Bass (as quoted in Ivancevich et al., 1997), inspire individuals and organizations to create "performance beyond expectations" (p. 352).

The third construct, outcome expectations, suggests that employee participation in physical-health-improvement initiatives would lead to the desired effects or consequences. The writings of Bandura (1977, 1986)

and Huff and Kline (1999) give rise to the expectation that involving employees in developing new health initiatives would assist them in comprehending the enormous benefits associated with participation in a wellness program for themselves personally as well as for their organization. Bandura (1977) made the point in his social learning theory that it is "useful to program development because, in addition to describing the important influences of behavior change, it describes the processes through which these influences can be modified" (p. 391). Thus, Bandura's theory played a central role in this study as it explored how the leaders of organizations might design programs that give employees the knowledge and skills necessary for the adoption of a healthy lifestyle, while increasing their efficacy and outcome expectations.

The given situation indicated that a substantial portion of the sample was underutilizing resources, which could help maintain or improve their health, despite the fact that an active CFP was in place and unlimited free access to the fitness facility was granted. Thus, the CFP offered by the USA221st BSBWG had to be evaluated within the framework of Bandura's (1977) model to determine its current effectiveness and how it might be improved to encourage broader

participation and increase the physical wellness of the civilian employees who work at the USA221st BSBWG.

Research Questions

This study was guided by two lines of research:

The first line of research investigated possible associations between Employment Category (the factor, or independent grouping variable comprising AF, NAF, and GC) and selected fitness variables, such as facilities, fitness behavior, and number and type of identified barriers.

The second line of research investigated possible associations between the number and kind of stated barriers and selected variables connected with employment, such as Employment Category, Work Type, and Supportiveness of Boss. *Number of Barriers* was in detail defined by the sum of stated barriers divided into four approximately equal groups with the categories 0 (*no barriers*), 1 (*one barrier*), 2 (*two barriers*), and 3 to 10 (*three to 10 barriers*). Thus, the variable *Number of Barriers* also represented a factor.

It should be noted that, in the first line of research, *Employment Category* is used as an independent variable; in the second line of research, *Employment Category* is a response variable. The statistical questions are listed in detail in chapter 3.

Scope, Delimitation, and Limitations of the Study

The scope of this study encompasses the approximately 10,038 civilian employees of the United States Army who live and work in Wiesbaden, Germany, and the extent of their participation or nonparticipation in a CFP and use of the fitness facility, both offered free of charge. This study could conceivably be used as a pilot study should the Army with its greater assets wish to conduct follow-up research on a larger scale.

The study was conducted under the aegis of a university program on management, rather than under a health and human services program. Information was, therefore, pursued and presented from a management perspective. While stress, obesity, and ORD constitute the background that necessitated the Army's development of a CFP and offering free access to a fitness facility, these conditions were not the focus of the study, and obesity was not measured. Stress, obesity, and ORD were discussed only to demonstrate the need for empowering workers to continue being or becoming physically active.

A limitation envisaged was the potential personal bias of leaders to be interviewed regarding wellness offerings and any personal belief systems regarding what constitutes wellness. Further, while wellness

involves spiritual, physical, social, intellectual, and emotional components (Dunn as cited in Cooper, 1999), this study was limited to the examination of physical wellness through participation in the CFP and use of the fitness facility at the 221st BSBCWG. Not measured in this study were obesity and obesity-related diseases or emotional wellness; rather, it was assumed that an improvement in physical health through activity would, generally, produce a similar improvement in emotional health. However, indications of emotional health stability are presented in the results section because they emerged through responses to Question 18.

It was anticipated that little or no data would be maintained and archived by the Army, giving some indication about the health status of civilian employees or why civilian employees in the military community are or are not physically active. Although this represents a limitation to knowing the truth about the health status of the civilian employee population, it is of no importance to this study because it is not focused on the health status of employees, but rather on their utilization of health resources. Nonetheless, Questions 2, 3, 7, and 9 provided some insights and might motivate the Army to begin keeping such records.

Assumptions

The following four assumptions were made in this study:

1. Employees and employers know that regular exercise has a positive effect on obesity and obesity-related diseases.

2. Employees have a need and want to change or maintain their health status.

3. Employers are aware of the need for physical activity in the workplace and want to implement positive changes to improve the physical health within their organizations, if for no other reason than cost containment.

4. Basic needs, such as food, shelter, and safety, are being met; therefore, efficacy issues might be the primary concern (Maslow, 1968; Appendix A).

Social Significance of the Study

Obesity in America is steadily increasing. Because much of a worker's time is spent within the work organization, societal pressure is being brought upon organizations to take responsibility and help by implementing FCs and programs that improve their employees' physical wellness (Stahl, 1991). If work organizations could effectively intervene in

the obesity problem, thanks to their access and influence over workers' time, society as a whole would reap the benefits.

Since the middle of the 20th century, an implicit social contract has governed relations between companies and their employees. The contract was characterized by long-term job security, a living wage, and generous health insurance and pension benefits for employees and their dependents (Kochan, 1999; Maxwell et al., 2000). However, technological changes have not only reduced the number of employees needed by organizations, but also severely shaken the social contract between employer and employee (Ho, 1997; Wolfe & Parker, 1994). Additionally, the reduction in workforce has put more strain on the remaining workers, as pointed out by Wolfe and Parker (1994). Such changes in the social contract also have undoubtedly some negative effects on employee health and well-being by increasing the likelihood of overwork, work stress, job dissatisfaction, and accidents; this was predicted in 1994 by Wolfe and Parker and confirmed by Ho in 1997.

While today's workers can no longer depend on long-term employment, they can and do demand a certain quality of life while employed by an organization. Proactive wellness initiatives could be one such quality-of-life improvement offered by organizations. Happy workplaces add up to happy societies. Wellness programs have already

been shown to increase employee morale and productivity. Ho (1994) stated, "Corporate wellness programmes are observed to be beneficial not only for employee wellbeing, but also for organizational wellbeing" (pp. 7-8). The results of her study indicated that wellness programs have a positive impact on employees' attitude toward their companies—job satisfaction with fringe benefits. When the level of job satisfaction is high, the level of stress and absenteeism tend to be low, which may well lead to a more motivated and productive workforce.

Individual and group obesity has to be controlled in America and in its Army. With stressful and busy workweeks, working adults are faced with the challenge to maintain or improve their physical health. It was expected that decision makers would benefit from the findings of this study, which would, then, contribute to a better informed decision-making process when it comes to empowering employees to take part in a wellness program. The participation of workers in a wellness program as part of their workday could, in turn, have a positive effect on health care costs, productivity, absenteeism, and morale. The Cooper Institute for Aerobic Research (2004, January, 2) stated that "promoting health at worksites is effective for cost containment, enhancing recruitment, improving employee retention, increasing employee satisfaction, and boosting employee productivity" (section 3, p. 2)

Professionals in the medical, fitness, management, and leadership communities in the United States Army Europe (USAEUR) have expressed interest in the results of this study (Personal communication by Lieutenant Colonel Christopher Franks, February 22, 2004; Lieutenant Colonel Dennis Slagter, November 29, 2002). The health issues facing both the military and the civilian workforce (as a combat multiplier)[2] are of grave concern to the Army leadership. The deputy director for the Installation Management Agency for Europe, Colonel Russell Santala, gave this researcher permission to conduct research in all Army installations in Europe because of the potential benefits that it could offer Army communities (Personal communication, December 6, 2002). However, constrained by the exigencies of time and financial resources, this researcher had to limit the sample to the civilian employees of the 221st BSBCWG. This installation is also in full support of the study because, out of employees who are eligible to participate in the CFP, a mere 3-10 individuals (or .128%) sign up on a yearly basis, and only 12% utilize the installation's FC (Personal communication by Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17,

[2]*Combat multiplier* is a military colloquialism for many support structures. For example, while civilian employees are never meant to become involved in combat, their skills, knowledge, and services allow the army to fight more efficiently and effectively. The term is also used for a loving, supportive family and the cards and letters fellow Americans send to the troops.

2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Woods, February 26, 2004).

Further, Lori Penedia, the CFP manager for the community, stated that "Wiesbaden has the lowest participation rates in the CFP in all of the European Army communities" (Personal communication, December 2002). Thus, the USA221st BSBWG stood out among all the Army communities because it appeared to be the worst of the worst in terms of participation. Trying to explain why this was so put at a loss not only this researcher (who is a fitness expert), but also the installation commander, the wellness director, and the FC director at the USA221st BSBWG.

The installation's previous commander, Lieutenant Colonel Dennis Slagter, was enthusiastic about this study and granted permission to conduct it because, in his words, "the results could/should reap valuable information for this community." His predecessor Lieutenant Colonel Christopher Franks approved and supported the study as well. For purposes of data collection, he provided access to all existing data sources and the civilian employee population. Invaluable during the data collection process were the members of Colonel Franks's staff: Kevin Ringgold, FC director; Tracey Chenault, fitness program director; Lori Penedia, wellness coordinator; and Ron Givens, fitness center manager.

All were generous in sharing available data and were eagerly awaiting the results of the study (Personal communication, November 29, 2002).

In addition, while the researcher resided in Baumholder, Germany, and made initial preparations for this research project, another United States Army commander, Lieutenant Colonel Hercules Wagner, granted permission to conduct the study, in December 2001, because he, too, was interested in the results for the benefit of his community (Personal communication, December 12, 2001).

Definitions of Terms

The following terms were operationally defined for use in this study.

Aerobic or cardiovascular exercise: Exercise that improves the condition of the heart.

Appropriated-fund employees (government service, GS): These employees are not responsible for making a profit. Their pay is federally funded. Both the CFP and the FC are available to them.

Army Airforce Exchange Service (AAFES) civilian employees: AAFES is similar to a Wal-Mart in the civilian sector because of its retail sales of household items and personal products as well as concessions. However, AAFES differs from a Wal-Mart in that over 70% of its profits go back into the community as *morale welfare recreation* (MWR)

programs, such as bowling, clubs, sports programs, hobby shops, and more. The AFEES is profit-driven and responsible for all of its operating costs (AAFES, 2004 March). AFEES employees are authorized to utilize the FC, but not the CFP.

Civilian employees: Individuals who works on a military installation but are not in the military and, therefore, do not have to exercise as a condition of employment. Civilian employees could be AFEES, DODEA, GS, NAF, or contractors.

Civilians: Individuals of the military community who are not active-duty soldiers, including dependents of both civilian and military employees, as well as visitors.

Community: Community means socializing with friends and neighbors, fellowship and networking, all conveniently located. Everyone plays an important role in the community. The MWR supports the members with community-building activities, events, and celebrations that bring people together.

Contracted civilian employee: A civilian employee who works for the government on a contractual basis. Contractors are allowed to utilize the gym, but not the CFP.

Department of Defense Education Agency (DODEA): These employees work for the government in the education of children in grades K-12. The

DODEA includes teachers, principals, and support staff. These employees are not allowed to use the CFP, but may use the FC.

Diabetes mellitus: A chronic disorder, characterized by abnormally high blood glucose levels, that can be classified as Type I or Type II. Type I diabetes is typically genetic and requires insulin to maintain appropriate blood sugar levels. Type II diabetes is frequently dependent on insulin and is usually acquired as a result of lifestyle (Cooper, 1999).

Emotional wellness: Healthy condition of the human mind in a psychological sense.

Feng shui:

> Feng Shui is an ancient practice of an interpretive framework used by practitioners to channel positive energies into and through various environments, thereby altering or changing an individual's fortunes. It is a philosophy of arranging a living environment where . . . energies are in complete harmonious balance. (Goodall, 2001, p. 18)

Flexibility exercise: Exercise performed with or without weights to improve the range of motion of a joint.

General staff civilian employees (GS): see Appropriated-fund employees.

Growth: As a soldier, one continually trains to build one's skills and stay sharp. In many ways, the MWR provides that same edge for the rest of one's life. Everyone and their family members have a world of choices for personal growth, enrichment, learning, and discovery.

Health-conducive behaviors: Behavioral choices leading to a healthy lifestyle.

Health-conscious workers: Workers who are concerned about their personal health status and make a conscious effort to improve it.

Heart disease: A general term for diseases caused by the build-up of fatty plaque in the arteries that affects the heart and circulatory system. Heart disease can be genetic; however, in modern cultures it is typically related to a high-fat/high-sodium diet and physical inactivity.

Morale welfare recreation (MWR). As the name implies, this organization is charged with caring for the military community's morale, welfare, and recreational needs. As quoted from its Web site, the MWR divides this task into community, growth, peace of mind, renewal, and self-reliance.

Nonactive-duty workers: Workers in the Wiesbaden Army community who are not active-duty soldiers.

Nonappropriated-fund (NAF) civilian employees: Such employees work in the military community's daycare centers, bowling alleys, recreation facilities, and FCs. They have to make a profit to run their programs, pay their staffs, and maintain their facilities. NAF employees cannot utilize the CFP, only the FC.

Obesity: A level of excess body fat that increases the risk of disease. An individual is considered obese if body fat is greater than 30% for women and 20% for men (Cooper, 1999; Yorke & Galdwin, 1999).

Overweight: Individuals are considered overweight when their body mass index (BMI) is greater than or equal to 27.8 for men and 27.3 for women. Approximately 33% of adults in the United States are overweight (Cooper, 1999; Huff & Kline, 1999; Yorke & Galdwin, 1999).

Peace of mind: Everyone's well-being is important to the Army. Through the MWR, one has a network of professional resources that promote personal and family stability and provide peace of mind about the important things in a person's life.

Physical wellness: Healthy condition of the human body in the physiological sense.

Preventive health maintenance initiatives: Proactive activities, such as exercise and proper diet, that enable employees to improve their health prior to experiencing health concerns or after being at risk for disease.

Regular exercise: Cardiovascular exercise performed two to three times per week.

Renewal: Active duty is tough and demanding. Everybody needs balance and time to replenish his or her resources after a hard day's work; the MWR offers many ways to relax, recharge, renew, and rejuvenate.

Self-Reliance: The MWR cares about Army families. From financial counseling to preparedness for deployment or reunion, the MWR not only supports, but teaches and encourage families to be self-reliant (MWR, 2004 March).

Strength training: Exercise with or without weights performed to improve muscular strength.

Wellness: A multidimensional concept incorporating the physical, mental, emotional, and spiritual aspects of a human being (York & Galdwin, 1999, p. 1).

Chapter Summary and Overview of the Study

This chapter provided the background for the study, including the problem statement; purpose of the study; a theoretical framework; research questions; scope, delimitations, and limitations of the study; assumptions; social significance; definition of term; and a chapter summary and overview of the study. Chapter 2 will review pertinent literature, including a historical perspective on wellness in the workplace; theories of leadership and organizational success; and

current trends to combat pervasive obesity and promote fitness/wellness in the workplace, with a special focus on the Army's civilian employees. Chapter 3 will present the research methods of this exploratory case study, including three lines of approach to information gathering, a description of population and sample, methods of data collection, instrumentation, validity and reliability, the research questions, and data analysis. Chapter 4 will present the results, including demographic information and a discussion of the two lines of research. Chapter 5 will present a summary of the findings, draw conclusions based upon the findings, show their implications for social change, offer recommendations for further study, and conclude with the researcher's reflections on the research process.

CHAPTER 2

LITERATURE REVIEW

Introduction

Wellness is a multidimensional concept incorporating the physical, social, intellectual, emotional, and spiritual aspects of a human being (Yorke & Galdwin, 1999). Throughout this study, the terms *wellness* and *health* are used interchangeably. This study focused on the physical aspects of wellness and the lack thereof, specifically among the civilian employees of the United States Army in the 221st Base Support Battalion Community in Wiesbaden, Germany (221st BSBCWG), due to a lack of participation in physical activity programs offered to the Army community.

A study on civilian wellness within the Army was groundbreaking. It also was vital to the success of the Army's mission because as William Burgess, Head of the Wellness Center in Heidelberg, Germany, stated, "The health of the civilian workers who work for the Army is just as huge a concern as is the health of their civilian counterparts" (Personal communication, September 2003). Moreover, because physical activity has been shown to prevent many illnesses and maintain proper health, the Army and the rest of America need to understand what is holding

back employees from being physically active (CDC, 2003, March 3; CDC, 2004, January 15, 16).

This nonparticipation was puzzling, especially because the Army is providing two major incentives for their employees to exercise. The first incentive is the CFP (CFP), which allows civilian employees paid time off to exercise. The second incentive is free access to a fitness facility. However, the civilian employees who work for the Army underutilize both resources: Only .128% (i.e., 3-10 individuals) use the CFP, and only 12% use the fitness facility, according to experts in the field of physical fitness (Personal communication by Evans, June 1, 2004; Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17, 2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Woods, February 26, 2004)

American statistics on obesity, overweight, and physical activity seem to be getting progressively worse, which seems to indicate that other organizations besides the military are equally unable to motivate their employees to exercise (NCCDPHP, 2002; NCHS, 2002a, 2002b, 2002c). Richard Simmons (quoted in Barrett, 2004) asked,

> With more gyms, fitness professionals, and money spent on diet products than ever before, it doesn't seem to make any sense . . . shouldn't the battle be won by now? . . . Why is there an inverse relationship? (p. 18)

The fact is that, despite constant claims of implementation of corporate wellness centers and an increase in memberships in gyms across the nation, 64% of Americans are still obese or overweight (International Health, Racquet & Sportsclub Association [IHRSA], 2003; NCHS, 2002a; Stahl, 1991).

Parchman and Miller (2003) made the critical point, "While wellness programs continue to gain acceptance and are implemented by an increasing number of organizations, the degree to which these benefits are fully realized is determined by utilization" (p. 1). By analyzing an organization that is making great efforts through free access and free programming to inspire its employees to become active, this study attempted to isolate some underlying and, heretofore, unknown inhibitors to exercise that affect civilian employees.

Organizational Structure of the Literature Review

The focus of this review of the literature is twofold: The first part seeks to determine what employers in America, and in particular the U.S. Army, are offering to employees in order to improve their physical well-being. The second part focuses on the effectiveness of the programs in improving the employees' physical health.

The literature review is designed in the following format: The first section provides information on a number of disciplines involved in the study of workplace wellness. The second section describes current trends and the seriousness of the obesity issue. The third section presents research on organizations that currently promote wellness initiatives in the workplace and the effect of such programs on employees' physical wellness. The fourth section explains the need for the study and the measurement tools that were employed.

Section 1: Historical Understanding of Wellness in the Workplace

This section explains briefly the changing employer-employee relationship of modern organizations, workplace-related stress and health issues, and the responses not only of business organizations, but also of many wellness-oriented disciplines in order to promote better employee health.

Stress and its Effect on Employee Health

Without a doubt, today's work organizations are stressful (Antai-Ontong, 2001). Stress is a multifaceted condition. Antai-Ontong (2001) stated that "stress affects everyone . . . and today's societal stress is skyrocketing at an alarming rate and placing tremendous strain on

individuals, families, and communities" (p. 31). Many negative health factors are interrelated with stress, such as obesity and obesity-related diseases (OORD); foremost among them are heart disease and diabetes (Bagley & Bagley, 2003; Brosschott & Thayer, 2003; CDC, 2001b; Landsbergis, 2003; Stukard & Allison, 2003). These two illnesses are directly linked to physical fitness and often are by-products of stress left untreated.

Stress frequently has its roots in the workplace. Yemi Marteniz, a 25-year-old Ivy League graduate, told reporter Geraldine Sealey (2001, May) of ABC News that he is treated like a machine at work, and the stress of this situation is taking a toll on the rest of his life leading him to engage in unhealthy behaviors. He stated, "Often the only way I can relax or unwind after work is by eating" (p. 1).

The effects of such stress will, in turn, interfere with an organization's productivity and ultimately its profits. Data from the American Institute of Stress and the American Psychological Association indicate that job stress and related problems cost American companies as much as $200 billion annually (Parry & Lacy, 2000). In his study, *Workplace Stress Related to Organizational Change in Telecommunications Management Employees*, Yost (2002) found that "stress-related workplace

conditions represent the most important health problems facing workers" (p. 5).

Humans, as physiological beings, seek equilibrium (AFAA, 2000a; von Bertalanffy, 1972; Deason, n.d.). High blood pressure, stress, and weight gain are all signals that the body is not in equilibrium and that it is not comfortable with its current state. Burrows, Eves, and Cooper (1999) suggested that "people are motivated to take care of themselves because it makes them feel better and improves their overall health . . . it gives them a sense of achievement" (p. 64). The American Heart Association (2002) remarked, "While physical well-being itself is an important indicator of quality of life, physical activity can also serve as a means of enhancing other indicators, such as interpersonal relationships, self-determination, and inclusion" (p. 78).

Discussing stress and how workers try to combat it in order to improve their health lends itself to a review of theoretical perspectives from various disciplines, including theories about wellness, health improvement, and learning and health promotion. Also reviewed will be systems theory and organizational success, as well as leadership styles and leadership theories as they correlate with health promotion.

Wellness Theory

The concept of good health is multifaceted in that wellness involves a balance of the physical, emotional, intellectual, spiritual, and social states. In addition, each culture has its own way of achieving this balance, or wellness. There are varying degrees of wellness, ranging from morbidity to optimal wellness. Many people think of wellness as the opposite of illness—thus, if they are not ill, they must be well. This view, however, is too narrow. Contrary to the prevailing view, genuine health, or wellness, is not just being free of disease or infirmity; it is a state of positive well-being (Cooper, 1999). In other words, wellness is equated with equilibrium with one's environment.

Dunn (as cited in Cooper, 1999) was a physician and statistician who saw wellness as a process involving zest for living; he advanced the idea of wellness as a state of equilibrium. In his wellness theory, Dunn considered the total person, that is, the social, spiritual, intellectual, emotional, and physical dimensions of the person. It is the responsibility of individuals and their organizations to consider the total person when attempting to change behaviors that are not conducive to maintaining wellness (Cooper, 1999; Yorke & Galdwin, 1999). Although Dunn's theory promotes looking at the total person, the present study can, for practical reasons, focus only on the physical wellness opportunities provided by

the Army for its civilian employees in the Wiesbaden U.S. Army community. Yet, Dunn's wellness theory has practical applicability. By participating in physical wellness activities, workers have the opportunity to stabilize and improve their physiological systems and, by extension, many other aspects of their lives that lie beyond the scope of this study.

Theories Related to Health Improvement

There are numerous theories related to health improvement. Pender's (1996) health promotion model focused on explaining health-promoting behaviors by using a wellness orientation. Polit and Hungler (1999) explained Neuman's health care system model as focusing on the person as a complete system in which the subsystems—physiological, psychological, sociocultural, spiritual, and developmental—are interrelated. In this model, the person maintains balance and harmony between the internal and external environments by adjusting to stress and defending against tension-producing stimuli.

Orem's (1985) self-care model focused on an individual's ability to perform self-care, defined as "the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being" (p. 35). One's ability to care for others is referred to as *dependent-care agency* in Orem's model. Polit and Hungler (1999)

suggested that, by incorporating the concepts of Orem's self-care model, businesses could pursue the goal of helping people meet their own therapeutic self-care demands.

Employers, in the context of Orem's (1985) model, would be required to provide their employees only with the opportunity to maintain their health, thus, acting as a dependent-care agency. Ultimately, employees would have to be responsible for self-care in maintaining their health in what Neuman (cited in Orem, 1985) refers to as one's health care system. In reality, however, the conflict between society, employer, and employee over who should be responsible for the state of employees health gives rise to analytical questions, such as: Who will hold the responsible party accountable? If employees are not taking responsibility for their own health, will employers have to deal with increased health care costs and absenteeism? Will members of society at large ultimately end up paying the bill? What should be the consequences for those who do not take care of themselves once they are given the tools, opportunities, and resources to maintain their health? On the job, will there be a denial of opportunity for promotion? Will there be suspensions or terminations if employees do not maintain their health? Will access to social programs, such as Medicare and Medicaid, be denied to those who do not meet height and weight standards until such time when they take

action to improve their health? Or will the only consequence be a premature death?

After providing comprehensive resources to combat obesity, society will eventually have to ask itself if it, or some of its components, might not directly or indirectly contribute to aggravating the problem. Although the previous questions are not research questions for this study, they are meant to stimulate thinking about a central issue in the fight against adult physical inactivity and the potential consequences of this inactivity—obesity-related diseases.

Theories Related to Learning and Health Promotion

The behaviors learned throughout an individual's life impact his or her ability to achieve wellness, and various learning theories address how to promote, motivate, and encourage individual health. Bandura's (1977) social learning theory provides three constructs, which, according to him, define behavior. Bandura's theory is important to this study on wellness because as organizations attempt to promote, motivate, and encourage employees to adopt positive physical wellness habits, they must be aware of the interpersonal aspects of behavior modification. Bandura suggested that behavior change involves three major constructs: (a) behavioral capacity, (b) efficacy expectations, and (c) outcome expectations.

Behavioral capacity. The first construct, behavioral capacity, focuses on having the skills necessary for the performance of the desired behavior; in the case of physical and emotional wellness, organizations and individuals must correct any misconceptions or attain the knowledge and skills necessary to transform themselves from unhealthy to healthy.

Efficacy expectations. The second construct, efficacy expectations, concerns individual beliefs regarding one's ability to successfully carry out a course of action or perform a behavior. This could prove to be a major challenge, requiring *transformational* leadership on both the

personal and the organizational level. A *transactional* leadership style might simply place unrealistic expectations on those affected, and both individuals and organizations could be setting themselves up for failure (e.g., the organization might expect that all work be completed before it will provide access to the facilities for exercise). In such situations, a transformational leadership style would bode better for success. (The difference between the two leadership styles will be further elaborated in a later section.)

Outcome expectations. The third construct, outcome expectations, suggests that employee participation in physical health improvement initiatives would lead to desired effects or consequences. For example, employers might help their employees understand what they have to gain by being truly healthy. Huff and Kline (1999) showed how Bandura's constructs define the challenges involved in helping people adopt healthy behaviors.

Bandura's (1977) social learning theory "is useful to program development because, in addition to describing the important influences of behavior change, it describes the processes through which these influences can be modified" (p. 391). Bandura's theory will, therefore, play a central role in the proposed study, notably when it comes to ways in which organizational leaders could design wellness programs that give

employees the knowledge and skills necessary for the adoption of a healthy lifestyle with optimal efficacy and outcome expectations.

Maslow's (1977) hierarchy-of-needs theory will also play an important role in this study in that it relates to the psychological and motivational aspects of participation in an exercise program. Deeply rooted in religion and philosophy, Maslow's theory uses a humanistic approach to focus on the positive aspects of human behavior rather than viewing behavior as sequenced or mechanistic. Maslow believed that behavior is largely determined by goals and aspirations. He rejected the notion held by proponents of a psychodynamic and behavioral psychology, who maintained that forces beyond people's control are largely determining their behaviors. Maslow argued that such an approach robs people of their essential dignity. By encouraging their creativity, personal responsibility, and values clarification, Maslow attempted to help people understand themselves and develop to their fullest potential (Brazil & Moore, 1998; Maslow, 1970, 1999).

In Maslow's (1977) theory, human needs form a pyramid in which physiological needs form the base, and self-actualization needs form the top of the pyramid (Appendix A). This arrangement of innate needs from strongest to weakest is what Maslow believed activates and directs all human behaviors, including those conducive to health. Furthermore,

Maslow theorized that needs at the bottom of the pyramid must be at least partially satisfied before the higher-level needs would become influential in guiding human behavior. Because of the importance of satisfying lower-level needs first, Maslow suggested that individuals are not driven by all needs simultaneously (Maslow, 1970, 1999; Schultz & Schultz, 1994). Maslow's theory has been accepted by many disciplines, especially in the field of business, where understanding and impacting employee motivation seems to be critical to organizational success, as explained by Schultz and Schultz (1994). Moreover, Maslow's theory lends itself to the study of employee health issues. For example, if employees are concerned about how to satisfy their basic needs, such as food and shelter, they will be less likely to pursue efficacy needs, such as fitness and a proper diet.

Theories Related to Systems and Organizational Success

How individual and organizational structures influence the individual (who functions both as a separate and as an interdependent system) and how this might be played out through maintaining a healthy balance of the human organism has importance for his study. Figure 1 shows that both the individual and the organization are open systems affected by various pressures, which might compete with maintaining

physical and emotional health. Von Bertalanffy's (1972) definition of a system as a group of interacting, interrelated, and interdependent parts that form a multifunctioning whole will be used in this study as a theoretical framework to examine how the organization's structural systems play a role in employee health.

The literature on organizational development typically defines an organization as two or more persons engaged in a systematic effort to produce goods and services. Leaders must influence all aspects of the organization to ensure that individuals and systems are functioning efficiently and making progress toward organizational objectives (Senge, Kleiner, Roberts, Ross, & Smith, 1994). Because the proposed study will focus on employees and how their personal health impacts organizational objectives, interest is directed toward the personal system of the body as the most important instrument and asset of both the employer and the employee.

Open systems exchange matter both within the system and with the outside environment (von Bertalanffy, 1972). The organization can be seen as a living being in that it functions in many respects in the same way organic systems do. Therefore, the organization is subject to the Darwinian concept of survival of the fittest. The organization might be seen as a larger system of nature, while employees constitute the living

cells making up the system of nature. Thus, the health and stability of the larger system depend on the health and stability of each of the subsystems of which it is composed. The organization does not necessarily have to employ elite athletes in order to maintain high levels of productivity, but it does need employees who have a well-balanced approach to personal health (von Bertalanffy, 1972; Seward, 1999; Sherman, 1990)

In regard to maintaining health, individuals will be affected by influences within their organizational system, such as deadlines, poor leadership, and difficult or dangerous work environments, as well as by external forces, such as family and social pressures; all of these can challenge the balance within the individual system (Ho, 1997; Sherman, 1990; Wilson & Wheeler, 1991). Such stressors can interfere with physical and mental activity and impact individual productivity and health (Antai-Ontong, 2001; von Bertalanffy, 1972; Ho, 1997; Sherman, 1990). Organizations have a vested interest in keeping employees healthy, and Bigus, Schmitz-Rizzo, and LaMartina (1999) pointed out that this is a goal to be shared by individuals and society as well (p. D30).

Leadership Theories, Leadership Styles, and their Correlation with Health Promotion

A number of theoretical perspectives are extant with respect to developing, leading, or managing change within organizational systems. In regard to wellness promotion, leadership styles can have a profound influence on employee participation in physical wellness activities. For example, if a leader financially backs such programs or allows time off for exercise, the leader may increase employee participation. Participation may also increase because employees view the leader as being emotionally supportive in employee health initiatives. This study will present two major theoretical concepts of leadership style that might impact employee participation in health-conducive activities: transactional versus transformational leadership.

Transactional leadership. According to Ivancevich, Lorenzi, Skinner, and Crosby (1997), "transactional leadership is a leadership approach in which leaders appeal to the workers' rational exchange motive. . . . In other words, workers exchange labor for wages" (pp. 352-353). Such leaders lead in closed systems where the benevolent leader is followed without resistance from his or her external environment. Transactional leaders assist their subordinates to recognize responsibilities and set goals, and then reward them for their work.

Transactional leaders are primarily concerned with how efficiently and effectively their organization's nonhuman systems interact in relation to production. Transactional leadership is highly correlated with leadership styles that do not view employee wellness as having an effect on organizational success. Transactional leaders may view participation in physical activity as frivolous or nonessential in workplace productivity. If transactional leaders do implement a wellness center, it would be implemented as a closed system within the organization. The center would not be linked to connecting systems via supportive policies in order to become fully implemented and effective. The researcher suspects that the Army might be using the transactional approach in implementing its CFP.

Transformational leadership. The converse of transactional leadership is transformational leadership. Transformational leaders view all of their organization's resources—real property and human capital—as essential to productivity. Transformational leadership theory is an inspirational form of leadership behavior based on modifying the followers' beliefs and values, and, ultimately, their behaviors. Bass (as cited in Ivancevich et al., 1997) referred to transformational leadership as leadership that creates "performance beyond expectations" (p. 352). Transformational leaders successfully modify their followers' beliefs and

values, which results in behavioral changes that are conducive to organizational success. If leaders can inspire individuals or groups to perform beyond normal expectations (such as transactional work) and focus on broader goals (such as healthful behaviors), organizations and individuals can experience positive results. The employees will receive health benefits, while the employer is receiving financial profits from saved health care costs, decreased employee absenteeism, and increased employee productivity (Stahl, 1991).

The main difference between transformational leaders and transactional leaders is that only the former emphasize changing the workers' attitudes and behaviors by offering more than the extrinsic rewards of pay increases and promotions. Transformational leaders are honoring the employees' higher-level needs, as identified by Maslow (1970). Transformational leadership focuses in particular on Maslow's love and belongingness needs, esteem needs, and self-actualization needs, whereas transactional leadership focuses on physiological and safety needs (Bandura, 1977; Maslow, 1970, 1999).

To motivate and empower employees to adopt healthy lifestyles, the effective transformational leader understands that an employee's individual needs are based on his or her values and beliefs. In addition, the leader must implement structural changes present in transactional

organizations because without a balance of both forms of leadership, organizations will ultimately suffer. The organizational iceberg theory (Appendix B), proposed by Herman and cited in French and Bell (1984), depicts the formal (overt) and informal (covert) aspects of organizational culture. Formal aspects include goals, technology, structure, policies, procedures, products, and financial resources, whereas informal aspects would be values in addition to beliefs and assumptions, perceptions, attitudes, and feelings (e.g., anger, fear, liking, or despair). Informal systems directly impact the formal system, thus affecting the effectiveness of the organization and its leadership and management. The organizational iceberg model demonstrates the importance of integrating both transactional (formal) processes and transformational (informal) ones within organizations (French & Bell, 1984, p. 23; Ulrich, Losery, & Gerry, 1997).

Leadership styles, whether transactional, transformational, or a combination of the two, may or may not prompt wellness changes within organizations. Some managers' leadership styles will motivate employees to become physically active, while other managers' styles might not. If leaders cannot influence employees to adopt health activities, the organization's primary goal of making a profit will ultimately suffer through health-related financial losses. In the case of a government

organization, an increase in health care costs as a budget item reduces funds available for other needs. Leaders will have to answer to their shareholders or other stakeholders. Perhaps, it is through accountability that leaders can be persuaded to make changes. Cacioppe (2000) pointed out some of the skills needed by effective leaders of today:

> Leadership is the ability to influence and develop people, teams and organizations to achieve worthwhile purpose. There are many current theories and ideas of what constitutes effective leadership. These cover the personality factors of leadership, styles most suited to situations, the ability of leaders to meet their followers' needs and more recently the transformation/visionary skills of leadership. These theories describe the ability of leaders to know what is needed in the moment to appropriately and wisely fulfill a worthwhile purpose. This leadership wisdom is vital to building effective individuals, teams, and organizations.
>
> Leadership, therefore, has a key role in facilitating this wisdom and spirituality in the workplace. The behaviors, level and type of self-awareness of the senior managers within the organization are especially important to this process. Senior executives need to be wise in finding worthwhile and profitable business activities and to work to meet the needs of their stakeholders, staff, and customers as well as the international community and natural environment. Organizational development processes need to help align the vision, objectives, structures and actions to fulfill these needs. (p. 4)

Leaders of the future who wish to be effective will need to understand their organization's culture and know how to influence this culture so employees will become healthy. Without healthy employees, production engines will be idle. Without the leaders' full commitment and energy, organizations risk not optimizing their competitive advantage (Marshal, 1998). To manage change processes effectively within their

organizations, managers must be cognizant of their leadership style and their employees' attitudes about change.

The Army's Wellness Philosophy and Lack of Focus on Civilian Employees

On the surface, the Army has a beautiful framework for wellness, which is supposed to integrate the mutually supportive demands and expectations of the Army and its people. However, as Lt. Col. Wood put it, "The Army recognizes that it has great programs, but sometimes the programs are not integrated with other functions and with the Army's goals and objectives to maximize the benefits for the soldier, retiree, or family member" (Wood quoted in Burlas, 2002). Herein lies the problem with the CFP and fitness facility underutilization: The Army's primary mission is to protect and serve the citizens of the United States. The Army realizes that people are its core resource in accomplishing its mission. The Army's vision consists of three interdependent and interrelated elements: people, readiness, and transformation. The U.S. Department of the Army (2003) stated,

> People will remain the centerpiece of what they do; this includes soldiers, civilians, retirees and veterans. . . . Non-negotiable readiness, the foundation of the Army's contract with the American people to fight and win the Nation's war, hinges on the well-being of its people. (para. 1)

Key throughout the Army's vision is the word *people*. Moreover, the well-being of these people rings clear as the Army's top priority. It is also

important to highlight that the reference to people includes soldiers, civilians, retirees, and veterans.

However, the empowerment of the civilian population to be physically well does not appear on the front page of the Army's daily operations. The Army's polices and procedures are designed to fully empower active-duty soldiers to maintain physical wellness. Instead of making the physical well-being of all people central to everything it does, the Army appears to concentrate fully only on a segment of its population when it comes to physical health. Others seem to fall through the cracks; for example, civilian employees may use the fitness facility, but because the gyms are essentially on autopilot and civilians are not generally acquainted with gym equipment, they are often lost when they get into the gym. This affects their desire to keep coming back and exercise.

> When the Department of the Army (2003) states that institutions do not transform; people do. Platforms and organizations do not defend the Nation; people do. Units do not train, they do not stay ready, they do not grow and develop leaders, they do not sacrifice, and they do not take risks on behalf of the Nation; people do (para. 3)

one must ask oneself: If the Army sincerely believes that all people within the Army's organizational structure are part of the organization's success, why then are the leaders not developing policies and an organizational culture that support the physical wellness of all of its

interconnected parts (DOA, 2003-2)? Could it be that the highest office of the Army concentrates exclusively on the soldier?

The office of the chief of staff clearly points out where the Army places its priority with the slogan "Soldiers are on point for the nation—persuasive in peace, invincible in war" (Shinseki, 2000). It will be noticed that civilians and dependents are not on point, nor are they invincible (provided that there is such a thing). The Army needs to ask itself: Why? The Army goes on to say, "Soldiers enable America to fulfill its world leadership responsibilities of safeguarding our national interests, preventing global calamity, and making the world a safer place" (Shinseki, 2000). It should not be forgotten that this commitment of the soldier puts major stress on civilian employees who support and work alongside active-duty service members. Likewise, the dependents and spouses of these soldiers have a great effect on the soldiers' emotional well-being, as well as on the financial stability of the Army (Burlas, 2002).

Section 2: Current Trends and the Seriousness of Obesity in the Workplace

This section discusses literature that points out the prevalence of obesity, how business organizations are affected by it, and how they try to address the problem.

Prevalence, Trends, and Topics on Obesity

The impact of obesity and obesity-related diseases is appropriately and increasingly recognized by many large organizations. The American Heart Association stated, "Today it is common knowledge that obesity has adverse effects on many coronary risk factors" (AHA quoted in Lavie & Milani, 2000, p. 23). However, it is important to distinguish between being obese and being overweight; obesity is the primary concern for organizations because of the costly diseases associated with it. Walker and Singleton (1999) distinguished between body composition and weight, noting that "while height and weight tables can provide a rough idea about whether someone is overweight, such tables reveal very little about body composition or the percentages of fat versus lean muscle" (p. 49). Muscle is denser than fat; so, someone who has more muscle may appear to be overweight according to height/weight charts. Conversely, someone who appears to be within height and weight standards could conceivably have too much body fat (which is the cause of OORD, such as heart disease and high cholesterol).

Health Problems Associated with Obesity

The concern for the workplace and society is that a disproportionate number of Americans are obese. The CDC stated, "Despite this health state, Americans show little improvement in eating habits or increasing their physical activity" (CDC, 2001, para. 2). In an article entitled "Twin Epidemic," published in the 2001 edition of the *Journal of the American Medical Association*, the CDC (2001b) reported,

> There has been a 61 percent increase in the percentage of Americans who are obese from 1991 to 2000 (12.0 percent to 19.8 percent). The most dramatic increase occurred from the years 1999 to 2000, obesity jumped from 18.9 percent to 19.8 percent. Furthermore, 27.3 percent of Americans did not engage in any physical activity during the 1990s, and only about a quarter of Americans consumed the recommended five or more servings of fruits and vegetables a day. CDC's Director Dr. Jeffrey P. Koplan states that "the epidemic of obesity is clearly escalating in the United States. . . . If we continue on this course for the next decade, the public health implications in terms of both disease and health care costs are staggering." About 9.4 percent of the national health care expenditures in the United States are directly related to obesity and physical inactivity. (para. 2)

The NCHS (2002) also reported,

> One of the national health objectives for 2010 is to reduce the prevalence of obesity among adults to less than 15%. This is a good objective because the NHANES 1999 data for persons age 20 years and over suggest an increase in the proportion of obese adults in the United States, where the estimated age-adjusted prevalence moved upward from a previous level of 23% to a new level of approximately 26%. Among adults age 20-74, the estimated prevalence of overweight people has increased approximately 2% between NHANES II and NHANES 1999, whereas obesity has nearly doubled from 15% to an estimated 27%. (para. 1)

The CDC (2002) stated,

> In spite of the public health impact of obesity and overweight, these conditions have not been a major public health priority in the past. . . . Halting and reversing the upward trend of the obesity epidemic will require effective collaboration among government, voluntary and private sectors, as well as a commitment to action by individuals and communities across the nation. (para. 3)

By contrast, in many European communities, wellness is woven into the fabric of life. Germany and the Netherlands do a great job of this by incorporating public transportation, bike/walk paths, and healthful-fast-food establishments throughout their countries.

Causes and Treatment of Workplace Obesity in America

There are various factors that lead to obesity, including a sedentary lifestyle, poor diet, psychological factors, and genetics. One reason why obesity rates are on the rise and such a difficult and frustrating condition to treat is that obesity rarely stems from a single cause. This makes a multidisciplinary approach to treatment essential. On the surface, obesity appears to be caused by the American people's fondness for rich, high-calorie foods coupled with, by-and-large, a sedentary lifestyle (Walker & Singleton, 1999). Van Horn (2000) stated, "In an ideal nutritional world . . . the recommended diet . . . would promote health, support growth, and prevent risk for disease" (p. 41). The roots of poor dietary and physical activity habits are often developed in childhood. When young, many individuals did not learn how to eat

properly. Physical activity was structured into their day, often through general play activities common to youngsters, but they were not taught the positive effects of diet in regard to health. Because they were not deliberately taught how to eat well or exercise, they are unable to apply those concepts in their adult lives. As a result, many people who have gotten away with eating junk food as children and young adults suffer with weight problems in adulthood; as they are becoming less active, they continue, nevertheless, to eat in their accustomed manner.

Americans have also become more obese as a society as they have progressed from the agricultural age to the information age. Clarke (cited in Myers, 1999) suggested that the luxuries of contemporary society have created a desire among Americans to be more inactive than active. Modern conveniences have been inculcated into society's sedentary institutions. For example, elevators, interoffice mail systems, telephone systems, and e-mail have decreased the likelihood that workers will leave their desks to consult with coworkers. The overall decrease in individual movement, although such movement is not considered formal exercise, has subtly contributed to obesity in society's workplaces.

Obesity is also subject to sociocultural influences. Huff and Kline (1999) saw culture as "a dynamic template or framework used by society to view and understand, behave, and pass on racial, ethnic, or national

heritage to succeeding generations" (p. 7). Culture helps specify which behaviors are acceptable and also when those behaviors are not acceptable, noted the authors. Culture or society can be further divided into organizations, special interest groups, genders, age groups, and so on. Each group has its own values, beliefs, and rules for behavior, including those associated with health and wellness, and individuals are likely to assimilate the health behaviors to which they are exposed.

However, cautioned Huff and Kline (1999), simple exposure is an inadequate method for health promoters, as is the case within the Army. Civilian employees are exposed to people (active-duty soldiers) who exercise, but this still does not motivate them to exercise as well. The authors also described the role played by culture in shaping behavior and in developing health promotion programs for ethnically diverse clients:

> [Developing and implementing] activities for promoting health and preventing disease in any population, whether directed at individuals, groups, or communities, is a formidable task. Such endeavors require an organized effort characterized by an understanding that cultural forces, among other social forces, are powerful determinants of health-related behaviors. Culture, in any group or sub-population, can exist as a total or partial system of interrelationships of human behavior guided and influenced by the organization and the products of that behavior. Indeed the beliefs, ideologies, knowledge, institutions, religion, and governance, as well as nearly all activities (including efforts to achieve health-related behavior change), are affected by the forces of the culture that guide one's group or subgroup. Efforts to promote health and prevent disease within culturally diverse ethnic subgroups, or any

> target group, will entail influencing the health behavior of individuals, families, groups, or communities. This will require identifying and changing those factors that it is possible to modify that are associated with accomplishing the desired health-related behaviors. (Huff & Kline, 1999, p. 3)

One of the problems contributing to the Army's difficulty in influencing the health of civilians is that it employs a one-size-fits-all programming—ineffective for most any population. Acculturation and assimilation are two processes that play a major role in health and wellness decisions. Kline (1999) defined acculturation as "the degree to which an individual from one culture has given up traits of culture and adopted traits of the dominant culture in which he or she now resides" (p. 9). A high level of acculturation may explain the increase of lifestyle-related diseases among non-Western ethnic populations as these group members adopt Western beliefs, values, and habits. Kline identified four levels of acculturation: (a) the bicultural individual who can function equally well in his or her own culture and the dominant culture; (b) the traditional individual who holds on to most, if not all, the traits of the culture of origin; (c) the marginal individual who seems to have little real contact with traits from either culture; and (d) the acculturated individual who has given up most of the traits of the culture of origin for those of the dominant culture.

When working in a multicultural setting, it is important to assess the degree of acculturation because there is a natural tendency on the part of many individuals to resist adopting the values of the dominant culture, even if those values are "good for them" (Kline, 1999, p. 78). Some people may refuse to become moderately active or adopt healthy eating habits if these habits are a radical departure from the home culture. People may also resist the adoption of new behaviors for fear of exclusion from the culture of origin. By the same token, they may adopt new behaviors if they desire inclusion within the dominant culture.

Assimilation is closely related to acculturation; however, it deals with the social, economic, and political integration of a cultural group into the mainstream society to which it may have emigrated or otherwise been drawn. As with acculturation, the level of an ethnically diverse client's assimilation into mainstream society needs to be assessed by a health practitioner to better understand and perhaps predict how well that person will accept and participate in a healthful lifestyle (Kline, 1999, p. 78).

As previously stated, workers of the lower socioeconomic classes generally do not exercise; this can possibly be explained with Maslow's (1970) needs hierarchy. The poor often work more than one job just to make ends meet. By the time their day is over, they are generally

preparing for the next day and may barely have time to purchase fast food on the way home. Scholosser (200l) stated that

> [in 1970] Americans spent about $6 billion dollars on fast food; in 2000 they spent more than $100 billion. Americans now spend more money on fast food than on their education, personal computers, computer software, new cars, movies, books, magazines, newspapers, videos, and recorded music. (p. 3)

Civilians Who Are Most Likely To Become Obese

There is a general lack of physical activity in America, especially in the working population (CDC, 2003 March; CDC, 2004 March). This lack of physical activity leads to health disorders, such as obesity, diabetes, and stroke, as confirmed by the CDC (2001a). This population also suffers from a lack of information about wellness programs and the participation in such programs by employees. Although people of both genders and all races and age groups have the potential to become obese, those who are from lower socioeconomic and educational environments are more likely to do so. Huff and Kline (1999) noted that many in the Hispanic-American population, especially Mexican Americans, exemplify this group. Especially for the women in this group, acculturation and socioeconomic status have a pronounced effect on obesity levels. With increased acculturation and economic status, obesity levels decrease (p. 129). The authors also pointed out that "obesity has been found to be prevalent among women versus men within this population" (p. 131),

probably because men are traditionally more active than women because of the work they do.

The Hispanic population is not the only minority population that should be concerned with obesity and obesity-related diseases. Yorke and Galdwin (1999) seemed to agree with Huff and Kline (1999) by pointing out that "the incidence of overweight tends to be disproportionately high among minority women and women of lower socioeconomic status and/or lower educational levels, currently 49% among African American women and 47% among Mexican American women" (Yorke & Galdwin, 1999, p. 106). Among African Americans, the ratio of women to men who are obese is approximately 80:20. This gender difference, as already noted, is also seen among Mexican Americans. By contrast, the percentages of obese non-Hispanic Caucasians are about the same for men and women, as noted by the Office of Disease Prevention (2000) in *Healthy People 2010*. The article also estimated that more than half of the adults in the United States are overweight or obese and that the proportion of obese adolescents from poor households is twice that of obese adolescents from middle- and upper-income households.

The above considerations do, however, not imply that employers should not be concerned about their less obesity-prone personnel. On

the contrary, other groups do have body-weight challenges as well. For example, the highest mortality rate from any psychiatric disturbance results from bulimia and anorexia. These diseases are classified as disorders of self-control or impulse control and claim the lives of 20% of America's psychiatric patients. Both diseases are categorized as eating and body-image disorders. Anorexia is found most frequently among middle- to upper-class White female adolescents and can extend into adulthood. Bulimia sufferers also are primarily Caucasian women. Among college women, bulimia and anorexia rates are significantly higher than in the general female population. The possible link here is that they have unrealistic expectations of themselves. The AFAA (1999) explained that career women, especially those in high-status jobs or in competitive careers, do not risk revealing that they might not be perfect in all aspects of their lives. The AFFA also noted,

> both diseases [anorexia and bulimia] are a preoccupation with food and calories as well as a morbid fear of weight gain, and thus share many of the same types of methods as to avoid weight gain, such as vomiting, laxatives, excessive exercise, and diet pills. (p. 21)

Another group of concern are women and men in middle and upper management because their work responsibilities are becoming less physically demanding as they climb the career ladder.

As the research reviewed in this section has revealed, employers should be aware that all ethnic and gender groups are vulnerable to obesity. People, whether obese or suffering from anorexia or bulimia, are unhealthy members of society in the workplace. The dangers associated with these unhealthy physical states are heart disease, cerebreovascular disease, diabetes, and internal organ failure; all are costly to businesses and to society as a whole. This exploratory study is necessary to help find management solutions that will allow workers to maintain or improve their physical health throughout their careers and lives.

Social Impact of Obesity and the Strain on the Rest of Society

Taxpayers, employers, colleagues, family members, and friends suffer financially and emotionally because of the burdens and stresses caused by obese persons. Researchers from the Research Triangle Institute (RTI) and the CDC estimated that $75 billion a year in medical expenditures are related to obesity (RTI, 2004, January). In addition to that, the Internal Revenue Service Rules 2002-19 allow for tax breaks for obese persons (IRS, 2002). There seems to be a pattern of overaccommodation for obese and overweight persons: tax breaks, corporate wellness centers, time off for exercise, law suits brought against fast-food restaurants because of their fatty menu— always, it

seems, the responsibility and beyond that the blame for obesity is being placed on forces outside the individual. Taking away their responsibility actually might, in Maslow's (1999) words, "rob people of their essential dignity" (p. 10). In terms of exercise participation, it might be more effective and more dignified to encourage personal responsibility by helping people better to understand themselves and hold them responsible for "striving do develop to their fullest potential. . . . [for] we do make ourselves by our choices" (p. 17).

Obese and overweight members of society are also represented in the military community, and because the military is responsible for healthy as well as unhealthy civilian employees, the obesity problem has become a major management issue if for no other reason than cost containment (Personal communications by Mitvalsky, June 4, 2004; Mooney, June 4, 2004). Secretary of Health and Human Services Tommy Thompson (quoted in RTI, 2004, January) summed it up best, "We must stem the tide of the obesity epidemic in this country. . . . These findings are a dramatic illustration of the devastating economic impact obesity has on health care delivery systems across the nation" (para. 3)

Section 3: Organizations Currently Promoting Wellness in the Workplace and Impact on Employee Health

This section describes the efforts made by the United States Army to improve the health and well-being of its civilian workforce. It also focuses on the work of other health-promoting organizations with respect to obesity and the benefits of physical exercise. Lastly, the notion of possibly hidden external or internal barriers is introduced, which might prevent employees from taking advantage of fitness programs offered by their employers.

The Army

In its "Framework for Taking Care of the Army," the Army defined well-being as the personal state—physical, material, mental, and spiritual—of soldiers and civilians and their families who contribute to the preparedness to perform the Army's mission (Burlas, 2002). In this Framework, the soldier is the centerpiece. However, the present study focused on the civilian employee sector of the Army in Wiesbaden, Germany. The study examined two of the Army's approaches to managing civilian employees' physical health: The use of the fitness facility and the CFP. This study, thus, aimed at exploring and understanding the underutilization of said resources by civilian employees.

In support of its operations, the Army employs over 10,038 civilians in Wiesbaden, Germany, and these civilians, like any other American employees, are vulnerable to OORD (Personal communication by: Kaufman, April 1, 2004; King, April 1, 2004; Martin, February 25, 2004; Quezalda, March 22, 2004; Woods, February 26, 2004). The health of these civilians is a management issue of considerable concern for the Army because it is responsible for paying their health care costs. The Army is aware that physical activity is essential to maintaining health, but it seems unable to make civilian health maintenance a condition of employment (Penedia, personal communication, December 5, 2002).

The CFP was, therefore, implemented to induce workers to become more physically active. The CFP is an employee benefit, limited to a single 6-month period, and not renewable. The procedures of the program are as follows: First, the participants go to a preannounced enrollment site, where they get their basic physical health assessment to inform them of their current physiological status. Then, they are authorized to take off 1 hour per day for 3 days each week to participate in physical activities at the gym. The participants are not given a specific exercise program; however, at the conclusion of the 6-month time frame, they are reassessed to determine their progress (U.S. Department of the Army Message, 1996, p. 1). Only the 7,800 General Staff employees are

eligible to participate in the CFP (Army Regulation 600-63). Currently it is estimated that only .128% of the staff utilize the program (Personal communication by: Martin, February 25, 2004; Penedia, December 5, 2002). However, all 10,038 employees who work for the government at the 221st BSBCWG in Wiesbaden are eligible to use the fitness facility; yet, it is currently estimated that only 12% of these employees are doing so (Personal communication by: Evans, June 1, 2004; Givens, February 4, 2004; Glatten, March 2004; Kaufman, March 17, 2004; King & Quezalda, March 22, 2004; Martin, February 25, 2004; Woods, February 26, 2004). This underutilization represents a big problem for the Army and is the central research problem of this study. It is obviously not enough for the Army to offer programs; it must also find ways to make sure that the programs are being utilized. Otherwise, obesity and ill health will persist, and the wellness programs will only add another layer of wasted time and resources.

Other Health-Promoting Organizations

Dr. Roy J. Shepherd of the University of Toronto noted that "the bottom line for a boss may be whether the program saves money on health care" (quoted in Dreyfuss, 1999, para. 4). He found that employers spend less on health care ($100 to $400 less per year) for

employees who participate in corporate wellness programs, and these employees take fewer sick days (half a day per worker per year) (para. 6). If employers empower their employees to do something as simple as taking several 10-minute walk breaks throughout the day and employees actually participate, lower health care cost goals can easily be achieved, reported Dreyfuss (1999). A study in the May *Journal of Occupational and Environmental Medicine*, the official publication of the American College of Occupational and Environmental Medicine (2004), revealed the benefits of encouraging workers, especially obese workers, to be minimally active:

> Encouraging obese employees to engage in physical activity as little as once or twice a week even if they don't lose weight is an effective way for companies to reduce the costs of health coverage. Led by Feifei Wang, Ph.D., of University of Michigan, a team of researchers examined the relationship between physical activity and healthcare costs in a group of approximately 23,500 healthy General Motors employees. About 30 percent of workers were classified as normal-weight, 45 percent as overweight, and 25 percent as obese. Annual health care costs averaged $2,200 for normal-weight, $2,400 for overweight, and $2,700 for obese employees. Twenty-one percent of workers were classified as sedentary, with no regular physical activity. In the sedentary group, average healthcare costs were $2,300 for normal-weight, $2,500 for overweight, and $3,000 for obese workers. For obese workers, being physically active lowered health care costs by $400 to $500, after adjustment for age, sex, and health-related factors. The savings were similar for workers classified as moderately active, with one or two days of physical activity per week; or very active, three or more days per week. Physical activity was defined as at least 20 minutes of exercise or work hard enough to increase heart rate and breathing. Physical activity lowered costs for most categories of health problems. Based on their results, the researchers estimated that increasing levels of physical activity for sedentary obese workers would have saved about $790,000 or about 1.5 percent of healthcare costs for

> the whole group of 23,500 workers. Company-wide, the potential savings were estimated at $7.1 million per year. (para. 1-4)

Although the subject of this study, the 221st BSBCWG, does not have a profit margin in the ordinary sense to worry about, employee health care costs exert a mighty influence on the bottom line in terms of tax dollars, and the stakeholders are the American people (Finkestein, 2003, May). The Army has two major promotions for civilians to improve their health: The first is the CFP, and the second is the fitness facility. Both programs are underutilized by the civilian employees (Army Regulation 600-63; personal communication by: Evans, June 1, 2004; Givens, February 2004; Martin, February 25, 2004; Penedia, December 5, 2002).

The Coca-Cola Corporation found that employees who participated at FCs averaged $500 less per year in health care costs than employees who did not participate. This represents a savings of $1.2 million a year for the corporate headquarters in Atlanta alone (McShane & von Glinlow, 2000). Another study published in *The Physician and Sports Medicine* found that body fat fell an average of 13% when employees participated in a corporate wellness program (cited in Dreyfuss, 1999).

Cartwright (2000) gave the following example of another organization that is striving to promote health:

> British United Provident Association Ltd. (BUPA), the United Kingdom's leading independent health company, approaches the health care of its own employees by ensuring that their employees have access to all the components of quality health care. This includes providing access to a private health care plan, an employee assistance program, and annual health screening checks. In addition, employees are offered access to gym facilities and healthy low-fat menus inside the organization. The organization believes it is vital for their staff to take holidays to maintain a healthy workforce and have recently introduced a scheme whereby employees have the option to buy an extra five days' holiday over and above their annual entitlement. BUPA's commitment to develop and maintain a healthy workforce in the widest sense—both physically and psychologically—is impressive. The organization believes that it is important that their employees are job-satisfied and enjoy working for the company. The organization pays a lot of attention to creating a pleasant physical working environment and developing a positive and supportive management style. (p. 14)

Employee health can be improved even if organizations do not have a FC. For example, employees can walk outside or in place by their desks, go up and down the stairs, and perform strength-training exercises throughout their workday. Even small, nonphysical activity changes, such as introducing elements of feng shui, are being added by organizations to reduce stress and improve health. Goodall (2001) explained,

> Feng Shui is an ancient practice of an interpretive framework used by practitioners to channel positive energies into and through various environments, therefore altering or changing an individual's fortunes. It is a philosophy of arranging a living environment where . . . energies are in complete harmonious balance. (p. 7)

Feng shui fits under the broad category of wellness because it has positive effects on stress and is a valid alternative therapy for increasing the wellness of workers. It is not uncommon today to walk into an organization and find changes, such as the addition of fountains, plants, and open-air spaces, as well as the rearrangement of furniture and color scheme changes in a room ("Fundamentals of Feng Shui," 1999; Goodall, 2001; Hamilton, 1999). Feng shui can be grouped with other alternative therapies, such as acupuncture, biofeedback, chiropractic care, herbal medicine, hypnosis, meditation, and therapeutic massage, all of which are increasingly becoming one of the passive means of maintaining health (Gaedeke, Tootelian, & Holst, 1999, pp. 29-31). In addition, feng shui and other health improvement initiatives can be economical and effective for both small and large organizations. However, the operative word in all of these examples is *participation*. While the investments in health and wellness programs by organizations are commendable, society as a whole cannot claim to be effective in a grand sense (Clarke cited in Myers, 1999).

It may appear that, because the Army and other organizations are implementing wellness programs, their employees' health is about to improve. However, the key is participation. If employers cannot motivate their employees to participate, neither health benefits nor financial

benefits will be realized. Researchers would find it helpful, indeed, if organizations who offer fitness/wellness programs, published information regarding the portion of employees who actually exercise out of the total number of employees. Only with these kinds of data could researchers arrive at a complete picture of the effectiveness of employer-sponsored programs.

External and Internal Barriers to Maintaining One's Health

As previously indicated, a review of the literature gave no hint of unsuccessful organizational wellness programs. Instead, the available research reads more like a promotional campaign for implementing health within organizations. While this researcher, in her capacity as a certified personal trainer in military communities for over 10 years, holds a positive view of the implementation of wellness centers by organizations, she became acutely aware that the literature is far from presenting an accurate picture of wellness in the workplace.

This study was undertaken in order to shed some light on an organization that has implemented two fine programs and provided its employees with easy access, free of charge; yet, it failed to achieve the expected utilization of these programs and good health among its employees. The Army, actually, faces fewer problems than many

organizations in combating poor health within the organization because the Army already has FCs and sports programs in place to which the civilian employee population has access. However, the Army—just as any other organization that implements a wellness program—must be concerned with two important measures of success: employee participation and health improvement. If employees do not participate, organizations will continue to lose money through high health care costs, low productivity, and now the additional waste of resources through underutilized staffing and implementation of a wellness program.

Some reasons are readily apparent why the Army is facing challenges in regard to civilian employee participation in the wellness programs offered: (a) a lack of timely information about the wellness programs being marketed to civilians, (b) a lack of health improvement programs designed specifically for civilians, (c) a lack of leadership commitment and support in allowing employees time off for exercise (in the sense of the afore-mentioned transactional versus transformational leadership style). Internally, one of the major challenges that the Army must face in terms of promoting the health of civilian employees is convincing these employees to take personal responsibility for maintaining and improving their health. The Army is a multicultural, multiage, and mixed-gender environment; therefore, it must contend

with a wide variety of family and cultural backgrounds and their implications, as discussed in the section on Bandura's (1977, 1986) social learning theory. Some social or cultural aspects within the Army community may, in effect, be counterproductive with respect to health maintenance. Motivational factors, as discussed in the section on Maslow's (1970) hierarchy of needs and motivation theory, may add to the challenge as well.

Section 4: Relevance and Need for the Study

First, this section focuses on the responsibility for and measures taken by business organizations to alleviating work-related stress in their employees. Next, it notes a dearth of studies that focus on employees who do *not* utilize employer-sponsored wellness programs (as opposed to studies touting the successes of gyms and those who use them). Last, it explains the need for this study in view of inactivity as a major cause of poor employee health, the high cost of poor employee health for businesses and tax payers, and finding possible management solutions to countermand underutilization of employer-sponsored wellness programs.

Workplace Wellness and Methodology Rationale

This study took aim at the notion that corporations must do their part in promoting employee health because they are placing a great deal of stress on their workers, which, in turn, contributes to the obesity problem with its health risks and high health care costs. Hensel (2000) stated, "Companies have to deliver; they need to be in touch with employees" (p. 20). Because of the many pressures employees experience at work, they will inevitably suffer burnout during their day. Moreover, this burnout, or stress syndrome, has adverse effects on the employees' work performance, often to the extent of curtailing their ability to come to work, and companies pay the price via health care costs. Hensel noted:

> Without proper attention to burnout, an employee will leave the company and not look back, no matter how great the benefits. . . . Signs of burnout include employees who no longer laugh or have fun at work, employees who are irritable toward co-workers or customers, employees who always see work as a chore, frequent worrying by employees, and employees who feel lethargic or empty at work. Employers must create an atmosphere that promotes employee health. That is, do something for your employees that will get their minds off of the job and back to feeling fresh when they do return to work. (p. 20)

If participating in an exercise program can relieve employee stress and burnout, it stands to reason that employers should ask the next important question: How much money can the organization save once the program is implemented? Companies are hesitant about getting involved in and spending money for health promotion initiatives because

they are, after all, in the business to make a profit, and profit is also what shareholders are concerned about.

However, as stated earlier, profit margins are already reduced by higher health care costs, lower productivity, and increased employee absenteeism—all of which could be countermanded with the adoption of a healthful lifestyle by workers. Parry and Lacy (2000) stated that "meeting shareholder demands, in many instances, requires a workplace culture that motivates and enables employees to stay healthy and be productive at work" (p. 52). However, a justified question in this context is: To what extent and to what lengths can an employer be reasonably expected to go to encourage employees to participate?

An exhaustive search of the literature produced no wellness studies undertaken from the stance adopted in this study, which asked: What is the precise level of utilization (or nonutilization) of physical fitness programs by adults in American society, or to be precise, by the sample that works at USA221st BSBWG, in Wiesbaden, Germany for the United States Army? Even the Army's statistics are only estimates because it has not looked into the issue of civilian fitness in terms of the avoidance of wellness programs.

While the next chapter will present the research methods for answering this question in detail, it could be stated in general terms that

the case study approach was chosen to explore what level of exercise participation was, actually, achieved by the civilian employee community of Wiesbaden, Germany, and what barriers might stand in the way of full participation. The case method seemed to be the most appropriate way to find the answers to this question, considering that the literature did not reveal this kind of information for either the Army or other American corporations.

When considering the various angles for approaching data collection for this study, no quantitative accounts by organizations were found regarding what proportion of employees are overweight or obese. Articles extolling the successes of organizational wellness centers did not say how many employees were successful, were signed up for the program, or participated on a regular basis; nor was the proportion of participants in organizational wellness centers reported with respect to the total number of employees. Minimal data were open for inspection on America's expenditures in health care costs and the sources for funding. With respect to the Army, no numbers were made available as to how much the Army spends annually on civilian employees' health care costs. Yet, a great deal of general writing was available on the level of stress among Americans, their poor health status, and their lack of exercise.

When the literature yielded no specifics about the phenomenon of underutilization of physical activity resources, the researcher proceeded to ask health and fitness professionals who are employed in various capacities in American companies or military organizations regarding employee participation in fitness/wellness programs. Representative of their collective observations and opinions are these words by Training Specialist for Adult Sports and Fitness at the MWR Training Center, Larry McNoun, "FCs just sit there and hardly any civilians use them. To make such a change as getting civilians to exercise will take tremendous support from the top of the organization and some real incentives" (Personal communication, August 19, 2003). The lack of physical activity and ensuing poor health of American workers, the steadily climbing health care costs, which are paid either by the tax payer or through employee health insurance; and the losses in workplace productivity are the important reasons for which this study was undertaken.

Lack of Physical Activity as Justification for the Study

The seriousness of the lack of physical activity and the health problems associated with a sedentary lifestyle—obesity and obesity-related diseases—has, in the words of Secretary of Health and Human Services Thommy G. Thompson (quoted in CDC, 2004, January 21),

"become a crucial health problem for our nation." Even with 40% of Americans reporting that they have the right amount of leisure time, they still are not generally using much of this time to exercise (IHRSA, 2003). The CDC (2004) stated that, despite the proven benefits of physical activity, more than 50% of American adults do not get enough physical activity to provide health benefits, and 25% of American adults are not active at all in their leisure time.

Health Care Costs and Loss in Productivity as Justification for the Study

Physically inactive people leave themselves vulnerable to obesity and obesity-related diseases (CDC, 2001b, January 15, 16; CDC, 2004). With heart disease being the Number 1 killer in America and diabetes among the top 10, it is reasonable for researchers and others to find ways to motivate people to become active (CDC, 2004, January 21).

A study performed by the American College of Occupational and Environmental Medicine (ACOEM, 2004) found that "employees' levels of physical fitness and activity significantly affect the quality and quantity of work performed." Researchers analyzed health and lifestyle factors in 683 workers in various occupations completing a health risk assessment. Levels of physical activity, estimated physical fitness, and obesity were compared with indicators of job performance, as rated by the workers

themselves. The workers' physical activity and physical fitness had a significant impact on their work performance. More physically active workers reported higher work quality and better overall job performance. As physical fitness increased, so did the quantity of work performed. In addition, more fit workers needed to expend less extra effort to do their work. Obesity had a significant but negative impact on work. Twenty-two percent of workers in the study were classified as obese, and 4.5 percent as severely obese. Obese employees reported more difficulty getting along with coworkers, while severely obese workers missed significantly more days of work. Physical inactivity and obesity have well-known negative effects on health and health care costs. "Poor health obviously leads to increased health costs because of absences from work. . . . Lifestyle-related modifiable health risk factors significantly impact employee work performance," concluded Pronk et al. (ACOEM, 2004, para. 2-4).

Obesity, for the most part, is a self-imposed health condition; it would be less of a societal concern if it were not for the fact that tax payers are shouldering the bill for upwards of $37 billion in annual medical expenses for obese and overweight people (Anderson, 2002; CDC, 2004, January 16). Not only are the tax payers paying for the (preventable) health negligence of obese and overweight persons, but American organizations are also incurring costs and losses via employee

health insurance, reduced productivity, and futile investments in wellness programs are being underutilized (Barrett, 2004; Hummer, 2002; Stahl, 1991). With losses in workplace productivity that purportedly consume as much as 50% of organizational profits, decision makers need to investigate why their employees are not productive (Parry & Lacy, 2000, p. 53). Physical wellness programs may play a major role in workplace productivity (Dreyfuss, 1999). If employees are aware that their employer cares about their well-being, they may exhibit greater loyalty to the company and, thereby, achieve greater productivity.[3] These challenges and the seeming inability of organizations, governmental as well as private, to motivate their employees to participate in wellness programs in the workplace made this study both necessary and timely.

As mentioned before, the existing literature expresses an awareness of the need for wellness programs in the workplace; however, it does not address the pervasive problem of minimal employee participation in such programs when they are offered. This study went beyond mere awareness of the need for such programs and attempted, first, to determine the extent to which such programs are underutilized

[3] As Gill, DiPietro, and Krumholz (2000) noted, "the benefits of physical activity and exercise . . . [are] becoming increasingly clear" (p. 343). However, it must be stated that past and current research indicates that employee health is not a panacea for making employees happy at work. In fact, the World at Work (2002) organization, formerly known as the American Compensation Association, reported that "there is no magic potion—no single type of reward—that is overwhelmingly important in satisfying and

and, second, to find possible explanations and remedies of a managerial nature to correct the present situation and encourage employees to fully participate in an employer-sponsored program in the U.S. Army.

Summary

Organizations must manage the issue of employee wellness in ways that encourage employee participation and yield health benefits. Health club memberships and program offerings can no longer be the sole measurement of success. By setting clear operational procedures via transactional leadership, coupled with transformational and motivational leadership, employers might be able to help an organization's employees change from an unhealthful to a healthful lifestyle. Creative initiatives could be the impetus to produce a paradigm shift and countermand America's societal obesity (Huff & Kline, 1999). Among the reasons for promoting a healthier society is the steadily increasing number of obese and overweight Americans, coupled with the health care costs necessitated by these people. However, not all reasons are known why individuals maintain poor health habits, which limit their capabilities and may ultimately shorten their lives. While some American organizations, including the U.S. Army, are trying to combat workplace

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motivating employees, or in retaining them." This study investigated employees' physical wellness as one aspect of work happiness.

and societal obesity by implementing physical wellness programs, a review of pertinent literature and consultation with fitness experts has revealed that, while America seems to be moving in the right direction, its citizens have a long way to go before they will have recovered from decades of self-imposed health problems.

The Army and the military forces have repeatedly demonstrated that they can be an effective tool for social change (e.g., racial integration and gender equality). By implementing an effective wellness program, the Army could, once again, take the lead and bring about a change of attitude in its civilian employees with respect to health and well-being, and by extension, society as a whole could be the beneficiary.

This chapter reviewed pertinent literature about the wellness status of civilian employees and theoretical perspectives related to necessary attitudinal changes in the pursuit of wellness. It described the seriousness of the obesity problem in America and current efforts by organizations to promote wellness in the workplace. Chapter 3 will describe the research methods used in the study, including research approach, population and sample, research question and instrumentation, validity and reliability, and data collection and analysis.

CHAPTER 3

RESEARCH METHODS

Introduction

The purpose of this case study was to explore the underutilization of a Civilian Fitness Program (CFP) and Fitness Facility (FF), which the United States Army offers free of charge to its civilian workers at the United States Army 221st Base Support Battalion Community in Wiesbaden, Germany (USA221st BSBWG). This purpose was twofold: First, the research sought to identify associations between exercise participation and employment groups to determine if barriers against exercising were imposed by the individual, management, or both. Second, it was conceived as a potential pilot study should the Army wish to follow up with a larger research project. The reason behind this study was that, in spite of employer-sponsored programs and access to these programs, fitness/wellness professional observations indicated that many civilians who work for the Army were not utilizing the programs. This had become a management problem that needed to be addressed because it is impacting the Army's mission capability and places a severe financial strain on the Army's budget, in the same way that this issue is affecting other American business organizations (Dunnagan, Haynes, & Smith, 2001).

Research Approach

The research problem was approached from two directions at the (USA221st BSBWG). The first line of research sought to discover which, if any, associations existed between employee groups and variables connected with fitness; for example, between a certain employment group and participation in the (CFP) or the utilization of the (FF) at the USA221st BSBWG. The second line of research sought to reveal if any barriers against participation in these fitness opportunities were being erected either by the individuals themselves or by management or both; for example, whether the type of employment or work presented obstacles and to what extent bosses were supportive of employer-sponsored fitness/wellness programs.

Based on the premise that physical wellness is essential to workplace success (Sherman, 1990), data were collected from a sample and "organized into a form that gives it coherence" (Leedy & Ormrod, 2001, p. 101). To determine levels of association, Chi-square analysis was conducted. The situation studied at USA221st BSBWG is presented in narrative and tabular form (chapter 4), and with the results of the data analysis, the research questions are answered (chapter 5). It was hoped that decision makers would be able to profit from the results of the study

and its historical, archival, and exploratory information concerning utilization of the fitness facility and the CFP by civilian employees at the USA221st BSBWG.

The results of the study are not limited the USA221st BSBWG, but could potentially have an impact in the following areas:

1. In society at large because obesity is a serious problem in America, especially within the working population (NCHS, 2002a, 2002b, 2002c; NCCDPHP, 2002);

2. With employers because people who exercise within the workplace and throughout society have, generally, lower health care costs, better performance and productivity, less turnover, and fewer filings for workman's compensation (CDC. 2004; Research Triangle Institute, 2004);

3. With employees because if one improves one's physical health status, one can sustain physiological life as well as quality of life in one's family, workplace, and other social networks (CDC, 2003, March 3; CDC, 2004, Jan 15; CDC, 2004, Jan, 16); and

4. With the military because by knowing if their civilian employees are utilizing resources, they can adjust or maintain programming to ensure that resources are being maximized (Office of Chief of Public

Affairs, 2003, p. 6; William Burgess, personal communication, September 25, 2003).

This study sought to identify associations between employment groups and physical activities and whether barriers to physical exercise are being created from the side of either management or individuals. Permission to conduct this research was granted (Appendix F) by base commanders (Lieutenant Colonel Christopher Frank, personal communication, February 2, 2004; Colonel Russell Santala, personal communication, Dec 6, 2002; Lieutenant Colonel Dennis Slagter, personal communication, November 29, 2002).

Population

Participants in this case study were selected from a population of 10,038 civilian employees who work for the USA221st BSBWG. The USA221st BSBWG provides for its civilian employee a fitness facility as well as a CFP. This study sought to identify factors that contribute to the utilization of the fitness facility and the CFP.

Therefore, the researcher—with dissertation committee approval—aimed at collecting at least 100 completed surveys from among the 10,038 civilian employees in the USA221st BSBWG community. Fortunately, the response was better then expected and 208 usable

surveys were gathered for the study. The sample consisted of civilian employees who were available to complete the survey at the time of data collection. The following criteria obtained for participation in the study. Participants had to be (a) U.S. citizens, (B) civilian employees of the U.S. Army, (c)18 years or older, and (d) currently employed at the USA221st BSBWG. The sample was stratified by employment category (e.g., Appropriated Fund, Nonappropriated Fund, and Contract Employees), and gender.

Methodology

This case study involved an exploratory analysis of factors contributing to wellness in the workplace. According to Babbie (1998), a case study is an idiographic examination of a single individual, group, or society. Its chief purpose is description, although attempts at explanation are acceptable (p. 282). This study focused on the Army's approaches to a CFP and the provision of a fitness facility at the USA221st BSBWG. It also examined the associations, if any, among Employment Category and fitness-related variables, as well as the kind and number of identified barriers to physical activity and exercise.

An exploratory case study design was chosen for this research, in part, because few studies were exploring civilian wellness at U.S. Army

bases in Europe. Moreover, archived data are minimal and yielded little in the way of indicators why civilian employees of the military community are or are not physically active. Thus, most of the data were obtained through anonymous self-reports and self-administered surveys of the current civilian employee population.

Data collected from all sources were both qualitative and quantitative in nature. According to Leedy and Ormrod (2001), "qualitative research focuses on the complexities of the phenomenon as it occurs in its natural setting" (p. 147). Both self-reports and direct observations yielded primarily qualitative data. However, quantitative aspects (e.g., the number of responses to certain questions) were included in the analysis to enhance its explanatory power. Quantitative research was used to answer questions about relationships among measurable variables with the purpose of explaining, predicting, and controlling phenomena (Leedy & Ormrod, 2001, p. 101).

Qualitative research is typically used to answer questions about the complex nature of a phenomenon, often with the purpose of describing and understanding it from the participants' points of view. Qualitative researchers frequently start with general research questions rather than a specific hypothesis, collect extensive narrative data from a small number of participants, organize these data into a form that gives

them coherence, and finally use verbal descriptions to portray the situation studied (Leedy & Ormrod, 2001). As Leedy & Ormrod (2001) pointed out, "Tentative answers are not uncommon in a qualitative study. A qualitative study is likely to end with tentative answers or a hypothesis about what was observed. This tentative hypothesis may form the basis for future study (perhaps quantitative in nature) designed to test the proposed hypothesis" (p.101). The qualitative aspects of this study were derived form the quantified responses that the researcher organized in a coherent fashion to provide in-depth explanatory power.

By working and interacting within the research environment, as described by True (1989, p. 2), the researcher discovered—through direct observation and experience—explanations about how civilian employees in the Army participate in the CFP and the fitness facility. This field work has empowered the researcher to tap into the subtle nuances of attitudes and behaviors that can best be understood in their natural settings and not very well articulated with archival research (Babbie, 1998, p. 283).

The research questions could be answered with the responses gleaned from the questionnaires. This approach captured information about employment, facilities, and barriers to physical activity within the population. This process was expected to provide an enriched understanding of the phenomenon, as pointed out by True (1989).

Two Lines of Research

This study was guided by two lines of research: The first line of research investigated possible associations between the Employment Category and variables related to fitness, such as facilities, fitness behavior, and types of barriers. *Employment Category* is defined in detail by civilian employee groups at the USA221st BSBWG: Appropriated Funded (AF), Nonappropriated Funded (NAF), and Government Contracted (GC); as such, they represents factors, or independent (grouping) variables. The second line of research investigated possible associations between the number and kind of discovered barriers and employment-related variables, among the latter Employment Category, work type, and supportiveness of the boss.

A systematic and precise conceptual distinction between individual barrier and management barrier was not without problems (Appendix D) because an individual barrier was often also a management barrier. Such problems could readily be anticipated: Summing the barriers would invariably lead to a multiple counting of cases. Thus, the barriers did not lend themselves to the formulation of distinct research questions. The number of barriers, independent of type, had to be computed and applied as a grouping variable.

Number of Barriers is in detail defined by the sum of stated barriers divided into four approximately same-size groups with the categories 0 (*no barriers*), 1 (*one barrier*), 2 (*two barriers*), and 3 to 10 (*three barriers* to *10 barriers*). Thus, the variable *Number of Barriers* represents a factor. It should be noted that, in the first line of research, *Employment Category* is used as an independent variable; in the second line of research, it is used as a response variable. The statistical questions are listed in detail following the section on Instrumentation, which will be discussed next.

Instrumentation

The questionnaire (Appendix C) was used to assess whether civilian employees at the USA221st BSBWG community utilize the CFP, the fitness facility, or both. Further, the survey sought to identify personal and management barriers that might be having an effect on participation in physical activity by the civilian employee. The questionnaire questions were developed to determine seven major categories about the respondents, as shown in Table 1.

A number of questions had to be included in the survey instrument at the behest of the management of the USABWG FC; but, for the purpose of this study, questions 7b, 9, 15b, 17, and 20 produced the main data linked to the research questions. Questions 10, 13, and 14

were included in the survey at the request of the management of the FC at USABWG to determine what type of usage the center was registering (Personal communication by: Chenault, March 17, 2003; Dale, January 21, 2003; Ringgold, April 14, 2003).

Table 1

Background Information About Respondents

Thematic Information Needed About Respondents	Corresponding Number of Survey Question
(a) general demographic information (e.g., age, occupation)	1 & 5
(b) health status	2 & 3
(c) basic information about the respondent's available time and work time	6 & 19
(d) the effectiveness of the program(s)	8, 9, 10, & 15
(e) possible personal or managerial barriers	9, 14e, 17, & 20
(f) perceived importance of physical fitness activities	7, 8, 9, 11, & 12
(g) the perceived supportiveness of leaders at the USABWG	21 & 24

Because the researcher had the luxury and the privilege of surveying a captive audience, she attempted to gather as much

information about the topic as possible with the intent of archiving the extra data and using it for future evaluations. Lastly, the questionnaire was designed to be relatively inconspicuous, and it was administered in an unobtrusive manner (Schutler, 1998). The research questions are discussed in the following section.

Research Questions

The first line of research was concerned with possible associations between type of employment and fitness-related variables, such as facilities, fitness behavior, and type of barriers against participation in fitness/wellness programs. It is good research practice to list every single research hypothesis that is to be tested. Therefore, under each line of research, there are subcategories of questions that provide further insight. The word *are* is used at the beginning of each variable comparison to present the subquestions of the research, asking if variables A and B are intercorrelated. Table 2 shows the question/ statement pairs that were statistically investigated.

Table 2

First Line of Research: Comparison of Subquestions

SUBQUESTION	VARIABLE COMPARISON (i.e., ARE Variables A and B intercorrelated?)
1	Are "If you do exercise, where do you exercise?" and Employment Category related?
2	Are "Have you ever used the CFP?" and Employment Category related?
3	Are "Are you aware of the CFP?" and Employment Category related?
4	Are "Hours of operation" and Employment Category related?
5	Are "Reliability" and Employment Category related?
6	Are "Types of programs" and Employment Category related?
7	Are "Physically uncomfortable" and Employment Category related?
8	Are "Socially uncomfortable" and Employment Category related?
9	Are "Staff" and Employment Category related?
10	Are "Poor facility maintenance" and Employment Category related?
11	Are "Don't like exercising" and Employment Category related?
12	Are "Don't have the time" and Employment Category related?
13	Are "I'm happy with the way I look" and Employment category related?
14	Are "Bad experience" and Employment Category related?
15	Are "I'd rather diet" and Employment Category related?
16	Are "I'd rather take supplements" and Employment Category related?
17	Are "I'd rather have plastic surgery" and Employment Category related?
18	Are "No one will help me" and Employment Category related?
19	Are "No childcare" and Employment Category related?
20	Are "Attend childcare" and Employment Category related?
21	Are "Pay for childcare" and Employment Category related?
22	Are "Employer allows no exercise during working hours" and Employment Category related?
23	Are "Rate how supportive your boss is in allowing time off" and Employment Category related?
24	Are "How many hours do you work per week?" and Employment Category related?

25	Are "Rate your daily stress" and Employment Category related?

The second line of research was concerned with associations between the number and kind of stated barriers and employment-related variables, such as facilities, fitness behavior, and type of barriers. Table 3 shows the question/statement pairs that were statistically investigated.

Table 3

Second Line of Research: Comparison of Subquestions

SUBQUESTION	VARIABLE COMPARISON (i.e., ARE Variables A and B intercorrelated?)
1	Are Number of Barriers and Employment Category related?
2	Are Number of Barriers and Type of work related?
3	Are Number of Barriers and Gender related?
4	Are Number of Barriers and "How many hours do you work per week?" related?
5	Are Number of Barriers and "Rate how supportive your boss is in allowing time off?" related?
6	Are "Have you ever used the CFP" and Number of Barriers related?
7	Are "Employer allows no exercise during working hours" and Number of Barriers related?
8	Are "Do you exercise more than 2 times per week?" and Number of Barriers related?
9	Are "If you do exercise, where do you exercise?" and Number of Barriers related?
10	Are "Have you ever exercised at your installation's FC?" and Number of Barriers related?
11	Are "Rate your daily stress" and Number of Barriers related?
12	Are Body mass index (BMI) and Number of Barriers related?

Validity and Reliability

The internal validity of a research study is the extent to which its design and the data it yields allow the researcher to draw accurate conclusions about cause and effect and other relationships within the data. Further, it is the extent to which its results apply to situations beyond the study itself; that is, the extent to which conclusions can be generalized to other contexts (Babbie, pp. 103-105). Because the Army generally proceeds systematically, it approaches managing civilian physical wellness in the same systematic manner; thus, the results from the USA221st BSBWG should, at least in part, have Army-wide generalizability.

To determine the validity of the survey instrument, a pilot test was conducted and 29 individuals of both genders, from various professional and ethnic backgrounds and different fitness levels, were asked to critique the questionnaire. They included five individuals from the USA221st BSBWG FC, 11 from upper-level management of various disciplines, two statisticians, five health professionals from various fields, four possible participants in the study, two teenagers, and two editors. The survey also was approved and considered reliable by two commanders, health promotion directors, and legal staff of the USA221st

BSBWG. Based on feedback from the entire group, modifications and changes were made; they included font spacing and the elimination of unnecessary open-ended questions by adding options for respondents to check off in questions 7, 9, 13, 14, and 20. Initially, the survey contained six more questions, but following the suggestions of this group of professionals, redundant questions were eliminated and changes in font size improved readability. The statisticians, editors, fitness facility managers, group-exercise coordinators, and the wellness director reviewed the survey and concurred that the final survey was reliable.

Data Collection Procedures

Data were collected mainly at the respondents' workplaces. In addition, questionnaires were distributed at food courts, shopping centers, and the community's grocery store. Civilian employees were recognizable primarily in their work setting because they do not wear military uniforms. Additionally, the survey clearly asks for the Employment Category in the first question. When the researcher stood in front of the local grocery store, she asked if the potential respondents were civilian employee from the community. When a civilian nonworking family members completed the survey, it was set aside for future study. There were no instances where a soldier had completed the survey.

To ensure anonymity, the surveys were identified by number, not the respondent's name[4]. Only the researcher and her statistician had access to these surveys. The sample, as previously mentioned, was stratified by occupation and gender to be representative of the population. The occupation of the groups will be the only identifiable factor. Data were encoded in an EXCEL file and later transferred and converted to a Statistical Package for the Social Sciences (SPSS ™) file.

The Sample

The sample comprised 208 individuals who were U.S. citizens, 18 years of age or older, and at the time working as civilians (not soldiers) for the USA221st BSBWG. Data collection focused on the following three sources, which allowed for a triangulated design:

1. The first line of insight came from a self–administered questionnaire from employees to find out their exercise habits, their perceptions of workplace support when employees exercise, and their knowledge of available programs.

2. The second line of insight was derived from archived data that had relevance for the current state of the CFP and fitness facility. This included official government documents as well as comments from living

[4] At the conclusion of the study, the signed consent form was attached to each survey, which will provide the researcher with the respondents' names. However, during

archives about the CFP and FC because the organization does not keep many records.

3. The third line of insight was based on the researcher's observations of programs and the community in general with respect to exercise participation and health promotion.

Data collection ceased when the targeted number of surveys had been exceeded. The data provided breadth, rather than depth, of understanding of the associations between employment groups and exercise, as well as employment groups and barriers to participation in wellness/fitness programs (Cooper, 2000).

Data Analysis and Measurement

The quantitative data were tabulated using the SPSS™ v. 12, to include frequencies, percentages, modes, means, and standard deviations. The standard alpha level for this study was set at $p = .05$. The significance of the associations was assessed with the chi-square test, unless otherwise stated. The chi-square procedure tests the null hypothesis, which states that two categorical variables are independent of one anther, or not associated. The test itself is based on a comparison of the so-called expected frequencies with the observed (empirical) frequencies.

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compilation and data analysis, only the numbers assigned to each name were used.

The minimum expected count is one of several conditions for the chi-square test that is being checked during the analysis (Schendera, personal communication, January 21, 2005). If a (too small) sample or an empirical distribution leads to a certain percentage of cells with too few expected counts, the chi-square test may not be valid, and a Fisher test may be more appropriate. However, for exploratory purposes the chi-square test might be considered sufficient and the problem of multiple testing eschewed. The analysis provides charts and tables, ordered according to the measurement level of the investigated variables. Qualitative data, on the other hand, are summarized thematically when appropriate.

CHAPTER 4

RESULTS

The presentation in chapter 4 is divided into three sections. The first section presents the demographic data of the sample. The second section presents the research lines and questions. The third section is a discussion of the results. The sample consisted of 208 civilian employees, who provided data via a survey questioannaire (Appendix C). The statistical computations were performed by a statistics company, and the results were analyzed by the researcher

Demographic Information

Univariate Description

Table 4 summarizes the information about ratio scale variables, such as age, height, and weight. The categorical variables gender, type of work, higher organizations, BMI, and employment category are each presented with separate charts and tables. The average age of the participants was 36 years, the average height was 67 inches, the average weight was 171 pounds. The average number of times people reported exercising was 3 times per week. The average body mass (BMI) was 27.

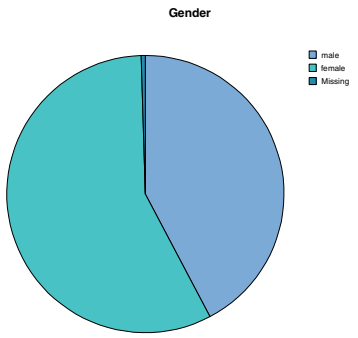
Table 4

Univariate Descriptions

Report

	Age (years)	Height (inches)	Weight (pounds)	How many times do you exercise per week?	Body Mass Index (adults)
Mean	36,95	67,15	171,60	3,13	27,1080
Std. Deviation	11,394	5,287	38,760	1,893	7,67088
Maximum	66	82	290	12	89,20
Minimum	17	39	95	0	15,81
N	201	194	185	99	182

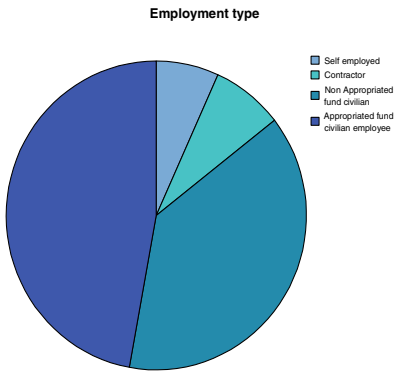
The sample consisted of 88 males and 119 females.



Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	88	42,3	42,5	42,5
	female	119	57,2	57,5	100,0
	Total	207	99,5	100,0	
Missing	System	1	,5		
Total		208	100,0		

Figure 3. Gender of the sample.



Employment type

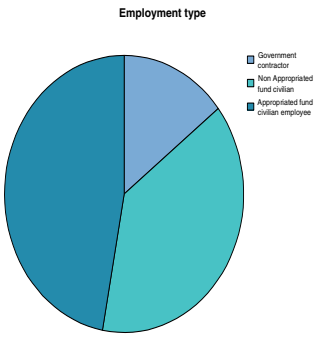
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self employed	14	6,7	6,7	6,7
	Contractor	16	7,7	7,7	14,4
	Non Appropriate fund civilian	80	38,5	38,5	52,9
	Appropriated fun civilian employee	98	47,1	47,1	100,0
	Total	208	100,0	100,0	

Figure 4. Employment before consolidating the groups.

First, the Employment Category is shown before consolidating the groups. The sample total included 208 respondents. Fourteen (6.7%) were self-employed (SE), 16 (7.7%) were government contractors (GC), 80 (38.5%) were Nonappropriated Fund (NAF), and 98 (47.1%) were Appropriated Fund (AF). The SE and GC categories were, subsequently, combined into one category labelled GC for statistical ease. They are combined in subsequent charts.

Second, the Employment Category is shown after consolidating the groups. The remaining

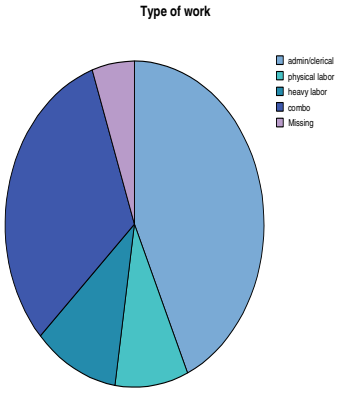
Employment Categories with the following representation in each category: GC 30 (14.4%), NAF 80 (38.5%), and AF 98 (47.1%).



Employment Category

		Frequen	Percen	Valid	Cumulativ Percen
Vali	Government	3	14,	14,	14,
	Non Appropriated civilia	8	38,	38,	52,
	Appropriated civilian	9	47,1	47,	100,
	Tota	20	100,	100,	

Figure 5. Employment Category after consolidating the employment groups.

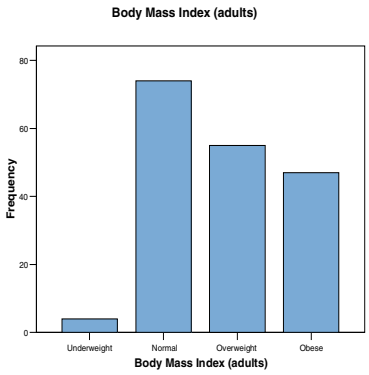


Type of work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	admin/clerical	90	43,3	45,7	45,7
	physical labor	19	9,1	9,6	55,3
	heavy labor	22	10,6	11,2	66,5
	combo	66	31,7	33,5	100,0
	Total	197	94,7	100,0	
Missing	System	11	5,3		
Total		208	100,0		

Figure 6. Type of work.

Ninety respondents (43.3%) of the sample of 208 performed administrative/clerical work, 19 (9.1%) performed physical labor, 22 (10.6%) performed heavy labor, and 66 (31.7%) performed a combination of work.



Body Mass Index (adults)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Underweight	4	1,9	2,2	2,2
	Normal	74	35,6	41,1	43,3
	Overweight	55	26,4	30,6	73,9
	Obese	47	22,6	26,1	100,0
	Total	180	86,5	100,0	
Missing	System	28	13,5		
Total		208	100,0		

Figure 7. Body Mass Index (BMI).

The Body Mass Index indicated that 4 people (2.2%) of the population were underweight, 74 people (41.1%) had normal weight, 55 people (30.6%) were overweight, 47 people (26.1%) were obese. It is important to note the following in reference to BMI:

- Formula for BMI is in pounds and inches
- BMI = Weight [in pounds] X 703 divided by (Height [in inches] X Height [in inches]) *
- Body Mass Index measures weight rather than body fat.
- BMI is a formula that attempts to gauge total body fat and weight-related health risks. However, BMI does not specifically measure body fat; therefore, people with large amounts of muscle tissue may appear overweight even though their risk of weight-related disease is low.

- The higher the BMI, the higher the health risk and the greater the risk of developing additional health problems.
- A BMI of below 18.5 is considered underweight, 18.5-24.9 normal, 25-29.9 overweight, and 30+ obese.

Bivariate Description (with Employment Category)

This section shows cross-tabulations of gender, type of work, higher organizations, and BMI with Employment Category (after consolidating) and adds the result of exploratory chi-square tests.

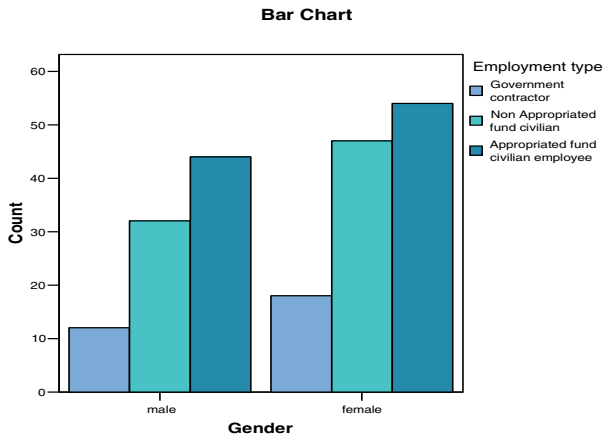


Figure 8. Gender with Employment Category. (*figure continues*)

(Figure 8 continued)

Employment type * Gender Crosstabulation

			Gender		
			male	female	Total
Employment type	Government contractor	Count	12	18	30
		% within Employment type	40,0%	60,0%	100,0%
		% within Gender	13,6%	15,1%	14,5%
		% of Total	5,8%	8,7%	14,5%
	Non Appropriated fund civilian	Count	32	47	79
		% within Employment type	40,5%	59,5%	100,0%
		% within Gender	36,4%	39,5%	38,2%
		% of Total	15,5%	22,7%	38,2%
	Appropriated fund civilian employee	Count	44	54	98
		% within Employment type	44,9%	55,1%	100,0%
		% within Gender	50,0%	45,4%	47,3%
		% of Total	21,3%	26,1%	47,3%
Total		Count	88	119	207
		% within Employment type	42,5%	57,5%	100,0%
		% within Gender	100,0%	100,0%	100,0%
		% of Total	42,5%	57,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,819[a]	2	,244
Likelihood Ratio	3,120	2	,210
Linear-by-Linear Association	1,082	1	,298
N of Valid Cases	111		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 4,54.

Chi-square (p = 0.244, Pearson) indicated that Gender and Employment Category are independent. Gender and Employment Category are not associated. The data meet the conditions for a chi-square test. Within the GC Employment Category, there were 12 male respondents, which represents 5% of total males in the sample. There were 18 female respondents in the GC Employment Category, which represents 8.7% of the total sample. Within the NAF Employment Category, there were 32 male respondents, which represents 15.5% of

total males in the sample. There were 47 female respondents in the NAF Employment Category, which represents 22.7% of the total sample. Within the AF Employment Category, there were 44 male respondents, which represents 21.3% of total males in the sample. There were 54 females respondents in the AF Employment Category, which represents 26.1% of the total sample.

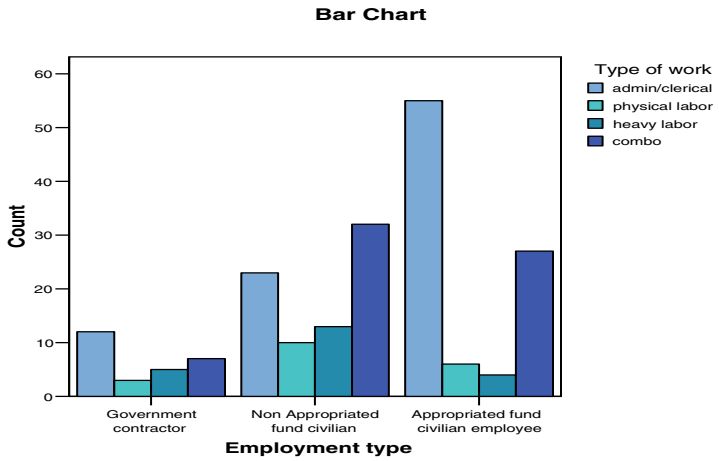


Figure 9. Type of work with Employment Category. (*figure continues*)

(Figure 9 continued)

Employment type * Type of work Crosstabulation

			Type of work				
			admin/clerical	physical labor	heavy labor	combo	Total
Employment type	Government contractor	Count	12	3	5	7	27
		% within Employment type	44,4%	11,1%	18,5%	25,9%	100,0%
		% within Type of work	13,3%	15,8%	22,7%	10,6%	13,7%
		% of Total	6,1%	1,5%	2,5%	3,6%	13,7%
	Non Appropriated fund civilian	Count	23	10	13	32	78
		% within Employment type	29,5%	12,8%	16,7%	41,0%	100,0%
		% within Type of work	25,6%	52,6%	59,1%	48,5%	39,6%
		% of Total	11,7%	5,1%	6,6%	16,2%	39,6%
	Appropriated fund civilian employee	Count	55	6	4	27	92
		% within Employment type	59,8%	6,5%	4,3%	29,3%	100,0%
		% within Type of work	61,1%	31,6%	18,2%	40,9%	46,7%
		% of Total	27,9%	3,0%	2,0%	13,7%	46,7%
Total		Count	90	19	22	66	197
		% within Employment type	45,7%	9,6%	11,2%	33,5%	100,0%
		% within Type of work	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	45,7%	9,6%	11,2%	33,5%	100,0%

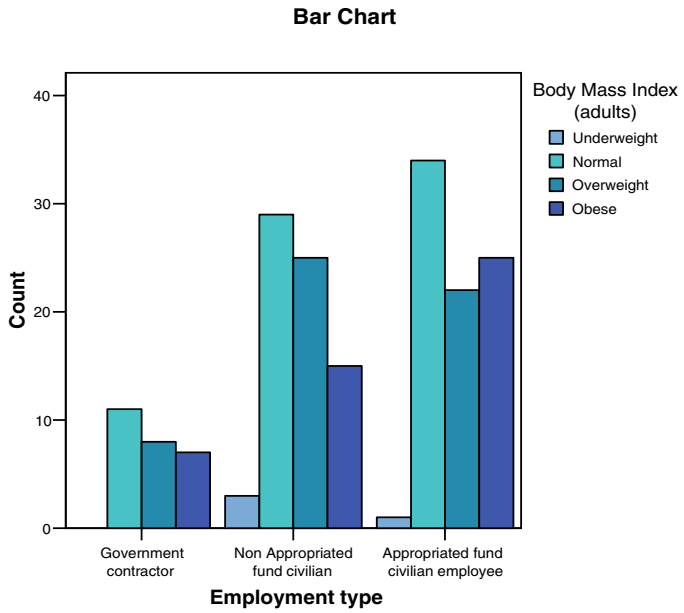
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,801[a]	6	,003
Likelihood Ratio	20,777	6	,002
Linear-by-Linear Association	1,561	1	,212
N of Valid Cases	197		

a. 2 cells (16,7%) have expected count less than 5. The minimum expected count is 2,60.

Chi-square (p = 0.003, Pearson) indicated that type of work and Employment Category are not independent. Type of work and Employment Category are associated. The data met the conditions for a chi-square test. The sample results were distributed in the following quantity/percentages: administrative/clerical GC 12 (6.1%), NAF 23 (11.7%), GS 55 (27.9%); physical labor 7 (3.6%), GC, 10 (5.1%), NAF 10

(.1%), GS 6 (3%); heavy labor, GC 5 (2.5%), NAF 13 (6.6%), GS 4 (2%); combination work, GC 7 (3.6%), NAF 32 (16.2%), GS 27 (13.7%).



Employment type * Body Mass Index (adults) Crosstabulation

			Body Mass Index (adults)				
			Underweight	Normal	Overweight	Obese	Total
Employment type	Government contractor	Count	0	11	8	7	26
		% within Employment type	,0%	42,3%	30,8%	26,9%	100,0%
		% within Body Mass Index (adults)	,0%	14,9%	14,5%	14,9%	14,4%
		% of Total	,0%	6,1%	4,4%	3,9%	14,4%
	Non Appropriated fund civilian	Count	3	29	25	15	72
		% within Employment type	4,2%	40,3%	34,7%	20,8%	100,0%
		% within Body Mass Index (adults)	75,0%	39,2%	45,5%	31,9%	40,0%
		% of Total	1,7%	16,1%	13,9%	8,3%	40,0%
	Appropriated fund civilian employee	Count	1	34	22	25	82
		% within Employment type	1,2%	41,5%	26,8%	30,5%	100,0%
		% within Body Mass Index (adults)	25,0%	45,9%	40,0%	53,2%	45,6%
		% of Total	,6%	18,9%	12,2%	13,9%	45,6%
Total		Count	4	74	55	47	180
		% within Employment type	2,2%	41,1%	30,6%	26,1%	100,0%
		% within Body Mass Index (adults)	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	2,2%	41,1%	30,6%	26,1%	100,0%

Figure 10. BMI with Employment Category. (*figure continues*)

(Figure 10 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,356[a]	6	,629
Likelihood Ratio	4,779	6	,572
Linear-by-Linear Association	,061	1	,805
N of Valid Cases	180		

a. 3 cells (25,0%) have expected count less than 5. The minimum expected count is ,58.

Chi-square (p = 0.629, Pearson) indicated that BMI (adults) and Employment Category are independent. BMI (adults) and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.708.

Government contractors: underweight: 0 (0%), normal, 11 (6.1%), overweight, 8 (4.4%), obese 7 (3.9%). Nonappropriated fund: underweight, 3 (1.7%), normal, 29 (16.1%), overweight 25 (13.9%), obese 15 (8.3%). Appropriated fund: underweight 1 (.6%), normal, 34 (18.9%), overweight 22 (12.2%), obese 25 (13.9%). Of the population, 43.3% were normal or underweight.

Description of Barriers

When looking at the statistic overall, 74 (35.6%) had one barrier, 43 (20.7%) had two barriers, and 28 (13.5%) had three barriers, 16 (7.7%) had four barriers, 3 (1.4%) had five barriers, 1 (.5%) had six barriers, 2 (1%) had seven barriers, and 2 (1%) had nine barriers.

Number of barriers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	39	18,8	18,8	18,8
	1	74	35,6	35,6	54,3
	2	43	20,7	20,7	75,0
	3	28	13,5	13,5	88,5
	4	16	7,7	7,7	96,2
	5	3	1,4	1,4	97,6
	6	1	,5	,5	98,1
	7	2	1,0	1,0	99,0
	9	2	1,0	1,0	100,0
	Total	208	100,0	100,0	

Figure 11. Number of barriers stated.

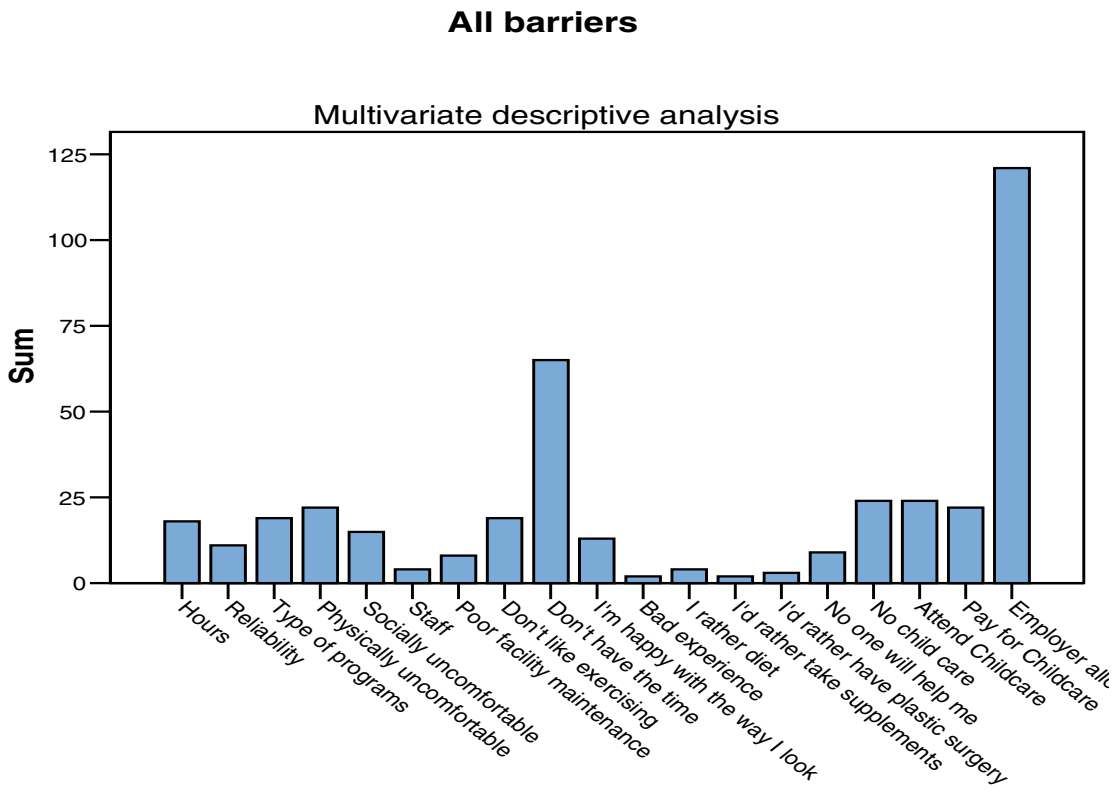


Figure 12. Description of stated barriers.

While Figure 11 showed the number of barriers, the multivariate graph in Figure 12 distinguishes the types of barriers reported and the number of occurrences for each barrier reported. There is no breakdown by employment categories. The number of valid cases was 169, which represents approximately 81% of the total population. This multivariate graph concerning barriers reveals which barriers were most frequently reported (i.e., *Employer allows no time off during working hours for exercise* and *No time to exercise*).

Table 5

Description of Reported Barriers to Exercise

		Responses	
DICHOTOMY LABEL	Question	Number	Percentage
Hours of operation	Q9a	18	4.4
Reliability	Q9b	11	2.7
Type of programs	Q9c	19	4.7
Physically uncomfortable	Q9d1	22	5.4
Socially uncomfortable	Q9d2	15	3.7
Staff	Q9e	4	1.0
Poor facility maintenance	Q9f	8	2.0
Don't like exercising	Q9g	19	4.7
Don't have the time	Q9h	65	16.0
I'm happy with the way I look	Q9i	13	3.2
Bad experience	Q9j	2	.5
I'd rather diet	Q9k	4	1.0
I'd rather take supplement	Q9l	2	.5
I'd rather have plastic surgery	Q9m	3	.7
No one will help me	Q9n	9	2.2
No child care	Q9o	24	5.9
Attend Childcare	Q9p	24	5.9
Pay for Childcare	Q9q	22	5.4
Employer allows no exercise during work	Q17a	121	29.9
Total responses		405	100

Note. Missing cases: 39. Valid cases: 169.

Figure 13 shows the breakdown of reported barriers for government-contractor employees.

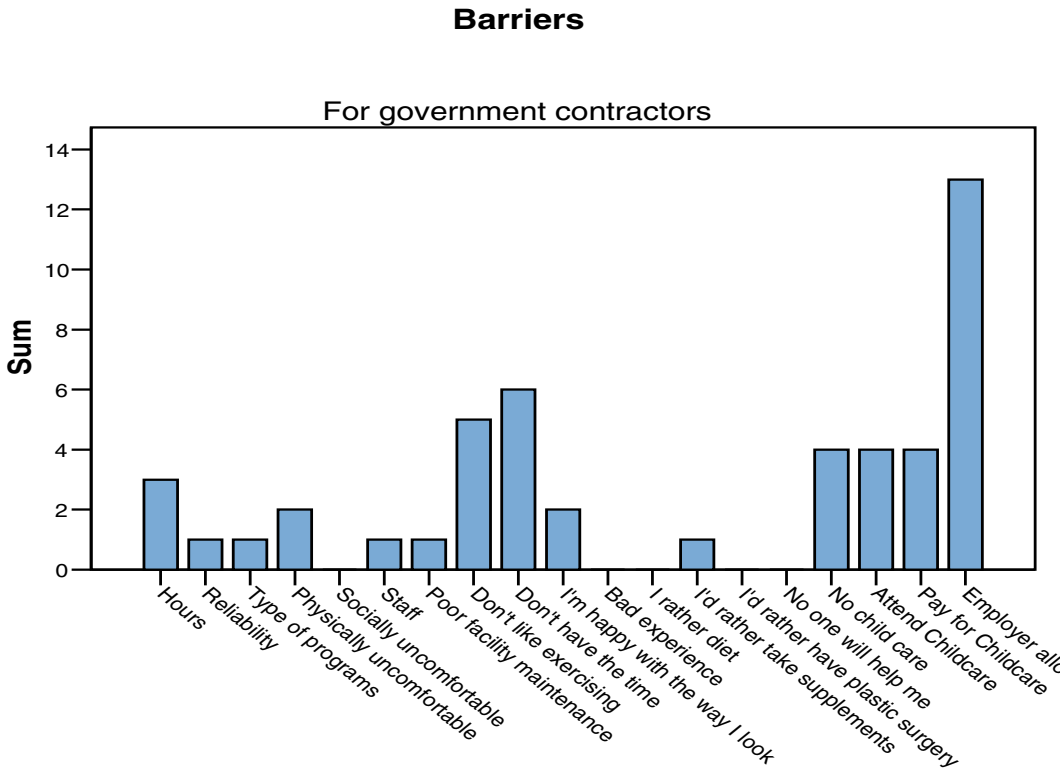


Figure 13. Breakdown for government-contractor (GC) employees.

As shown in Table 6, of the 169 respondents, 22 were GC employees, 27.1 % indicated *Employer not allowing time off to exercise* as a barrier (a management barrier), 12.5% cited *not having the time* as a barrier (a combination management/individual barrier), and 10.4% reported *don't like exercising* as a barrier (an individual barrier).

Table 6

Breakdown for Government-Contractor (GC) Employees (n = 22)

DICHOTOMY LABEL	Question	Number	Percentage of Responses	Percentage of Cases
Hours of operation	Q9a	3	6.3	13.6
Reliability	Q9b	1	2.1	4.5
Type of programs	Q9c	1	2.1	4.5
Physically uncomfortable	Q9d1	2	4.2	9.1
Staff	Q9e	1	2.1	4.5
Poor facility maintenance	Q9f	1	2.1	4.5
Don't like exercising	Q9g	5	10.4	22.7
Don't have the time	Q9h	6	12.5	27.3
I'm happy with the way I look	Q9i	2	4.2	9.1
I'd rather take supplements	Q9l	1	2.1	4.5
No child care	Q9o	4	8.3	18.2
Attend childcare	Q9p	4	8.3	18.2
Pay for childcare	Q9q	4	8.3	18.2
Employer allows no exercise during work	Q17a	13	27.1	59.1
Total responses		48	100	218.2

Note. Missing cases: 8. Valid cases: 22.

Figure 14 shows the breakdown for nonappropriated-fund employees.

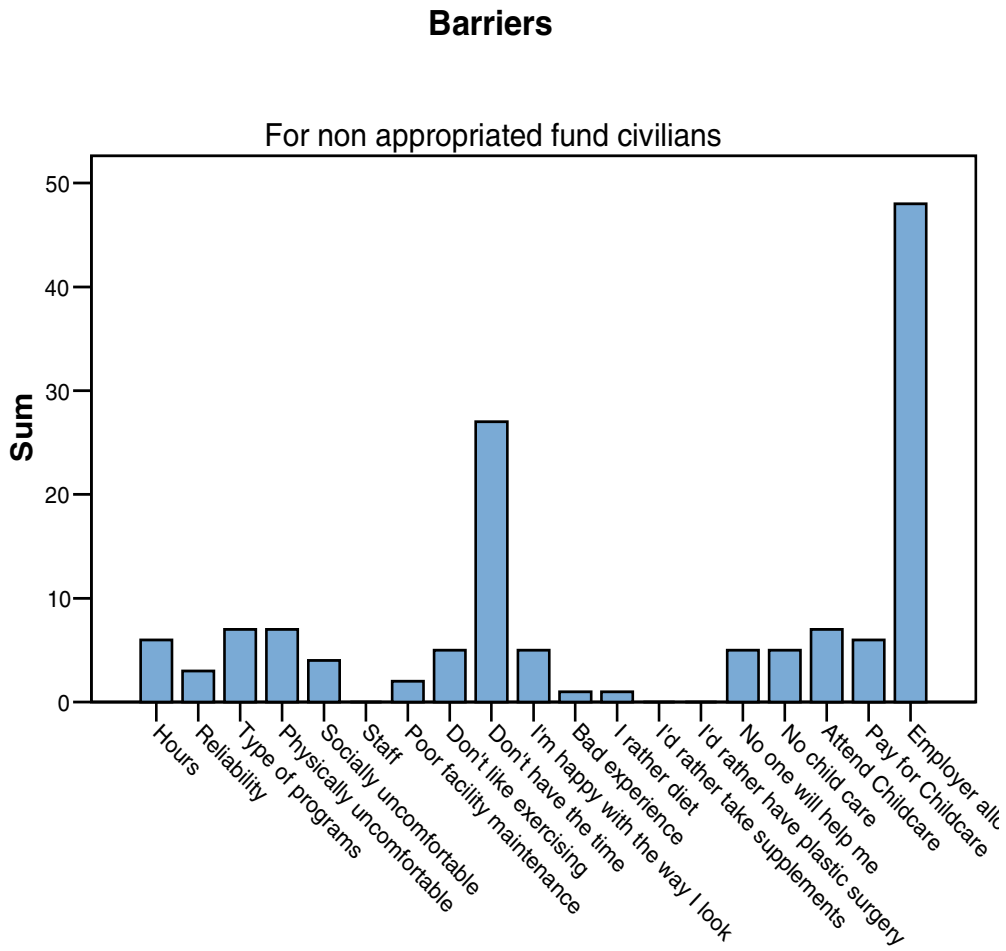


Figure 14. Breakdown for nonappropriated-fund (NAF) employees.

As shown in Table 7, of the 169 respondents, 63 were NAF employees, 34.5% cited *Employers not allowing time off* as a barrier, and 19.4% cited *Not having the time to exercise* as a barrier.

Table 7

Breakdown for Nonappropriated-Fund (NAF) Employees (n = 63)

DICHOTOMY LABEL	Question	Number	Percentage of Responses	Percentage of Cases
Hours of operation	Q9a	6	4.3	9.5
Reliability	Q9b	3	2.2	4.8
Type of programs	Q9c	7	5.0	11.1
Physically uncomfortable	Q9d1	7	5.0	11.1
Socially uncomfortable	Q9d2	4	2.9	6.3
Poor facility maintenance	Q9f	2	1.4	3.2
Don't like exercising	Q9g	5	3.6	7.9
Don't have the time	Q9h	27	19.4	42.9
I'm happy with the way I look	Q9i	5	3.6	7.9
Bad experience	Q9j	1	.7	1.6
I'd rather diet	Q9k	1	.7	1.6
No one will help me	Q9n	5	3.6	7.9
No child care	Q9o	5	3.6	7.9
Attend childcare	Q9p	7	5.0	11.1
Pay for childcare	Q9q	6	4.3	9.5
Employer allows no exercise during working hours	Q17a	48	34.5	76.2
Total responses		139	100	220.6

Note. Missing cases: 17. Valid cases: 63.

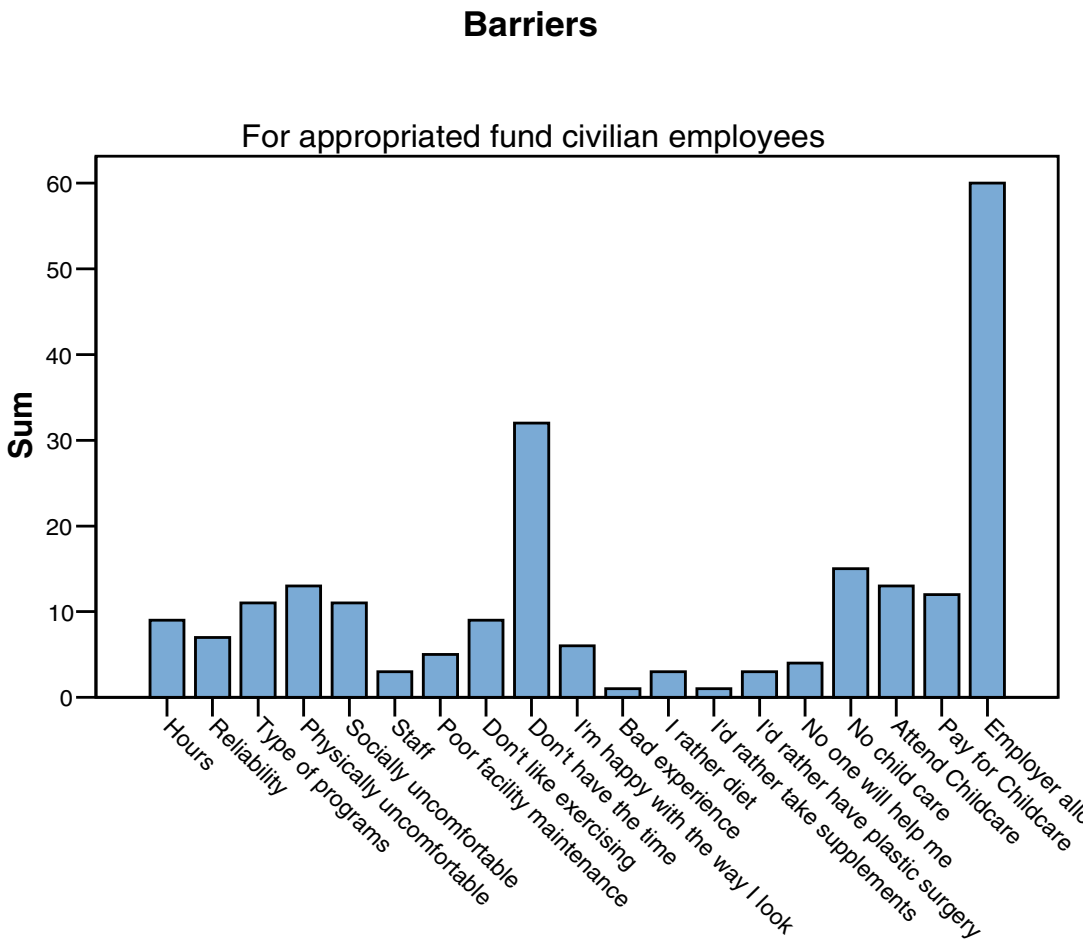


Figure 15. Breakdown for appropriated-fund (AF) employees

As shown in Table 8, of the 169 respondents, 84 were AF employees, 27.5% indicated *Employer not allowing time off to exercise* as a barrier, 14.7% indicated *Not having time to exercise* as a barrier, 6.9% indicated *Not having child care* as a barrier, 6% indicated that they *Would pay if child care were provided,* and 5.5% said that *They would pay for it.*

Table 8

Breakdown for Appropriated-Fund (AF) Employee (n = 84)

DICHOTOMY LABEL	Question	Number	Percentage of Responses	Percentage of Cases
Hours of operation	Q9a	9	4.1	10.7
Reliability	Q9b	7	3.2	8.3
Type of programs	Q9c	11	5.0	13.1
Physically uncomfortable	Q9d1	13	6.0	15.5
Socially uncomfortable	Q9d2	11	5.0	13.1
Staff	Q9e	3	1.4	3.6
Poor facility maintenance	Q9f	5	2.3	6.0
Don't like exercising	Q9g	9	4.1	10.7
Don't have the time	Q9h	32	14.7	38.1
I'm happy with the way I look	Q9i	6	2.8	7.1
Bad experience	Q9j	1	.5	1.2
I'd rather diet	Q9k	3	1.4	3.6
I'd rather take supplements	Q9l	1	.5	1.2
I'd rather have plastic surgery	Q9m	3	1.4	3.6
No one will help me	Q9n	4	1.8	4.8
No child care	Q9o	15	6.9	17.9
Attend Childcare	Q9p	13	6.0	15.5
Pay for Childcare	Q9q	12	5.5	14.3
Employer allows no exercise during work	Q17a	60	27.5	71.4
Total responses		218	100	259.5

Note. Missing cases: 14. Valid cases: 84.

Lines of Research and Respective Questions

In this section are presented Two Lines of Research and their respective questions. They are First Line of Research: Employment Category and Second Line of Research: Number of Barriers.

First Line of Research: Employment Category

Figure 16 shows the correlation of Q1-1: *Are "If you do exercise, where do you exercise?" and Employment Category related?*

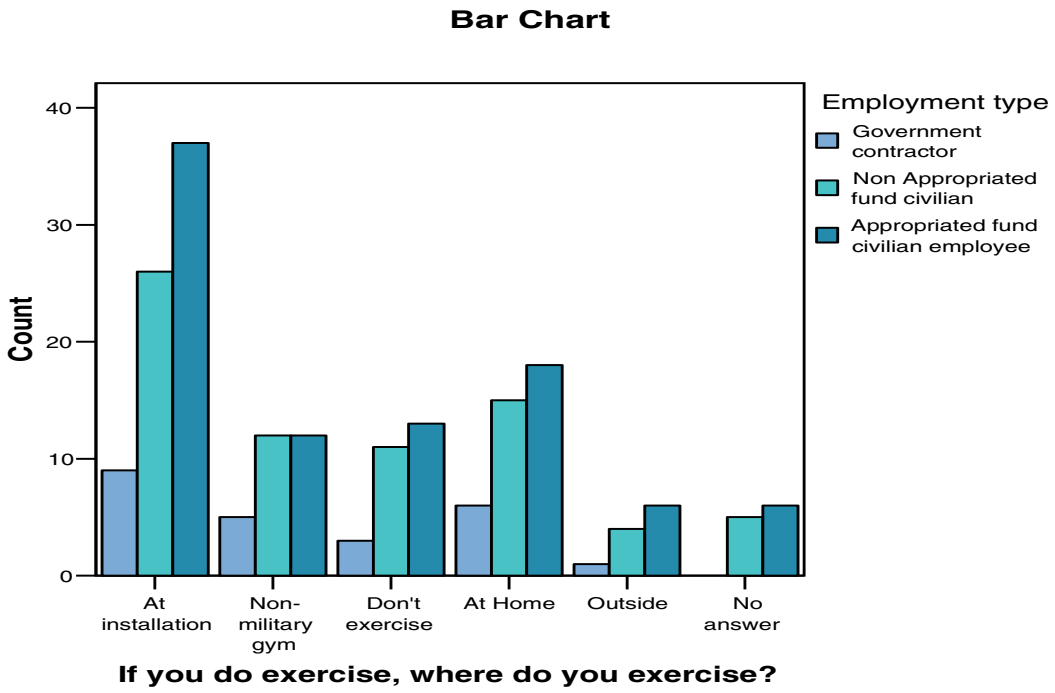


Figure 16. Employment category and where one exercises.
(*figure continues*)

(Figure 16 continues)

Employment type * If you do exercise, where do you exercise? Crosstabulation

			If you do exercise, where do you exercise?						
			At installation	Non-military gym	Don't exercise	At Home	Outside	No answer	Total
Employment type	Government contracto	Count	9	5	3	6	1	0	24
		% within Employment ty	37,5%	20,8%	12,5%	25,0%	4,2%	,0%	100,0%
		% within If you do exerc where do you exercise?	12,5%	17,2%	11,1%	15,4%	9,1%	,0%	12,7%
		% of Total	4,8%	2,6%	1,6%	3,2%	,5%	,0%	12,7%
	Non Appropriated fu civilian	Count	26	12	11	15	4	5	73
		% within Employment ty	35,6%	16,4%	15,1%	20,5%	5,5%	6,8%	100,0%
		% within If you do exerc where do you exercise?	36,1%	41,4%	40,7%	38,5%	36,4%	45,5%	38,6%
		% of Total	13,8%	6,3%	5,8%	7,9%	2,1%	2,6%	38,6%
	Appropriated fund civilian employee	Count	37	12	13	18	6	6	92
		% within Employment ty	40,2%	13,0%	14,1%	19,6%	6,5%	6,5%	100,0%
		% within If you do exerc where do you exercise?	51,4%	41,4%	48,1%	46,2%	54,5%	54,5%	48,7%
		% of Total	19,6%	6,3%	6,9%	9,5%	3,2%	3,2%	48,7%
Total		Count	72	29	27	39	11	11	189
		% within Employment ty	38,1%	15,3%	14,3%	20,6%	5,8%	5,8%	100,0%
		% within If you do exerc where do you exercise?	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	38,1%	15,3%	14,3%	20,6%	5,8%	5,8%	100,0%

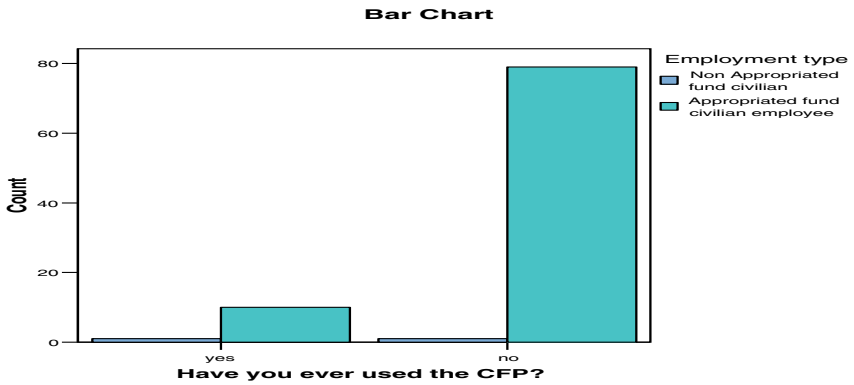
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,246[a]	10	,975
Likelihood Ratio	4,600	10	,916
Linear-by-Linear Association	,578	1	,447
N of Valid Cases	189		

a. 7 cells (38,9%) have expected count less than 5. The minimum expected count is 1,40.

Chi-square (p = 0.975, Pearson) indicated that "If you do exercise, where do you exercise?" and Employment Category are independent. If you do exercise, where do you exercise? and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.986.

Figure 17 shows the correlation of Q1-2: *Are "Have you ever used the CFP?" and Employment Category related?* Because neither the GC nor the NAF employees are eligible for the CFP, only AF employees are represented by these data.



Employment type * Have you ever used the CFP? Crosstabulation

			Have you ever used the CFP?		
			yes	no	Total
Employment type	Non Appropriated fund civilian	Count	1	1	2
		% within Employment type	50,0%	50,0%	100,0%
		% within Have you ever used the CFP?	9,1%	1,3%	2,2%
		% of Total	1,1%	1,1%	2,2%
	Appropriated fund civilian employee	Count	10	79	89
		% within Employment type	11,2%	88,8%	100,0%
		% within Have you ever used the CFP?	90,9%	98,8%	97,8%
		% of Total	11,0%	86,8%	97,8%
Total		Count	11	80	91
		% within Employment type	12,1%	87,9%	100,0%
		% within Have you ever used the CFP?	100,0%	100,0%	100,0%
		% of Total	12,1%	87,9%	100,0%

Figure 17. Employment category and use of the CFP. (*figure continues*)

(Figure 17 continued)

Chi-Square Tests

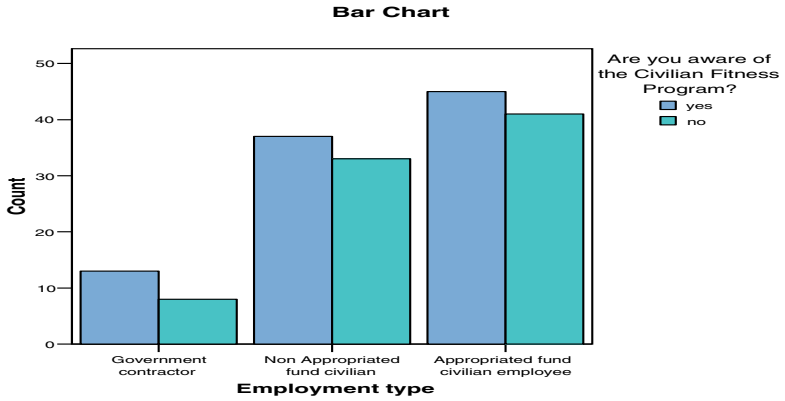
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2,766[b]	1	,096		
Continuity Correction [a]	,321	1	,571		
Likelihood Ratio	1,773	1	,183		
Fisher's Exact Test				,228	,228
Linear-by-Linear Association	2,736	1	,098		
N of Valid Cases	91				

a. Computed only for a 2x2 table

b. 2 cells (50,0%) have expected count less than 5. The minimum expected count is ,24.

Chi-square (p = 0.096, Pearson) indicated that "Have you ever used the CFP?" and Employment Category are independent. "Have you ever used the CFP?" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.228.

Figure 18 shows the correlation of Q1-3: *Are "Are you aware of the CFP?" and Employment Category related?* Because neither the GC nor the NAF employees are eligible for the CFP, only AF employees are represented by these data. Awareness of the CFP has been added to broaden the research question.



Employment type * Are you aware of the Civilian Fitness Program? Crosstabulation

			Are you aware of the Civilian Fitness Program?		
			yes	no	Total
Employment type	Government contractor	Count	13	8	21
		% within Employment type	61,9%	38,1%	100,0%
		% within Are you aware of the Civilian Fitness Program?	13,7%	9,8%	11,9%
		% of Total	7,3%	4,5%	11,9%
	Non Appropriated fund civilian	Count	37	33	70
		% within Employment type	52,9%	47,1%	100,0%
		% within Are you aware of the Civilian Fitness Program?	38,9%	40,2%	39,5%
		% of Total	20,9%	18,6%	39,5%
	Appropriated fund civilian employee	Count	45	41	86
		% within Employment type	52,3%	47,7%	100,0%
		% within Are you aware of the Civilian Fitness Program?	47,4%	50,0%	48,6%
		% of Total	25,4%	23,2%	48,6%
Total		Count	95	82	177
		% within Employment type	53,7%	46,3%	100,0%
		% within Are you aware of the Civilian Fitness Program?	100,0%	100,0%	100,0%
		% of Total	53,7%	46,3%	100,0%

Figure 18. Employment category and awareness of the CFP. (*figure continues*)

(Figure 18 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,654[a]	2	,721
Likelihood Ratio	,661	2	,719
Linear-by-Linear Association	,536	1	,464
N of Valid Cases	177		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 9,73.

Chi-square ($p = 0.721$, Pearson) indicated that "Are you aware of the CFP?" and Employment Category are independent. "Are you aware of the CFP?" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 19 shows the correlation of Q1-4: *Are "Hours of operation" and Employment Category related?*

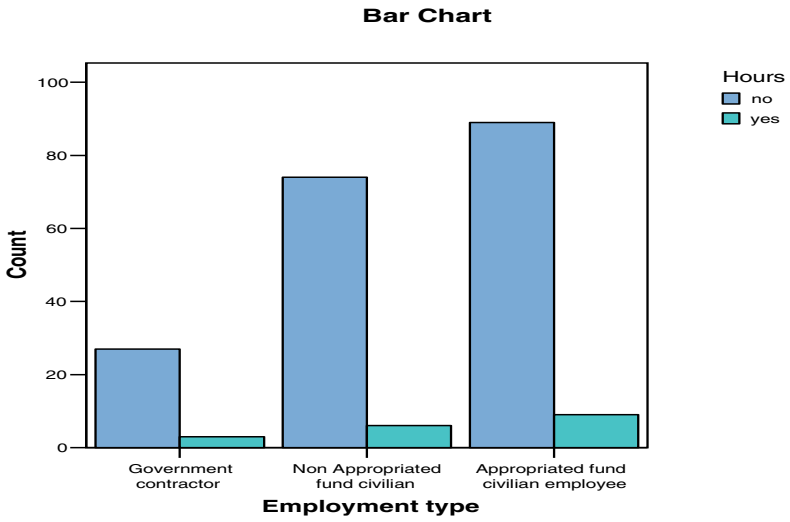


Figure 19. Employment category and hours of operation. (*figure continues*)

(Figure 19 continued)

Employment type * Hours Crosstabulation

			Hours		
			no	yes	Total
Employment type	Government contractor	Count	27	3	30
		% within Employment type	90,0%	10,0%	100,0%
		% within Hours	14,2%	16,7%	14,4%
		% of Total	13,0%	1,4%	14,4%
	Non Appropriated fund civilian	Count	74	6	80
		% within Employment type	92,5%	7,5%	100,0%
		% within Hours	38,9%	33,3%	38,5%
		% of Total	35,6%	2,9%	38,5%
	Appropriated fund civilian employee	Count	89	9	98
		% within Employment type	90,8%	9,2%	100,0%
		% within Hours	46,8%	50,0%	47,1%
		% of Total	42,8%	4,3%	47,1%
Total		Count	190	18	208
		% within Employment type	91,3%	8,7%	100,0%
		% within Hours	100,0%	100,0%	100,0%
		% of Total	91,3%	8,7%	100,0%

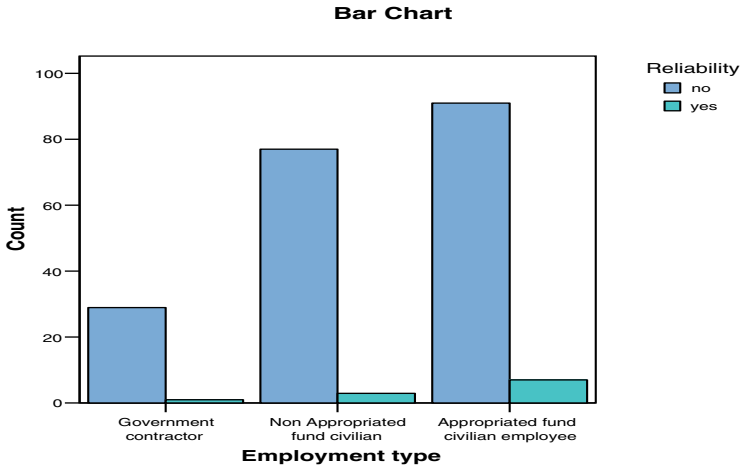
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,238[a]	2	,888
Likelihood Ratio	,241	2	,887
Linear-by-Linear Association	,005	1	,944
N of Valid Cases	208		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,60.

Chi-square ($p = 0.888$, Pearson) indicated that "Hours of operation" and Employment Category are independent. "Hours of operation" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 20 shows the correlation of Q1-5: *Are "Reliability" and Employment Category related?*



Employment type * Reliability Crosstabulation

			Reliability		
			no	yes	Total
Employment type	Government contractor	Count	29	1	30
		% within Employment type	96,7%	3,3%	100,0%
		% within Reliability	14,7%	9,1%	14,4%
		% of Total	13,9%	,5%	14,4%
	Non Appropriated fund civilian	Count	77	3	80
		% within Employment type	96,3%	3,8%	100,0%
		% within Reliability	39,1%	27,3%	38,5%
		% of Total	37,0%	1,4%	38,5%
	Appropriated fund civilian employee	Count	91	7	98
		% within Employment type	92,9%	7,1%	100,0%
		% within Reliability	46,2%	63,6%	47,1%
		% of Total	43,8%	3,4%	47,1%
Total		Count	197	11	208
		% within Employment type	94,7%	5,3%	100,0%
		% within Reliability	100,0%	100,0%	100,0%
		% of Total	94,7%	5,3%	100,0%

Chi-Square Tests

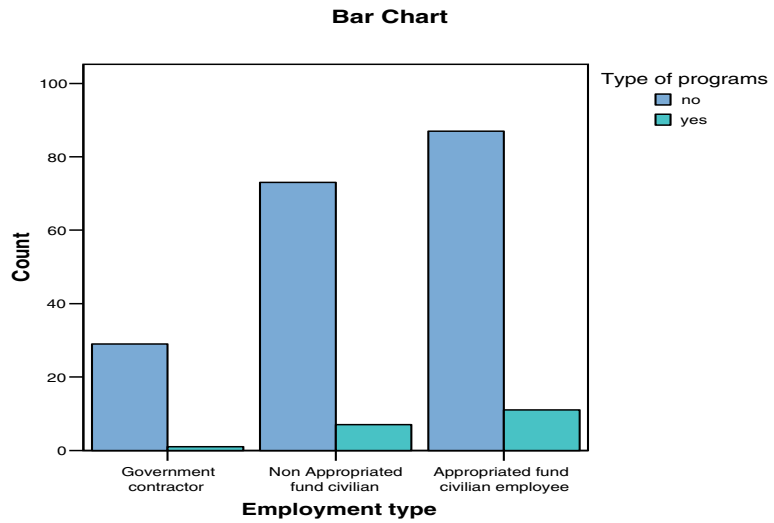
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,280[a]	2	,527
Likelihood Ratio	1,290	2	,525
Linear-by-Linear Association	,842	1	,359
N of Valid Cases	208		

a. 2 cells (33,3%) have expected count less than 5. The minimum expected count is 1,59.

Figure 20. Employment category and reliability.

Chi-square ($p = 0.527$, Pearson) indicated that "Reliability" and Employment Category are independent. "Reliability" and Employment Category are not associated. The data did not meet the conditions for a Chi-square test. Fisher's Exact Test produced $p = 0.634$.

Figure 21 shows the correlation of Q1-6: *Are "Types of programs" and Employment Category related?*



Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,746[a]	2	,418
Likelihood Ratio	2,072	2	,355
Linear-by-Linear Association	1,737	1	,188
N of Valid Cases	208		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,74.

Figure 21. Employment category and types of programs.

Chi-square ($p = 0.418$, Pearson) indicated that "Types of programs" and Employment Category are independent. "Types of programs" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 22 shows the correlation of Q1-7: *Are "Physically uncomfortable" and Employment Category related?*

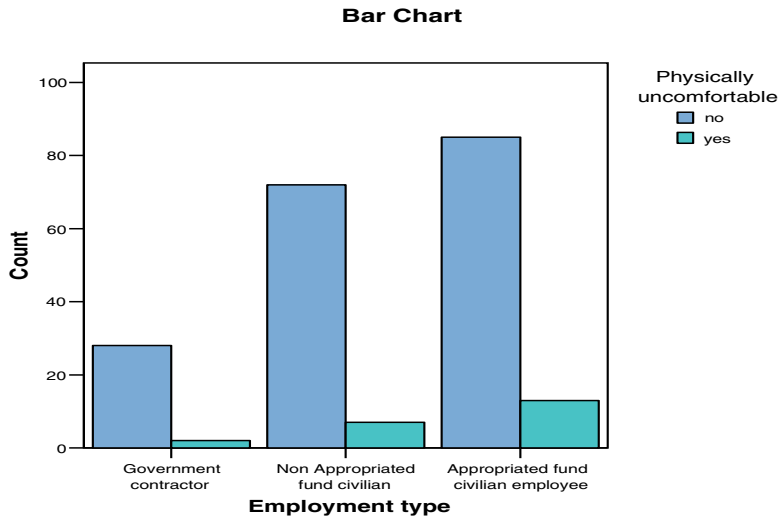


Figure 22. Employment category and feeling physically uncomfortable. (*figure continues*)

(Figure 22 continued)

Employment type * Physically uncomfortable Crosstabulation

			Physically uncomfortable		
			no	yes	Total
Employment type	Government contractor	Count	28	2	30
		% within Employment type	93,3%	6,7%	100,0%
		% within Physically uncomfortable	15,1%	9,1%	14,5%
		% of Total	13,5%	1,0%	14,5%
	Non Appropriated fund civilian	Count	72	7	79
		% within Employment type	91,1%	8,9%	100,0%
		% within Physically uncomfortable	38,9%	31,8%	38,2%
		% of Total	34,8%	3,4%	38,2%
	Appropriated fund civilian employee	Count	85	13	98
		% within Employment type	86,7%	13,3%	100,0%
		% within Physically uncomfortable	45,9%	59,1%	47,3%
		% of Total	41,1%	6,3%	47,3%
Total		Count	185	22	207
		% within Employment type	89,4%	10,6%	100,0%
		% within Physically uncomfortable	100,0%	100,0%	100,0%
		% of Total	89,4%	10,6%	100,0%

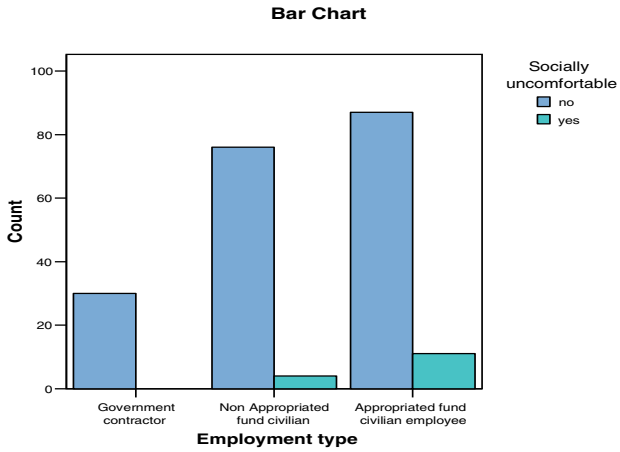
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,473[a]	2	,479
Likelihood Ratio	1,508	2	,470
Linear-by-Linear Association	1,222	1	,269
N of Valid Cases	207		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 3,19.

Chi-square ($p = 0.479$, Pearson) indicated that "Physically uncomfortable" and Employment Category are independent. "Physically uncomfortable" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 23 shows the correlation of Q1-8: *Are "Socially uncomfortable" and Employment Category related?*



Employment type * Socially uncomfortable Crosstabulation

			Socially uncomfortable		
			no	yes	Total
Employment type	Government contractor	Count	30	0	30
		% within Employment type	100,0%	,0%	100,0%
		% within Socially uncomfortable	15,5%	,0%	14,4%
		% of Total	14,4%	,0%	14,4%
	Non Appropriated fund civilian	Count	76	4	80
		% within Employment type	95,0%	5,0%	100,0%
		% within Socially uncomfortable	39,4%	26,7%	38,5%
		% of Total	36,5%	1,9%	38,5%
	Appropriated fund civilian employee	Count	87	11	98
		% within Employment type	88,8%	11,2%	100,0%
		% within Socially uncomfortable	45,1%	73,3%	47,1%
		% of Total	41,8%	5,3%	47,1%
Total		Count	193	15	208
		% within Employment type	92,8%	7,2%	100,0%
		% within Socially uncomfortable	100,0%	100,0%	100,0%
		% of Total	92,8%	7,2%	100,0%

Figure 23. Employment category and feeling socially uncomfortable. (*figure continues*)

(Figure 23 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,275[a]	2	,072
Likelihood Ratio	7,182	2	,028
Linear-by-Linear Association	4,807	1	,028
N of Valid Cases	208		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,16.

Chi-square (p = 0.072, Pearson) indicated that "Socially uncomfortable" and Employment Category are independent. "Socially uncomfortable" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.083.

Figure 24 shows the correlation of Q1-9: *Are "Staff" and Employment Category related?*

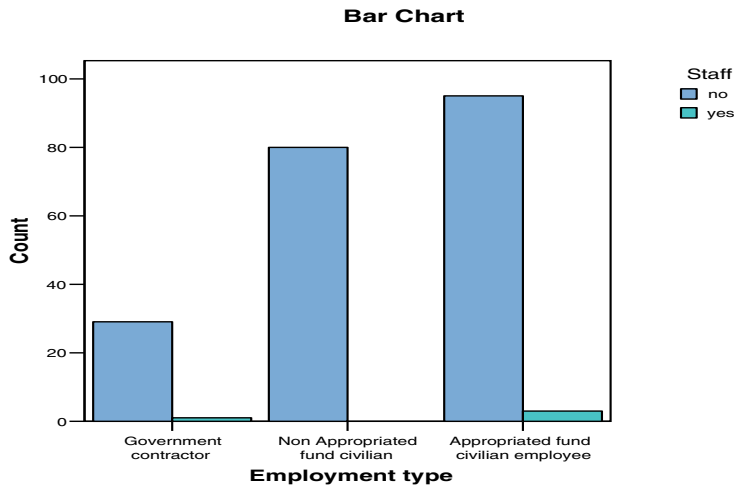


Figure 24. Employment category and staff. (*figure continues*)

(Figure 24 continued)

Employment type * Staff Crosstabulation

			Staff		
			no	yes	Total
Employment type	Government contractor	Count	29	1	30
		% within Employment type	96,7%	3,3%	100,0%
		% within Staff	14,2%	25,0%	14,4%
		% of Total	13,9%	,5%	14,4%
	Non Appropriated fund civilian	Count	80	0	80
		% within Employment type	100,0%	,0%	100,0%
		% within Staff	39,2%	,0%	38,5%
		% of Total	38,5%	,0%	38,5%
	Appropriated fund civilian employee	Count	95	3	98
		% within Employment type	96,9%	3,1%	100,0%
		% within Staff	46,6%	75,0%	47,1%
		% of Total	45,7%	1,4%	47,1%
Total		Count	204	4	208
		% within Employment type	98,1%	1,9%	100,0%
		% within Staff	100,0%	100,0%	100,0%
		% of Total	98,1%	1,9%	100,0%

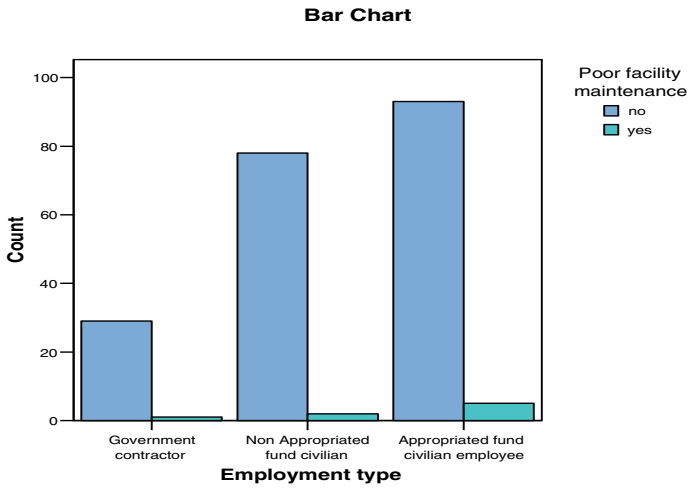
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,558[a]	2	,278
Likelihood Ratio	3,939	2	,140
Linear-by-Linear Association	,018	1	,893
N of Valid Cases	208		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,58.

Chi-square (p = 0.278, Pearson) indicated that "Staff" and Employment Category are independent. "Staff" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.262.

Figure 25 shows the correlation of Q1-10: *Are "Poor facility maintenance" and Employment Category related?*



Employment type * Poor facility maintenance Crosstabulation

			Poor facility maintenance		
			no	yes	Total
Employment type	Government contractor	Count	29	1	30
		% within Employment type	96,7%	3,3%	100,0%
		% within Poor facility maintenance	14,5%	12,5%	14,4%
		% of Total	13,9%	,5%	14,4%
	Non Appropriated fund civilian	Count	78	2	80
		% within Employment type	97,5%	2,5%	100,0%
		% within Poor facility maintenance	39,0%	25,0%	38,5%
		% of Total	37,5%	1,0%	38,5%
	Appropriated fund civilian employee	Count	93	5	98
		% within Employment type	94,9%	5,1%	100,0%
		% within Poor facility maintenance	46,5%	62,5%	47,1%
		% of Total	44,7%	2,4%	47,1%
Total		Count	200	8	208
		% within Employment type	96,2%	3,8%	100,0%
		% within Poor facility maintenance	100,0%	100,0%	100,0%
		% of Total	96,2%	3,8%	100,0%

Figure 25. Employment category and poor facility maintenance. (*figure continues*)

(Figure 25 continues)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,831[a]	2	,660
Likelihood Ratio	,848	2	,654
Linear-by-Linear Association	,302	1	,583
N of Valid Cases	208		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is 1,15.

Chi-square ($p = 0.660$, Pearson) indicated that "Poor facility maintenance" and Employment Category are independent. "Poor facility maintenance" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.787$.

Figure 26 shows the correlation of Q1-11: *Are Barrier #8 "Don't like exercising" and Employment Category related?*

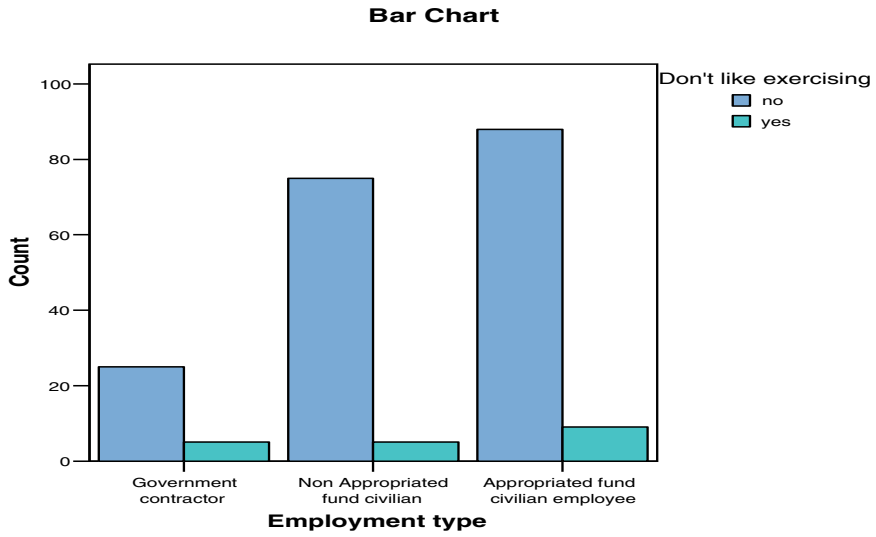


Figure 26. Employment category and not liking exercise. (*figure continues*) (Figure 26 continues)

Employment type * Don't like exercising Crosstabulation

			Don't like exercising		
			no	yes	Total
Employment type	Government contractor	Count	25	5	30
		% within Employment type	83,3%	16,7%	100,0%
		% within Don't like exercisir	13,3%	26,3%	14,5%
		% of Total	12,1%	2,4%	14,5%
	Non Appropriated fund civilian	Count	75	5	80
		% within Employment type	93,8%	6,3%	100,0%
		% within Don't like exercisir	39,9%	26,3%	38,6%
		% of Total	36,2%	2,4%	38,6%
	Appropriated fund civilian employee	Count	88	9	97
		% within Employment type	90,7%	9,3%	100,0%
		% within Don't like exercisir	46,8%	47,4%	46,9%
		% of Total	42,5%	4,3%	46,9%
Total		Count	188	19	207
		% within Employment type	90,8%	9,2%	100,0%
		% within Don't like exercisir	100,0%	100,0%	100,0%
		% of Total	90,8%	9,2%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,842[a]	2	,241
Likelihood Ratio	2,582	2	,275
Linear-by-Linear Association	1,097	1	,295
N of Valid Cases	207		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,75.

Chi-square (p =. 0.241, Pearson) indicated that "Don't like exercising" and Employment Category are independent. "Don't like exercising" and Employment Category are not associated. The data did

not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.254$.

Figure 27 shows the correlation of Q1-12: *Are Barrier #9 "Don't have the time" and Employment Category related?*

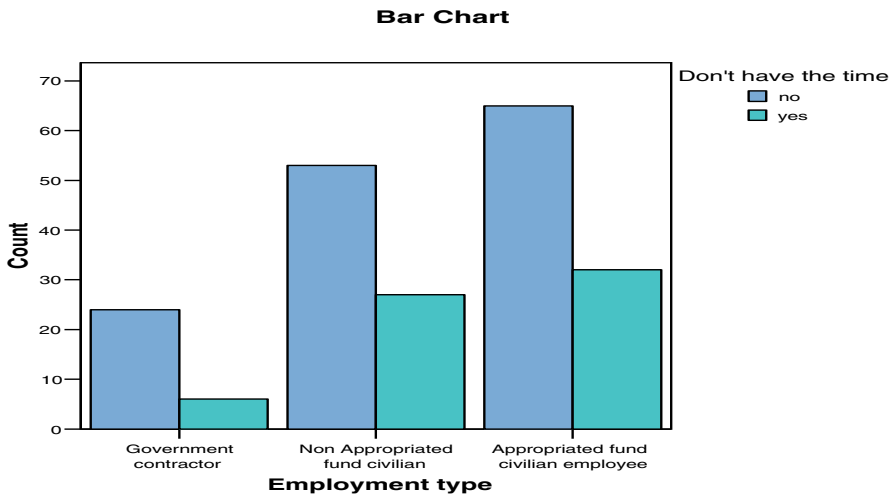


Figure 27. Employment category and no time to exercise. (*figure continues*)

(Figure 27 continues)

Employment type * Don't have the time Crosstabulation

			Don't have the time		
			no	yes	Total
Employment type	Government contractor	Count	24	6	30
		% within Employment type	80,0%	20,0%	100,0%
		% within Don't have the tim	16,9%	9,2%	14,5%
		% of Total	11,6%	2,9%	14,5%
	Non Appropriated func civilian	Count	53	27	80
		% within Employment type	66,3%	33,8%	100,0%
		% within Don't have the tim	37,3%	41,5%	38,6%
		% of Total	25,6%	13,0%	38,6%
	Appropriated fund civilian employee	Count	65	32	97
		% within Employment type	67,0%	33,0%	100,0%
		% within Don't have the tim	45,8%	49,2%	46,9%
		% of Total	31,4%	15,5%	46,9%
Total		Count	142	65	207
		% within Employment type	68,6%	31,4%	100,0%
		% within Don't have the tim	100,0%	100,0%	100,0%
		% of Total	68,6%	31,4%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,129[a]	2	,345
Likelihood Ratio	2,282	2	,320
Linear-by-Linear Association	1,543	1	,214
N of Valid Cases	207		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 9,42.

Chi-square ($p = 0.345$, Pearson) indicated that "Don't have the time" and Employment Category are independent. "Don't have the time" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 28 shows the correlation of Q1-13: *Are Barrier #10 "I'm happy with the way I look" and Employment Category?*

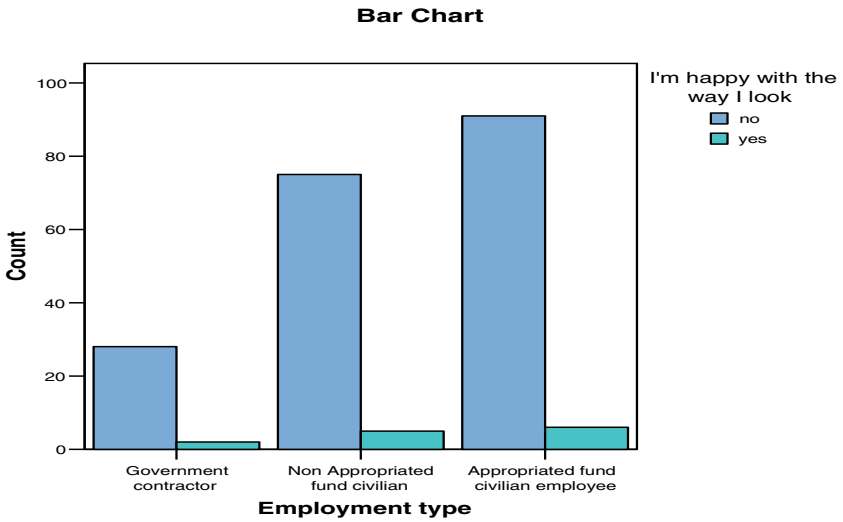


Figure 28. Employment category and being happy with one's looks. (*figure continues*)

(Figure 28 continued)

Employment type * I'm happy with the way I look Crosstabulation

			I'm happy with the way I look		
			no	yes	Total
Employment type	Government contractor	Count	28	2	30
		% within Employment type	93,3%	6,7%	100,0%
		% within I'm happy with the way I look	14,4%	15,4%	14,5%
		% of Total	13,5%	1,0%	14,5%
	Non Appropriated fund civilian	Count	75	5	80
		% within Employment type	93,8%	6,3%	100,0%
		% within I'm happy with the way I look	38,7%	38,5%	38,6%
		% of Total	36,2%	2,4%	38,6%
	Appropriated fund civilian employee	Count	91	6	97
		% within Employment type	93,8%	6,2%	100,0%
		% within I'm happy with the way I look	46,9%	46,2%	46,9%
		% of Total	44,0%	2,9%	46,9%
Total		Count	194	13	207
		% within Employment type	93,7%	6,3%	100,0%
		% within I'm happy with the way I look	100,0%	100,0%	100,0%
		% of Total	93,7%	6,3%	100,0%

Chi-Square Tests

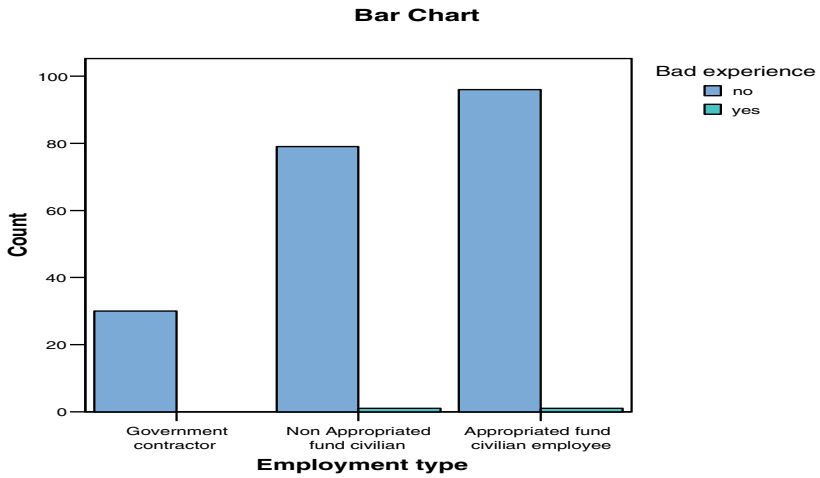
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,009[a]	2	,995
Likelihood Ratio	,009	2	,995
Linear-by-Linear Association	,008	1	,927
N of Valid Cases	207		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 1,88.

Chi-square ($p = 0.995$, Pearson) indicated that "I'm happy with the way I look" and Employment Category are independent. "I'm happy with the way I look" and Employment Category are not associated. The data

did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 1.00$.

Figure 29 shows the correlation of Q1-14: *Are Barrier #11 "Bad experience" and Employment Category related?*



Employment type * Bad experience Crosstabulation

			Bad experience		
			no	yes	Total
Employment type	Government contractor	Count	30	0	30
		% within Employment type	100,0%	,0%	100,0%
		% within Bad experience	14,6%	,0%	14,5%
		% of Total	14,5%	,0%	14,5%
	Non Appropriated fund civilian	Count	79	1	80
		% within Employment type	98,8%	1,3%	100,0%
		% within Bad experience	38,5%	50,0%	38,6%
		% of Total	38,2%	,5%	38,6%
	Appropriated fund civilian employee	Count	96	1	97
		% within Employment type	99,0%	1,0%	100,0%
		% within Bad experience	46,8%	50,0%	46,9%
		% of Total	46,4%	,5%	46,9%
Total		Count	205	2	207
		% within Employment type	99,0%	1,0%	100,0%
		% within Bad experience	100,0%	100,0%	100,0%
		% of Total	99,0%	1,0%	100,0%

Figure 29. Employment category and bad prior experience. (*figure continues)*

(Figure 29 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,364[a]	2	,833
Likelihood Ratio	,648	2	,723
Linear-by-Linear Association	,204	1	,651
N of Valid Cases	207		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,29.

Chi-square (p = 0.833, Pearson) indicated that "Bad experience" and Employment Category are independent. "Bad experience" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 1.00.

Figure 30 shows the correlation of Q1-15: *Are Barrier #12 "I'd rather diet" and Employment Category related?*

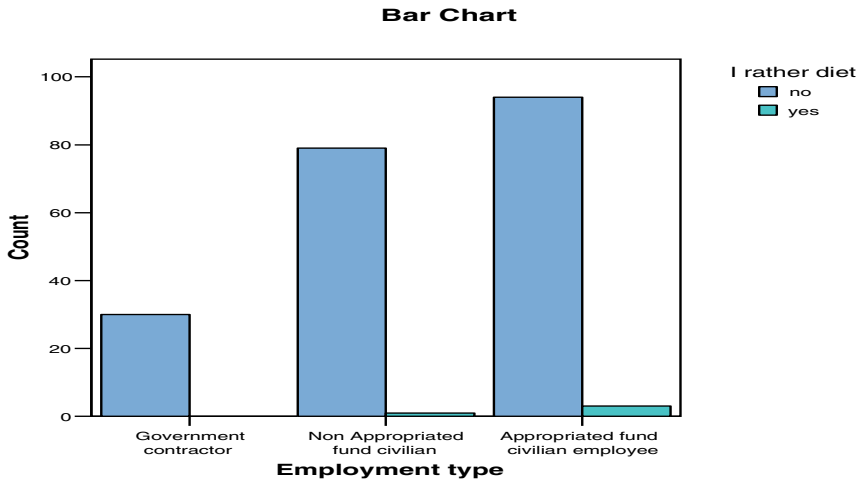


Figure 30. Employment category and preferring to diet. (*figure continues)*

(Figure 30 continues)

Employment type * I rather diet Crosstabulation

			I rather diet		
			no	yes	Total
Employment type	Government contractor	Count	30	0	30
		% within Employment type	100,0%	,0%	100,0%
		% within I rather diet	14,8%	,0%	14,5%
		% of Total	14,5%	,0%	14,5%
	Non Appropriated fund civilian	Count	79	1	80
		% within Employment type	98,8%	1,3%	100,0%
		% within I rather diet	38,9%	25,0%	38,6%
		% of Total	38,2%	,5%	38,6%
	Appropriated fund civilian employee	Count	94	3	97
		% within Employment type	96,9%	3,1%	100,0%
		% within I rather diet	46,3%	75,0%	46,9%
		% of Total	45,4%	1,4%	46,9%
Total		Count	203	4	207
		% within Employment type	98,1%	1,9%	100,0%
		% within I rather diet	100,0%	100,0%	100,0%
		% of Total	98,1%	1,9%	100,0%

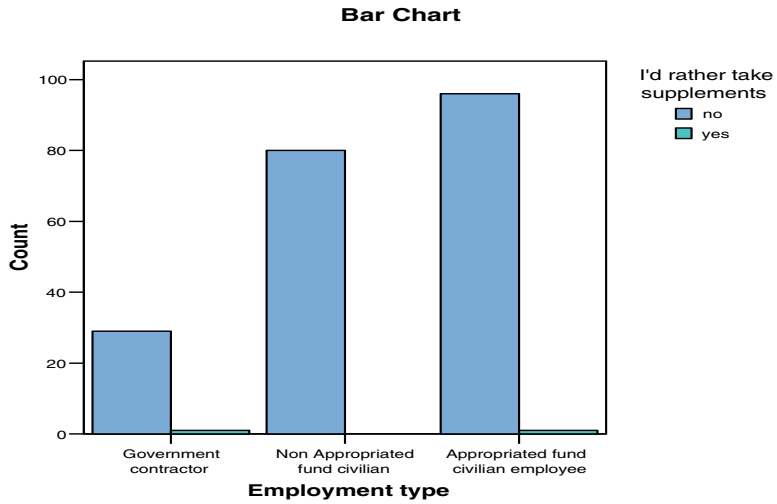
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,477[a]	2	,478
Likelihood Ratio	1,979	2	,372
Linear-by-Linear Association	1,303	1	,254
N of Valid Cases	207		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,58.

Chi-square ($p = 0.478$, Pearson) indicated that "I'd rather diet" and Employment Category are independent. "I'd rather diet" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.802$.

Figure 31 shows the correlation of Q1-16: *Are Barrier #13 "I'd rather take supplements" and Employment Category related?*



Employment type * I'd rather take supplements Crosstabulation

			I'd rather take supplements		
			no	yes	Total
Employment type	Government contractor	Count	29	1	30
		% within Employment type	96,7%	3,3%	100,0%
		% within I'd rather take supplements	14,1%	50,0%	14,5%
		% of Total	14,0%	,5%	14,5%
	Non Appropriated fund civilian	Count	80	0	80
		% within Employment type	100,0%	,0%	100,0%
		% within I'd rather take supplements	39,0%	,0%	38,6%
		% of Total	38,6%	,0%	38,6%
	Appropriated fund civilian employee	Count	96	1	97
		% within Employment type	99,0%	1,0%	100,0%
		% within I'd rather take supplements	46,8%	50,0%	46,9%
		% of Total	46,4%	,5%	46,9%
Total		Count	205	2	207
		% within Employment type	99,0%	1,0%	100,0%
		% within I'd rather take supplements	100,0%	100,0%	100,0%
		% of Total	99,0%	1,0%	100,0%

Figure 31. Employment category and preferring to take supplements. (*figure continues*)

(Figure 31 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,542[a]	2	,281
Likelihood Ratio	2,631	2	,268
Linear-by-Linear Association	,911	1	,340
N of Valid Cases	207		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,29.

Chi-square ($p = 0.281$, Pearson) indicated that "I'd rather take supplements" and Employment Category are independent. "I'd rather take supplements" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.269$.

Figure 32 shows the correlation of Q1-17: *Are Barrier #14 "I'd rather have plastic surgery" and Employment Category related?*

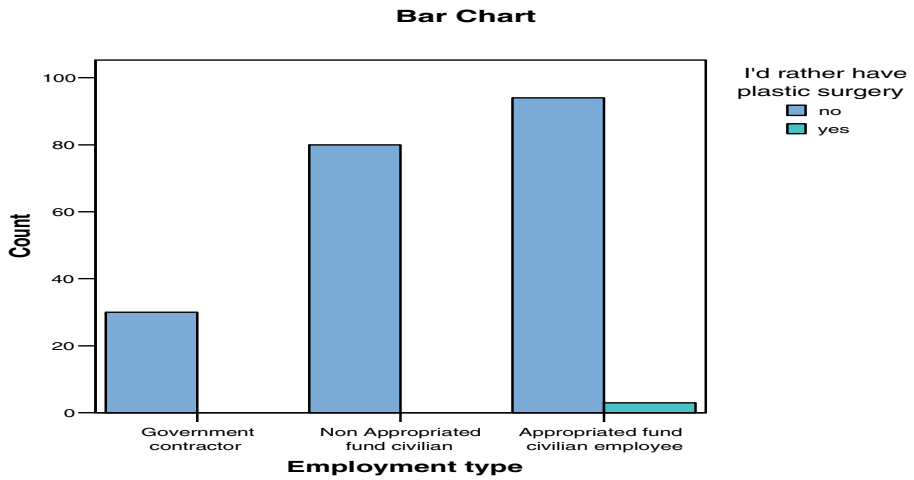


Figure 32. Employment Category and preferring plastic surgery. (*figure continues*)

(Figure 32 continues)

Employment type * I'd rather have plastic surgery Crosstabulation

			I'd rather have plastic surgery		
			no	yes	Total
Employment type	Government contractor	Count	30	0	30
		% within Employment type	100,0%	,0%	100,0%
		% within I'd rather have plastic surgery	14,7%	,0%	14,5%
		% of Total	14,5%	,0%	14,5%
	Non Appropriated fund civilian	Count	80	0	80
		% within Employment type	100,0%	,0%	100,0%
		% within I'd rather have plastic surgery	39,2%	,0%	38,6%
		% of Total	38,6%	,0%	38,6%
	Appropriated fund civilian employee	Count	94	3	97
		% within Employment type	96,9%	3,1%	100,0%
		% within I'd rather have plastic surgery	46,1%	100,0%	46,9%
		% of Total	45,4%	1,4%	46,9%
Total		Count	204	3	207
		% within Employment type	98,6%	1,4%	100,0%
		% within I'd rather have plastic surgery	100,0%	100,0%	100,0%
		% of Total	98,6%	1,4%	100,0%

Chi-Square Tests

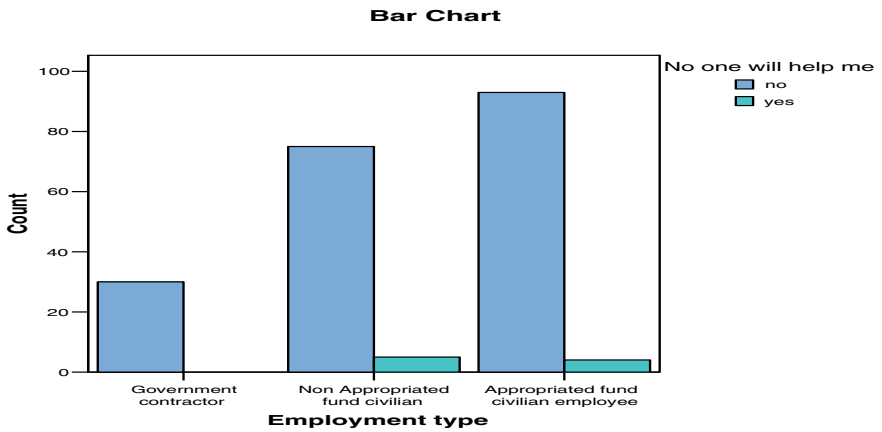
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,452[a]	2	,178
Likelihood Ratio	4,598	2	,100
Linear-by-Linear Association	2,010	1	,156
N of Valid Cases	207		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,43.

Chi-square ($p = 0.178$, Pearson) indicated that "I'd rather have plastic surgery" and Employment Category are independent. "I'd rather have plastic surgery" and Employment Category are not associated. The

data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.374$.

Figure 33 shows the correlation of Q1-18: *Are Barrier #15 "No one will help me" and Employment Category related?*



Employment type * No one will help me Crosstabulation

			No one will help me		
			no	yes	Total
Employment type	Government contractor	Count	30	0	30
		% within Employment type	100,0%	,0%	100,0%
		% within No one will help me	15,2%	,0%	14,5%
		% of Total	14,5%	,0%	14,5%
	Non Appropriated fund civilian	Count	75	5	80
		% within Employment type	93,8%	6,3%	100,0%
		% within No one will help me	37,9%	55,6%	38,6%
		% of Total	36,2%	2,4%	38,6%
	Appropriated fund civilian employee	Count	93	4	97
		% within Employment type	95,9%	4,1%	100,0%
		% within No one will help me	47,0%	44,4%	46,9%
		% of Total	44,9%	1,9%	46,9%
Total		Count	198	9	207
		% within Employment type	95,7%	4,3%	100,0%
		% within No one will help me	100,0%	100,0%	100,0%
		% of Total	95,7%	4,3%	100,0%

Figure 33. Employment Category and not getting help. (*figure continues*)

(Figure 33 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,071[a]	2	,355
Likelihood Ratio	3,295	2	,193
Linear-by-Linear Association	,650	1	,420
N of Valid Cases	207		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is 1,30.

Chi-square ($p = 0.355$, Pearson) indicated that "No one will help me" and Employment Category are independent. "No one will help me" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.417$.

Figure 34 shows the correlation of Q1-19: *Are Barrier #16 "No childcare" and Employment Category related?*

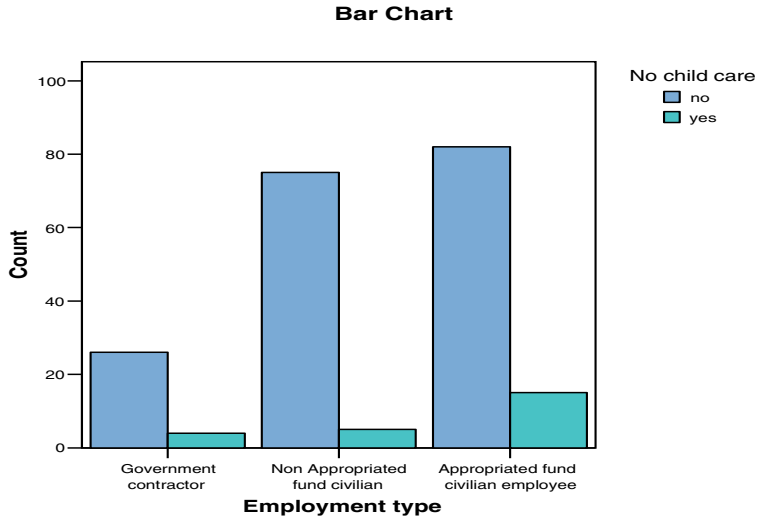


Figure 34. Employment Category and lack of childcare. (*figure continues*)

(Figure 34 continued)

Employment type * No child care Crosstabulation

			No child care		
			no	yes	Total
Employment type	Government contractor	Count	26	4	30
		% within Employment type	86,7%	13,3%	100,0%
		% within No child care	14,2%	16,7%	14,5%
		% of Total	12,6%	1,9%	14,5%
	Non Appropriated fund civilian	Count	75	5	80
		% within Employment type	93,8%	6,3%	100,0%
		% within No child care	41,0%	20,8%	38,6%
		% of Total	36,2%	2,4%	38,6%
	Appropriated fund civilian employee	Count	82	15	97
		% within Employment type	84,5%	15,5%	100,0%
		% within No child care	44,8%	62,5%	46,9%
		% of Total	39,6%	7,2%	46,9%
Total		Count	183	24	207
		% within Employment type	88,4%	11,6%	100,0%
		% within No child care	100,0%	100,0%	100,0%
		% of Total	88,4%	11,6%	100,0%

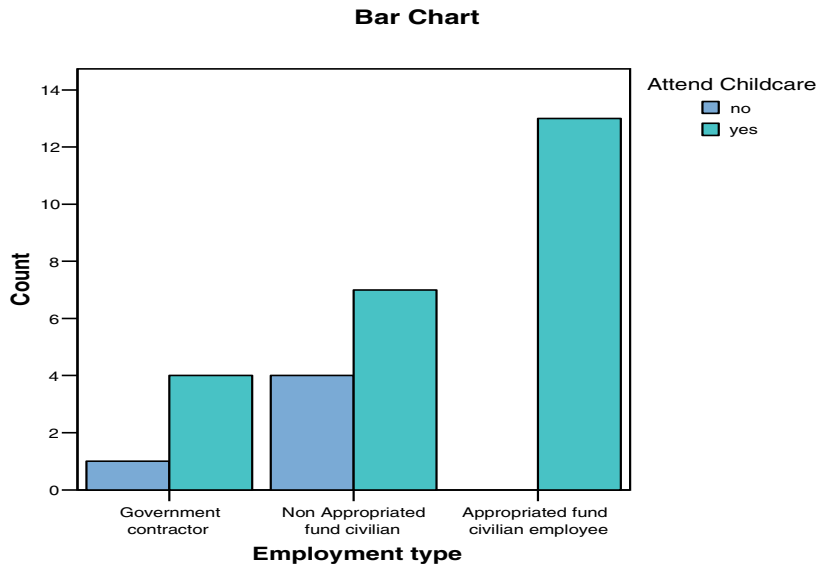
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,735[a]	2	,155
Likelihood Ratio	4,009	2	,135
Linear-by-Linear Association	,339	1	,560
N of Valid Cases	207		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 3,48.

Chi-square ($p = 0.155$, Pearson) indicated that "No childcare" and Employment Category are independent. "No childcare" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 35 shows the correlation of Q1-20: *Barrier #18 Are "Attend childcare" and Employment Category related?*



Employment type * Attend Childcare Crosstabulation

			Attend Childcare		
			no	yes	Total
Employment type	Government contractor	Count	1	4	5
		% within Employment type	20,0%	80,0%	100,0%
		% within Attend Childcare	20,0%	16,7%	17,2%
		% of Total	3,4%	13,8%	17,2%
	Non Appropriated fund civilian	Count	4	7	11
		% within Employment type	36,4%	63,6%	100,0%
		% within Attend Childcare	80,0%	29,2%	37,9%
		% of Total	13,8%	24,1%	37,9%
	Appropriated fund civilian employee	Count	0	13	13
		% within Employment type	,0%	100,0%	100,0%
		% within Attend Childcare	,0%	54,2%	44,8%
		% of Total	,0%	44,8%	44,8%
Total		Count	5	24	29
		% within Employment type	17,2%	82,8%	100,0%
		% within Attend Childcare	100,0%	100,0%	100,0%
		% of Total	17,2%	82,8%	100,0%

Figure 35. Employment Category and attending childcare.
(*figure continues)*

(Figure 35 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,554[a]	2	,062
Likelihood Ratio	7,238	2	,027
Linear-by-Linear Association	1,312	1	,252
N of Valid Cases	29		

a. 4 cells (66,7%) have expected count less than 5. The minimum expected count is ,86.

Chi-square ($p = 0.062$, Pearson) indicated that "Attend childcare" and Employment Category are independent. "Attend childcare" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.067$.

Figure 36 shows the correlation of Q1-21: *Are Barrier #19 "Pay for childcare" and Employment Category related?*

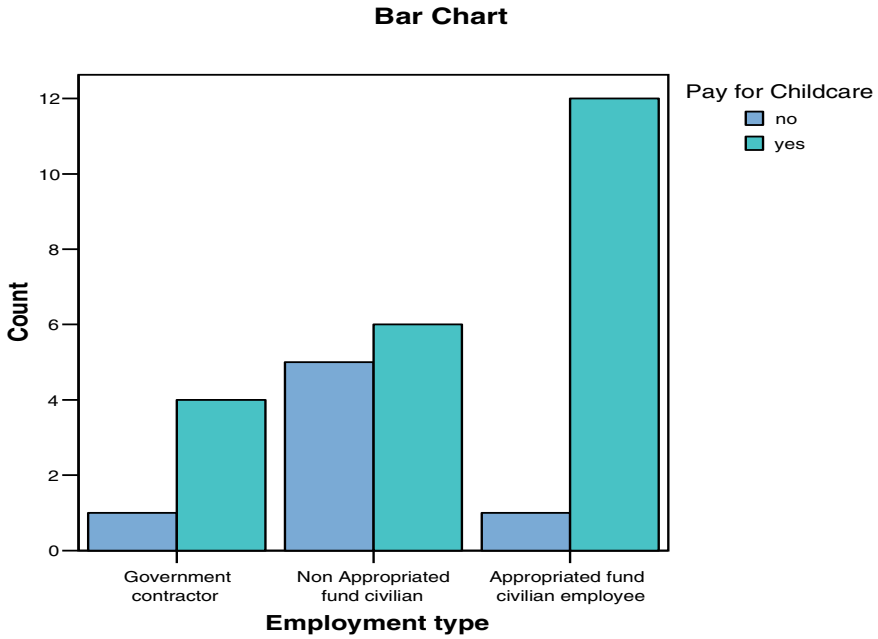


Figure 36. Employment category and paying for childcare. (*figure continues*)

(Figure 36 continued)

Employment type * Pay for Childcare Crosstabulation

			Pay for Childcare		
			no	yes	Total
Employment type	Government contractor	Count	1	4	5
		% within Employment type	20,0%	80,0%	100,0%
		% within Pay for Childcare	14,3%	18,2%	17,2%
		% of Total	3,4%	13,8%	17,2%
	Non Appropriated fund civilian	Count	5	6	11
		% within Employment type	45,5%	54,5%	100,0%
		% within Pay for Childcare	71,4%	27,3%	37,9%
		% of Total	17,2%	20,7%	37,9%
	Appropriated fund civilian employee	Count	1	12	13
		% within Employment type	7,7%	92,3%	100,0%
		% within Pay for Childcare	14,3%	54,5%	44,8%
		% of Total	3,4%	41,4%	44,8%
Total		Count	7	22	29
		% within Employment type	24,1%	75,9%	100,0%
		% within Pay for Childcare	100,0%	100,0%	100,0%
		% of Total	24,1%	75,9%	100,0%

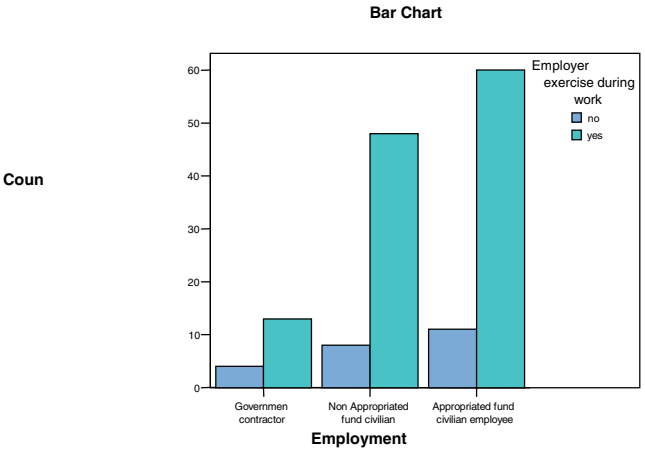
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,696[a]	2	,096
Likelihood Ratio	4,841	2	,089
Linear-by-Linear Association	,479	1	,489
N of Valid Cases	29		

a. 4 cells (66,7%) have expected count less than 5. The minimum expected count is 1,21.

Chi-square (p = 0.096, Pearson) indicated that "Pay for childcare" and Employment Category are independent. "Pay for childcare" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.082.

Figure 37 shows the correlation of *Q1-22: Are Barrier #20 "Employer allows no exercise during working hours" and Employment Category related?*



Employment Category * Employer allows exercise during work Cross

			Employer allows exercise during work		
			no	yes	Total
Employmen type	Government contractor	Coun	4	13	17
		% within Employment Category	23,5%	76,5%	100,0%
		% within Employer no exercise during work	17,4%	10,7%	11,8%
		% of Total	2,8%	9,0%	11,8%
	Non Appropriated fund civilia	Coun	8	48	56
		% within Employment Category	14,3%	85,7%	100,0%
		% within Employer no exercise during work	34,8%	39,7%	38,9%
		% of Total	5,6%	33,3%	38,9%
	Appropriated fund civilian	Coun	11	60	71
		% within Employment Category	15,5%	84,5%	100,0%
		% within Employer no exercise during work	47,8%	49,6%	49,3%
		% of Total	7,6%	41,7%	49,3%
Total		Coun	23	121	144
		% within Employment Category	16,0%	84,0%	100,0%
		% within Employer no exercise during work	100,0%	100,0%	100,0%
		% of Total	16,0%	84,0%	100,0%

Figure 37. Employment category and employer not allowing time off for exercise. (*figure continues*)

(Figure 37 continued)

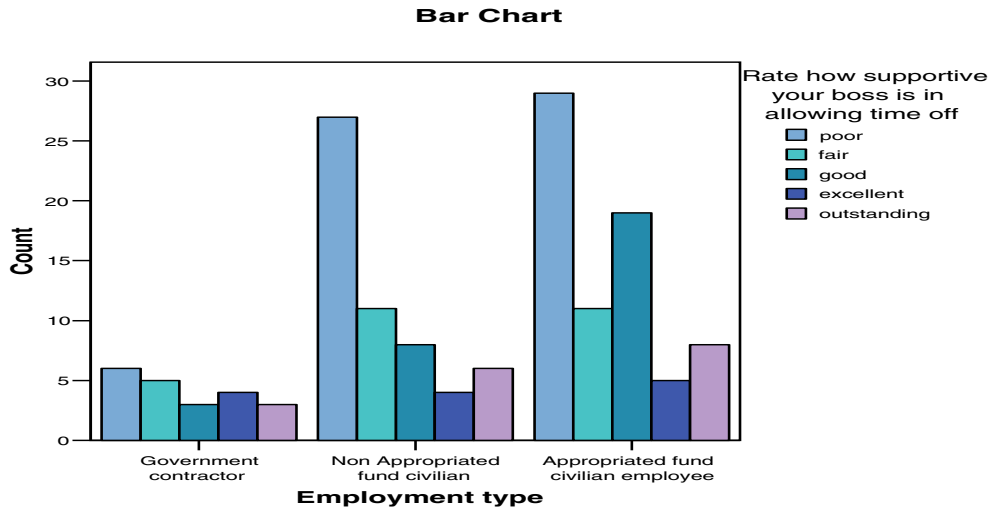
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,854[a]	2	,652
Likelihood Ratio	,783	2	,676
Linear-by-Linear Association	,484	1	,487
N of Valid Cases	144		

a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,72.

Chi-square ($p = 0.652$, Pearson) indicated that "Employer allows no exercise during working hours" and Employment Category are independent. "Employer allows no exercise during working hours" and Employment Category are not associated. The data met the conditions for a chi-square test.

Figure 38 shows the correlation of *Q1-23: Are Barrier #21 "Rate how supportive your boss is in allowing time" and Employment Category related?*



Employment type * Rate how supportive your boss is in allowing time off Crosstabulation

			Rate how supportive your boss is in allowing time off					
			poor	fair	good	excellent	outstanding	Total
Employment type	Government contractor	Count	6	5	3	4	3	21
		% within Employment type	28,6%	23,8%	14,3%	19,0%	14,3%	100,0%
		% within Rate how supportive your boss is in allowing time off	9,7%	18,5%	10,0%	30,8%	17,6%	14,1%
		% of Total	4,0%	3,4%	2,0%	2,7%	2,0%	14,1%
	Non Appropriated fund civilian	Count	27	11	8	4	6	56
		% within Employment type	48,2%	19,6%	14,3%	7,1%	10,7%	100,0%
		% within Rate how supportive your boss is in allowing time off	43,5%	40,7%	26,7%	30,8%	35,3%	37,6%
		% of Total	18,1%	7,4%	5,4%	2,7%	4,0%	37,6%
	Appropriated fund civilian employee	Count	29	11	19	5	8	72
		% within Employment type	40,3%	15,3%	26,4%	6,9%	11,1%	100,0%
		% within Rate how supportive your boss is in allowing time off	46,8%	40,7%	63,3%	38,5%	47,1%	48,3%
		% of Total	19,5%	7,4%	12,8%	3,4%	5,4%	48,3%
Total		Count	62	27	30	13	17	149
		% within Employment type	41,6%	18,1%	20,1%	8,7%	11,4%	100,0%
		% within Rate how supportive your boss is in allowing time off	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	41,6%	18,1%	20,1%	8,7%	11,4%	100,0%

Figure 38. Employment category and supportiveness of boss. *(figure continues)*

(Figure 38 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,119[a]	8	,422
Likelihood Ratio	7,569	8	,477
Linear-by-Linear Association	,594	1	,441
N of Valid Cases	149		

a. 5 cells (33,3%) have expected count less than 5. The minimum expected count is 1,83.

Chi-square ($p = 0.422$, Pearson) indicated that "Rate how supportive your boss is in allowing time" and Employment Category are independent. "Rate how supportive your boss is in allowing time" and Employment Category are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.432$.

Figure 39 shows the correlation of *Q1-24: Are "How many hours do you work per week?" and Employment Category related?*

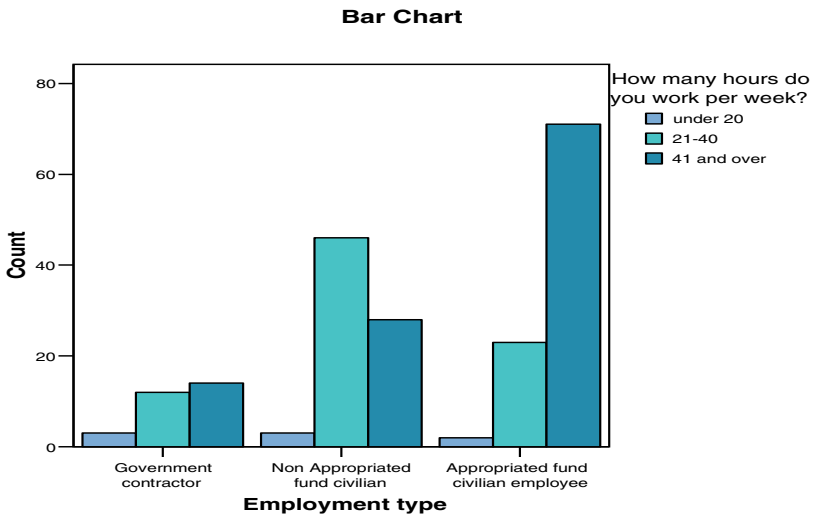


Figure 39. Employment category and hours worked per week. (*figure continues*)

(Figure 39 continued)

Employment type * How many hours do you work per week? Crosstabulation

			How many hours do you work per week?			
			under 20	21-40	41 and over	Total
Employment type	Government contractor	Count	3	12	14	29
		% within Employment type	10,3%	41,4%	48,3%	100,0%
		% within How many hours do you work per week?	37,5%	14,8%	12,4%	14,4%
		% of Total	1,5%	5,9%	6,9%	14,4%
	Non Appropriated fund civilian	Count	3	46	28	77
		% within Employment type	3,9%	59,7%	36,4%	100,0%
		% within How many hours do you work per week?	37,5%	56,8%	24,8%	38,1%
		% of Total	1,5%	22,8%	13,9%	38,1%
	Appropriated fund civilian employee	Count	2	23	71	96
		% within Employment type	2,1%	24,0%	74,0%	100,0%
		% within How many hours do you work per week?	25,0%	28,4%	62,8%	47,5%
		% of Total	1,0%	11,4%	35,1%	47,5%
Total		Count	8	81	113	202
		% within Employment type	4,0%	40,1%	55,9%	100,0%
		% within How many hours do you work per week?	100,0%	100,0%	100,0%	100,0%
		% of Total	4,0%	40,1%	55,9%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,648[a]	4	,000
Likelihood Ratio	28,234	4	,000
Linear-by-Linear Association	10,967	1	,001
N of Valid Cases	202		

a. 3 cells (33,3%) have expected count less than 5. The minimum expected count is 1,15.

Chi-square ($p = 0.000$, Pearson) indicated that "How many hours do you work per week?" and Employment Category are not independent. "How many hours do you work per week?" and Employment Category are

associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.000$.

Figure 40 shows the correlation of *Q1-25: Are "Rate your daily stress" and Employment Category related?*

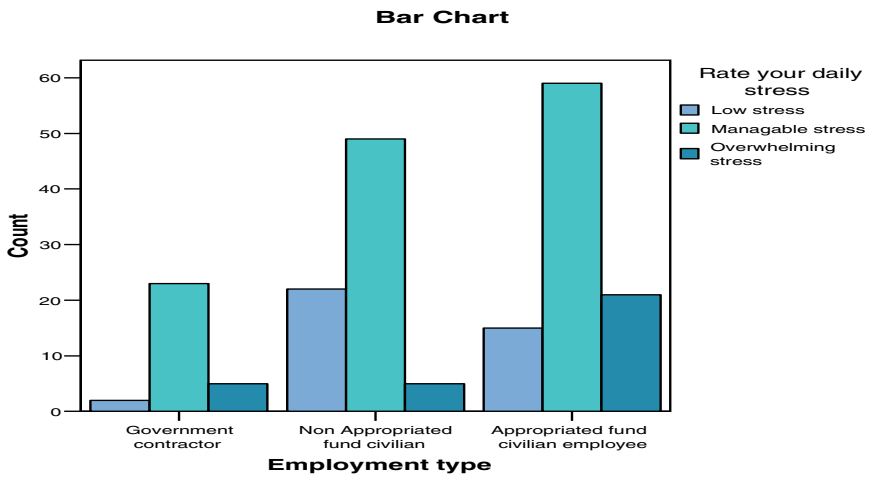


Figure 40. Employment category and daily stress. (*figure continues*)

(Figure 40 continued)

Employment type * Rate your daily stress Crosstabulation

			Rate your daily stress			
			Low stress	Managable stress	Overwhelming stress	Total
Employment type	Government contractor	Count	2	23	5	30
		% within Employment type	6,7%	76,7%	16,7%	100,0%
		% within Rate your daily stress	5,1%	17,6%	16,1%	14,9%
		% of Total	1,0%	11,4%	2,5%	14,9%
	Non Appropriated fund civilian	Count	22	49	5	76
		% within Employment type	28,9%	64,5%	6,6%	100,0%
		% within Rate your daily stress	56,4%	37,4%	16,1%	37,8%
		% of Total	10,9%	24,4%	2,5%	37,8%
	Appropriated fund civilian employee	Count	15	59	21	95
		% within Employment type	15,8%	62,1%	22,1%	100,0%
		% within Rate your daily stress	38,5%	45,0%	67,7%	47,3%
		% of Total	7,5%	29,4%	10,4%	47,3%
Total		Count	39	131	31	201
		% within Employment type	19,4%	65,2%	15,4%	100,0%
		% within Rate your daily stress	100,0%	100,0%	100,0%	100,0%
		% of Total	19,4%	65,2%	15,4%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,101[a]	4	,007
Likelihood Ratio	15,241	4	,004
Linear-by-Linear Association	,027	1	,870
N of Valid Cases	201		

a. 1 cells (11,1%) have expected count less than 5. The minimum expected count is 4,63.

Chi-square ($p = 0.007$, Pearson) indicated that Employment Category and "Rate your daily stress" are not independent. Employment Category and "Rate your daily stress" are associated. The data met the conditions for a chi-square test.

Second Line of Research: Number of Barriers

An overview of the Number of Barriers according to Employment Category is provided in this section.

Figure 41 shows the correlation of *Q2-1: Are Number of Barriers and Employment Category related?*

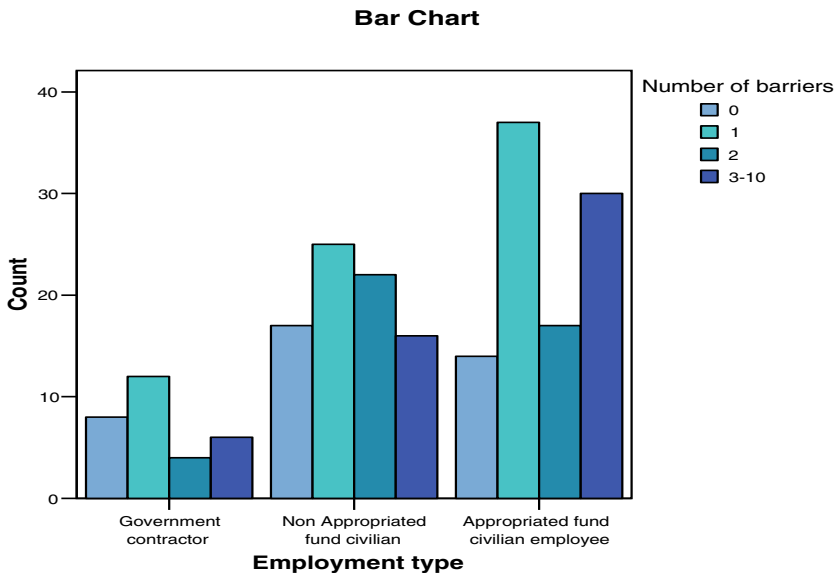


Figure 41. Number of Barriers and Employment Category.
(figure continues)

(Figure 41 continued)

Employment type * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Employment type	Government contracto	Count	8	12	4	6	30
		% within Employment typ	26,7%	40,0%	13,3%	20,0%	100,0%
		% within Number of barri	20,5%	16,2%	9,3%	11,5%	14,4%
		% of Total	3,8%	5,8%	1,9%	2,9%	14,4%
	Non Appropriated fun civilian	Count	17	25	22	16	80
		% within Employment typ	21,3%	31,3%	27,5%	20,0%	100,0%
		% within Number of barri	43,6%	33,8%	51,2%	30,8%	38,5%
		% of Total	8,2%	12,0%	10,6%	7,7%	38,5%
	Appropriated fund civilian employee	Count	14	37	17	30	98
		% within Employment typ	14,3%	37,8%	17,3%	30,6%	100,0%
		% within Number of barri	35,9%	50,0%	39,5%	57,7%	47,1%
		% of Total	6,7%	17,8%	8,2%	14,4%	47,1%
Total		Count	39	74	43	52	208
		% within Employment typ	18,8%	35,6%	20,7%	25,0%	100,0%
		% within Number of barri	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,8%	35,6%	20,7%	25,0%	100,0%

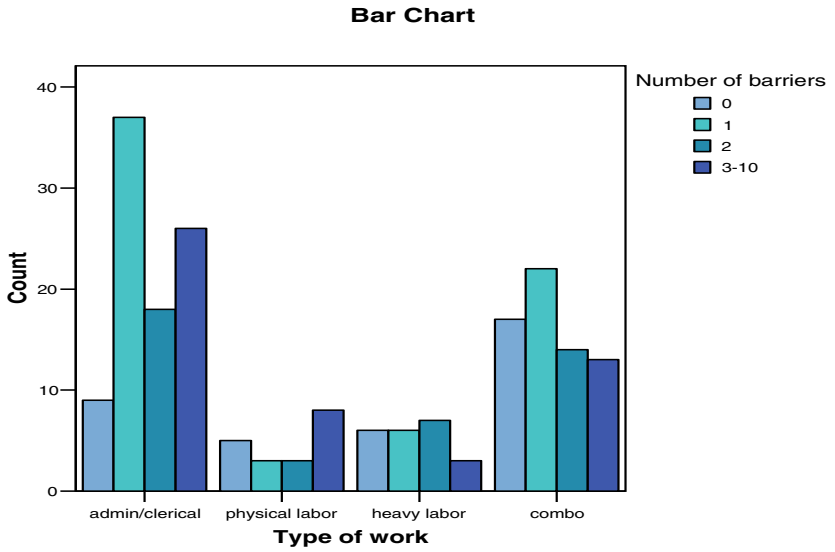
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,472[a]	6	,206
Likelihood Ratio	8,419	6	,209
Linear-by-Linear Association	3,118	1	,077
N of Valid Cases	208		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,63.

Chi-square ($p = 0.206$, Pearson) indicated that Number of Barriers and Employment Category are independent. Number of Barriers and Employment Category are not associated. The data met the conditions for a Chi-square test.

Figure 42 shows the correlation of *Q2-2: Are Number of Barriers and type of work related?*



Type of work * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Type of work	admin/clerical	Count	9	37	18	26	90
		% within Type of work	10,0%	41,1%	20,0%	28,9%	100,0%
		% within Number of barriers	24,3%	54,4%	42,9%	52,0%	45,7%
		% of Total	4,6%	18,8%	9,1%	13,2%	45,7%
	physical labor	Count	5	3	3	8	19
		% within Type of work	26,3%	15,8%	15,8%	42,1%	100,0%
		% within Number of barriers	13,5%	4,4%	7,1%	16,0%	9,6%
		% of Total	2,5%	1,5%	1,5%	4,1%	9,6%
	heavy labor	Count	6	6	7	3	22
		% within Type of work	27,3%	27,3%	31,8%	13,6%	100,0%
		% within Number of barriers	16,2%	8,8%	16,7%	6,0%	11,2%
		% of Total	3,0%	3,0%	3,6%	1,5%	11,2%
	combo	Count	17	22	14	13	66
		% within Type of work	25,8%	33,3%	21,2%	19,7%	100,0%
		% within Number of barriers	45,9%	32,4%	33,3%	26,0%	33,5%
		% of Total	8,6%	11,2%	7,1%	6,6%	33,5%
Total		Count	37	68	42	50	197
		% within Type of work	18,8%	34,5%	21,3%	25,4%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,8%	34,5%	21,3%	25,4%	100,0%

Figure 42. Number of barriers and type of work. (*figure continues*)

(Figure 42 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16,299[a]	9	,061
Likelihood Ratio	16,995	9	,049
Linear-by-Linear Association	4,387	1	,036
N of Valid Cases	197		

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is 3,57.

Chi-square ($p = 0.061$, Pearson) indicated that Number of Barriers and type of work are independent. Number of Barriers and type of work are not associated. The data did not meet the conditions for a chi-square test. Because of lack of memory, SPSS™ was not able to compute any exact test statistic.

Figure 43 shows the correlation of *Q2-3: Are Number of Barriers and gender related?*

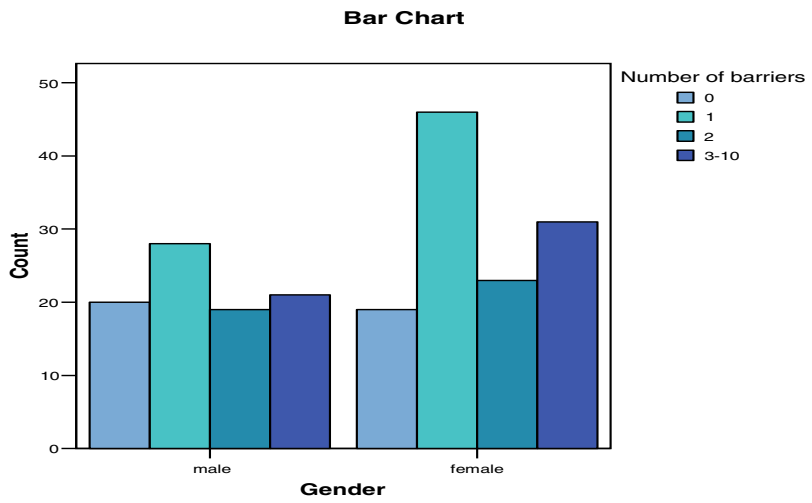


Figure 43. Number of barriers and gender. (*figure continues*)

(Figure 43 continued)

Gender * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Gender	male	Count	20	28	19	21	88
		% within Gender	22,7%	31,8%	21,6%	23,9%	100,0%
		% within Number of barrier	51,3%	37,8%	45,2%	40,4%	42,5%
		% of Total	9,7%	13,5%	9,2%	10,1%	42,5%
	female	Count	19	46	23	31	119
		% within Gender	16,0%	38,7%	19,3%	26,1%	100,0%
		% within Number of barrier	48,7%	62,2%	54,8%	59,6%	57,5%
		% of Total	9,2%	22,2%	11,1%	15,0%	57,5%
Total		Count	39	74	42	52	207
		% within Gender	18,8%	35,7%	20,3%	25,1%	100,0%
		% within Number of barrier	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,8%	35,7%	20,3%	25,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,113[a]	3	,549
Likelihood Ratio	2,105	3	,551
Linear-by-Linear Association	,351	1	,554
N of Valid Cases	207		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,58.

Chi-square ($p = 0.549$, Pearson) indicated that Number of Barriers and gender are independent. Number of Barriers and gender are not associated. The data met the conditions for a chi-square test. There were more females in the sample than males, but no statistical significance was disclosed. Females did not report more barriers to exercise then males or vice versa.

Figure 44 shows the correlation of *Q2-4: Are Number of Barriers and "How many hours do you work per week?" related?*

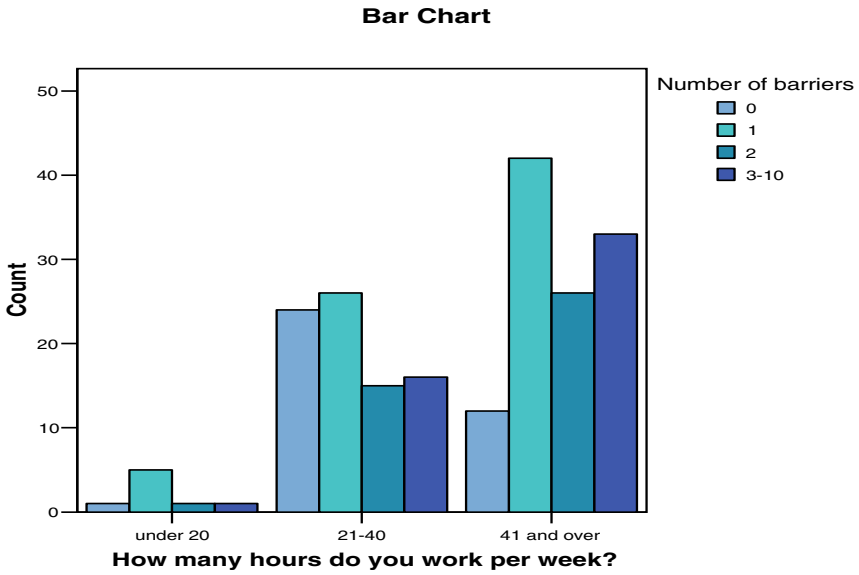


Figure 44. Number of barriers and hours worked per week. (*figure continues*)

(Figure 44 continued)

How many hours do you work per week? * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
How many hours do you work per week?	under 20	Count	1	5	1	1	8
		% within How many hours do you work per week?	12,5%	62,5%	12,5%	12,5%	100,0%
		% within Number of barriers	2,7%	6,8%	2,4%	2,0%	4,0%
		% of Total	,5%	2,5%	,5%	,5%	4,0%
	21-40	Count	24	26	15	16	81
		% within How many hours do you work per week?	29,6%	32,1%	18,5%	19,8%	100,0%
		% within Number of barriers	64,9%	35,6%	35,7%	32,0%	40,1%
		% of Total	11,9%	12,9%	7,4%	7,9%	40,1%
	41 and over	Count	12	42	26	33	113
		% within How many hours do you work per week?	10,6%	37,2%	23,0%	29,2%	100,0%
		% within Number of barriers	32,4%	57,5%	61,9%	66,0%	55,9%
		% of Total	5,9%	20,8%	12,9%	16,3%	55,9%
Total		Count	37	73	42	50	202
		% within How many hours do you work per week?	18,3%	36,1%	20,8%	24,8%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,3%	36,1%	20,8%	24,8%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,340[a]	6	,026
Likelihood Ratio	14,016	6	,029
Linear-by-Linear Association	7,397	1	,007
N of Valid Cases	202		

a. 4 cells (33,3%) have expected count less than 5. The minimum expected count is 1,47.

Chi-square ($p = 0.026$, Pearson) indicated that Number of Barriers and "How many hours do you work per week?" are not independent. Number of Barriers and "How many hours do you work per week?" are

associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.024$.

Figure 45 shows the correlation of *Q2-5: Are Number of Barriers and "Rate how supportive your boss is in allowing time off" related?*

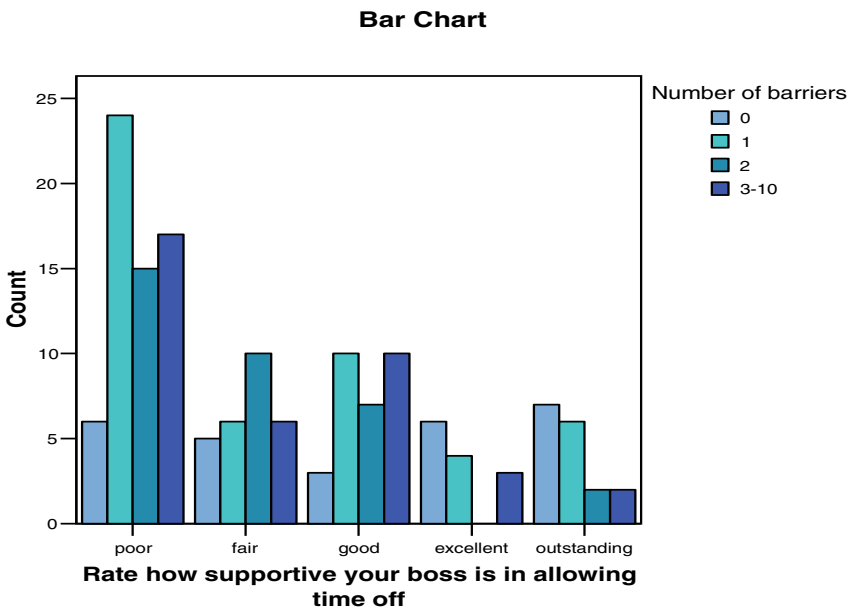


Figure 45. Number of barriers and supportiveness of boss. (*figure continues*)

(Figure 45 continued)

Rate how supportive your boss is in allowing time off * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Rate how supportive your boss is in allowing time off	poor	Count	6	24	15	17	62
		% within Rate how supportive your boss is in allowing time off	9,7%	38,7%	24,2%	27,4%	100,0%
		% within Number of barriers	22,2%	48,0%	44,1%	44,7%	41,6%
		% of Total	4,0%	16,1%	10,1%	11,4%	41,6%
	fair	Count	5	6	10	6	27
		% within Rate how supportive your boss is in allowing time off	18,5%	22,2%	37,0%	22,2%	100,0%
		% within Number of barriers	18,5%	12,0%	29,4%	15,8%	18,1%
		% of Total	3,4%	4,0%	6,7%	4,0%	18,1%
	good	Count	3	10	7	10	30
		% within Rate how supportive your boss is in allowing time off	10,0%	33,3%	23,3%	33,3%	100,0%
		% within Number of barriers	11,1%	20,0%	20,6%	26,3%	20,1%
		% of Total	2,0%	6,7%	4,7%	6,7%	20,1%
	excellent	Count	6	4	0	3	13
		% within Rate how supportive your boss is in allowing time off	46,2%	30,8%	,0%	23,1%	100,0%
		% within Number of barriers	22,2%	8,0%	,0%	7,9%	8,7%
		% of Total	4,0%	2,7%	,0%	2,0%	8,7%
	outstanding	Count	7	6	2	2	17
		% within Rate how supportive your boss is in allowing time off	41,2%	35,3%	11,8%	11,8%	100,0%
		% within Number of barriers	25,9%	12,0%	5,9%	5,3%	11,4%
		% of Total	4,7%	4,0%	1,3%	1,3%	11,4%
Total		Count	27	50	34	38	149
		% within Rate how supportive your boss is in allowing time off	18,1%	33,6%	22,8%	25,5%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,1%	33,6%	22,8%	25,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24,264[a]	12	,019
Likelihood Ratio	25,097	12	,014
Linear-by-Linear Association	6,937	1	,008
N of Valid Cases	149		

a. 8 cells (40,0%) have expected count less than 5. The minimum expected count is 2,36.

Chi-square ($p = 0.019$, Pearson) indicated that Number of Barriers and "Rate how supportive your boss is in allowing time off?" are not independent. Number of Barriers and "Rate how supportive your boss is in allowing time off?" are associated. The data did not meet the conditions for a chi-square test. Because of lack of memory, SPSS™ was not able to compute any exact test statistic.

Figure 46 shows the correlation of *Q2-6: Are "Have you ever used the CFP" and Number of Barriers related?*

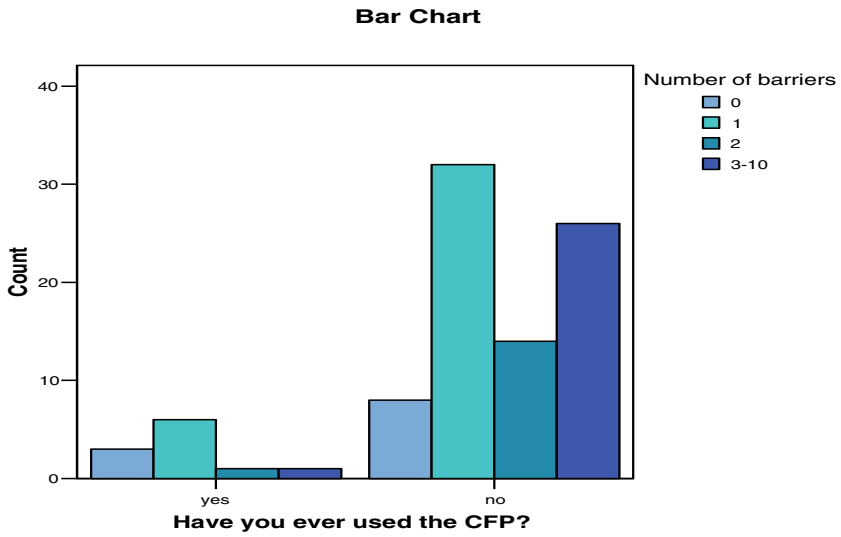


Figure 46. Number of barriers and use of CFP. (*figure continues*)

(Figure 46 continued)

Have you ever used the CFP? * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Have you ever used the CFP?	yes	Count	3	6	1	1	11
		% within Have you ever used the CFP?	27,3%	54,5%	9,1%	9,1%	100,0%
		% within Number of barriers	27,3%	15,8%	6,7%	3,7%	12,1%
		% of Total	3,3%	6,6%	1,1%	1,1%	12,1%
	no	Count	8	32	14	26	80
		% within Have you ever used the CFP?	10,0%	40,0%	17,5%	32,5%	100,0%
		% within Number of barriers	72,7%	84,2%	93,3%	96,3%	87,9%
		% of Total	8,8%	35,2%	15,4%	28,6%	87,9%
Total		Count	11	38	15	27	91
		% within Have you ever used the CFP?	12,1%	41,8%	16,5%	29,7%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	12,1%	41,8%	16,5%	29,7%	100,0%

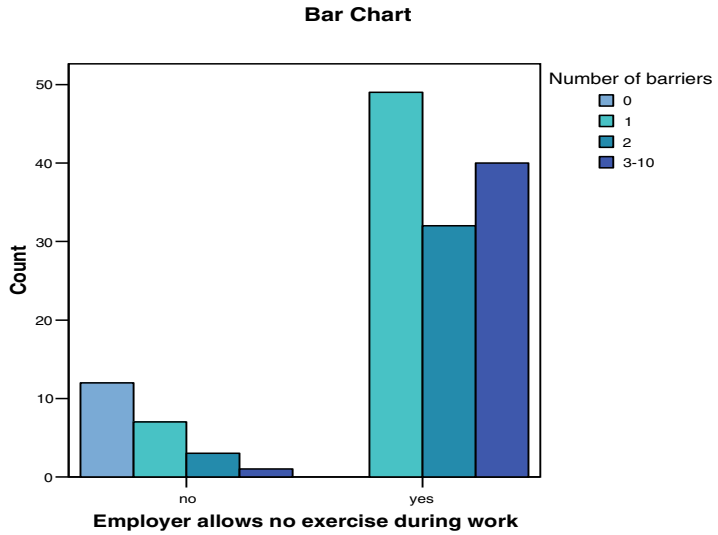
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,078[a]	3	,166
Likelihood Ratio	5,157	3	,161
Linear-by-Linear Association	4,715	1	,030
N of Valid Cases	91		

a. 4 cells (50,0%) have expected count less than 5. The minimum expected count is 1,33.

Chi-square ($p = 0.166$, Pearson) indicated that "Have you ever used the CFP?" and Number of Barriers are independent. "Have you ever used the CFP?" and Number of Barriers are not associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.139$.

Figure 47 shows the correlation of *Q2-7: Are "Employer allows no exercise during working hours" and Number of Barriers related?*



Employer allows no exercise during work * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Employer allows no exer	no	Count	12	7	3	1	23
during work		% within Employer allo no exercise during work	52,2%	30,4%	13,0%	4,3%	100,0%
		% within Number of bar	100,0%	12,5%	8,6%	2,4%	16,0%
		% of Total	8,3%	4,9%	2,1%	,7%	16,0%
	yes	Count	0	49	32	40	121
		% within Employer allo no exercise during work	,0%	40,5%	26,4%	33,1%	100,0%
		% within Number of bar	,0%	87,5%	91,4%	97,6%	84,0%
		% of Total	,0%	34,0%	22,2%	27,8%	84,0%
Total		Count	12	56	35	41	144
		% within Employer allo no exercise during work	8,3%	38,9%	24,3%	28,5%	100,0%
		% within Number of bar	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	8,3%	38,9%	24,3%	28,5%	100,0%

Figure 47. Number of barriers and employer not allowing time to exercise. *(figure continues)*

(Figure 47 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70,657[a]	3	,000
Likelihood Ratio	54,416	3	,000
Linear-by-Linear Association	31,100	1	,000
N of Valid Cases	144		

a. 1 cells (12,5%) have expected count less than 5. The minimum expected count is 1,92.

Chi-square (p = 0.000 Pearson) indicated that "Employer allows no exercise during working hours" and Number of Barriers are not independent. "Employer allows no exercise during working hours" and Number of Barriers are associated. The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced p = 0.000.

Figure 48 shows the correlation of *Q2-8: Are "Do you exercise more than two times per week?" and Number of Barriers related?*

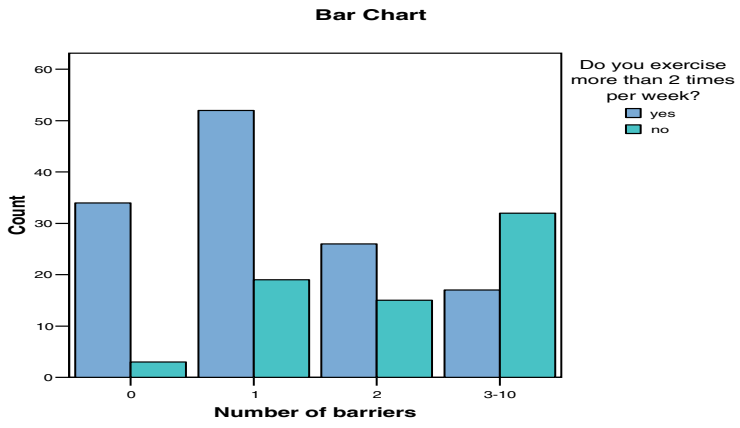


Figure 48. Number of barriers and days per week exercising. (*figure continues*)

(Figure 48 continued)

Do you exercise more than 2 times per week? * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Do you exercise more than 2 times per week?	yes	Count	34	52	26	17	129
		% within Do you exercise more than 2 times per week?	26,4%	40,3%	20,2%	13,2%	100,0%
		% within Number of barriers	91,9%	73,2%	63,4%	34,7%	65,2%
		% of Total	17,2%	26,3%	13,1%	8,6%	65,2%
	no	Count	3	19	15	32	69
		% within Do you exercise more than 2 times per week?	4,3%	27,5%	21,7%	46,4%	100,0%
		% within Number of barriers	8,1%	26,8%	36,6%	65,3%	34,8%
		% of Total	1,5%	9,6%	7,6%	16,2%	34,8%
Total		Count	37	71	41	49	198
		% within Do you exercise more than 2 times per week?	18,7%	35,9%	20,7%	24,7%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,7%	35,9%	20,7%	24,7%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33,774[a]	3	,000
Likelihood Ratio	35,597	3	,000
Linear-by-Linear Association	32,385	1	,000
N of Valid Cases	198		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 12,89.

Chi-square (p = 0.000 Pearson) indicated that "Do you exercise more than two times per week?" and Number of Barriers are not independent. "Do you exercise more than two times per week?" and Number of Barriers are associated. The data met the conditions for a chi-square test.

Figure 49 shows the correlation of *Q2-9: Are "If you do exercise, where do you exercise?" and Number of Barriers related?*

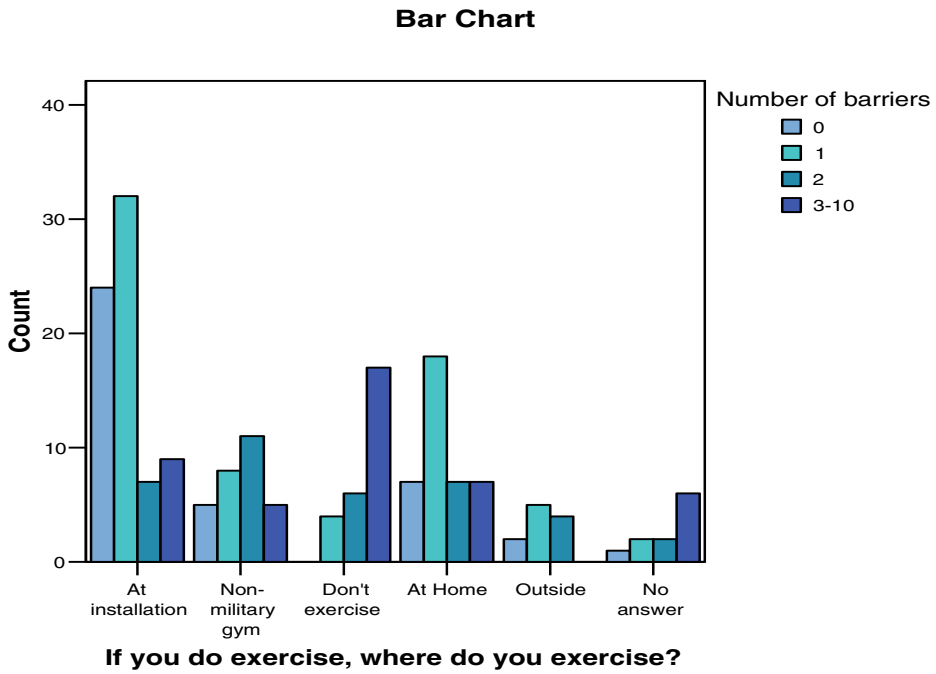


Figure 49. Number of barriers and where one exercises. (*figure continues*)

(Figure 49 continued)

If you do exercise, where do you exercise? * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
If you do exercise, where do you exercise?	At installation	Count	24	32	7	9	72
		% within If you do exercise, where do you exercise?	33,3%	44,4%	9,7%	12,5%	100,0%
		% within Number of barriers	61,5%	46,4%	18,9%	20,5%	38,1%
		% of Total	12,7%	16,9%	3,7%	4,8%	38,1%
	Non-military gym	Count	5	8	11	5	29
		% within If you do exercise, where do you exercise?	17,2%	27,6%	37,9%	17,2%	100,0%
		% within Number of barriers	12,8%	11,6%	29,7%	11,4%	15,3%
		% of Total	2,6%	4,2%	5,8%	2,6%	15,3%
	Don't exercise	Count	0	4	6	17	27
		% within If you do exercise, where do you exercise?	,0%	14,8%	22,2%	63,0%	100,0%
		% within Number of barriers	,0%	5,8%	16,2%	38,6%	14,3%
		% of Total	,0%	2,1%	3,2%	9,0%	14,3%
	At Home	Count	7	18	7	7	39
		% within If you do exercise, where do you exercise?	17,9%	46,2%	17,9%	17,9%	100,0%
		% within Number of barriers	17,9%	26,1%	18,9%	15,9%	20,6%
		% of Total	3,7%	9,5%	3,7%	3,7%	20,6%
	Outside	Count	2	5	4	0	11
		% within If you do exercise, where do you exercise?	18,2%	45,5%	36,4%	,0%	100,0%
		% within Number of barriers	5,1%	7,2%	10,8%	,0%	5,8%
		% of Total	1,1%	2,6%	2,1%	,0%	5,8%
	No answer	Count	1	2	2	6	11
		% within If you do exercise, where do you exercise?	9,1%	18,2%	18,2%	54,5%	100,0%
		% within Number of barriers	2,6%	2,9%	5,4%	13,6%	5,8%
		% of Total	,5%	1,1%	1,1%	3,2%	5,8%
Total		Count	39	69	37	44	189
		% within If you do exercise, where do you exercise?	20,6%	36,5%	19,6%	23,3%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	20,6%	36,5%	19,6%	23,3%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60,113[a]	15	,000
Likelihood Ratio	61,782	15	,000
Linear-by-Linear Association	11,014	1	,001
N of Valid Cases	189		

a. 8 cells (33,3%) have expected count less than 5. The minimum expected count is 2,15.

Chi-square (p = 0.000 Pearson) indicated that "If you do exercise, where do you exercise?" and Number of Barriers are not independent. "If you do exercise, where do you exercise?" and Number of Barriers are associated. The data did not meet the conditions for a chi-square test. Because of lack of memory, SPSS™ was not able to compute any exact test statistic.

Figure 50 shows the correlation of *Q2-10: Are "Have you ever exercised at your installation's FC?" and Number of Barriers related?*

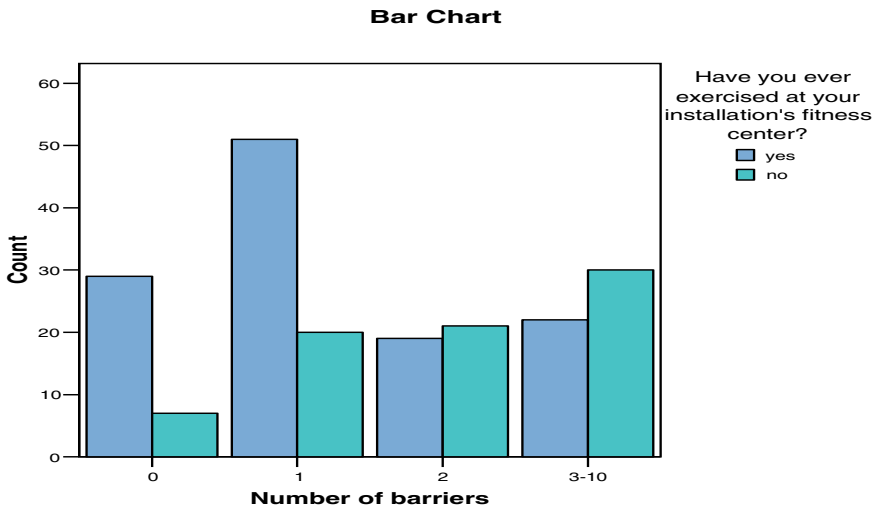


Figure 50. Number of barriers and use of the FC.
(figure continues)

(Figure 50 continues)

Have you ever exercised at your installation's fitness center? * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Have you ever exercised at your installation's fitness center?	yes	Count	29	51	19	22	121
		% within Have you ever exercised at your installation's fitness center?	24,0%	42,1%	15,7%	18,2%	100,0%
		% within Number of barrie	80,6%	71,8%	47,5%	42,3%	60,8%
		% of Total	14,6%	25,6%	9,5%	11,1%	60,8%
	no	Count	7	20	21	30	78
		% within Have you ever exercised at your installation's fitness center?	9,0%	25,6%	26,9%	38,5%	100,0%
		% within Number of barrie	19,4%	28,2%	52,5%	57,7%	39,2%
		% of Total	3,5%	10,1%	10,6%	15,1%	39,2%
Total		Count	36	71	40	52	199
		% within Have you ever exercised at your installation's fitness center?	18,1%	35,7%	20,1%	26,1%	100,0%
		% within Number of barrie	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,1%	35,7%	20,1%	26,1%	100,0%

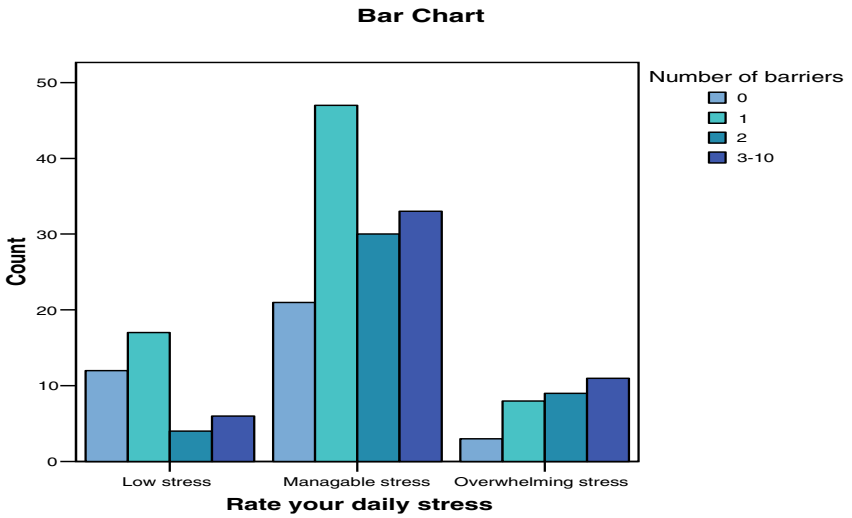
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,950[a]	3	,000
Likelihood Ratio	20,412	3	,000
Linear-by-Linear Association	18,576	1	,000
N of Valid Cases	199		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 14,11.

Chi-square (p = 0.000 Pearson) indicated that "Have you ever exercised at your installation's FC?" and Number of Barriers are not independent. "Have you ever exercised at your installation's FC?" and Number of Barriers are associated. The data met the conditions for a chi-square test.

Figure 51 shows the correlation of *Q2-11: Are "Rate your daily stress" and Number of Barriers related?*



Rate your daily stress * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Rate your daily stress	Low stress	Count	12	17	4	6	39
		% within Rate your daily stress	30,8%	43,6%	10,3%	15,4%	100,0%
		% within Number of barriers	33,3%	23,6%	9,3%	12,0%	19,4%
		% of Total	6,0%	8,5%	2,0%	3,0%	19,4%
	Managable stress	Count	21	47	30	33	131
		% within Rate your daily stress	16,0%	35,9%	22,9%	25,2%	100,0%
		% within Number of barriers	58,3%	65,3%	69,8%	66,0%	65,2%
		% of Total	10,4%	23,4%	14,9%	16,4%	65,2%
	Overwhelming stress	Count	3	8	9	11	31
		% within Rate your daily stress	9,7%	25,8%	29,0%	35,5%	100,0%
		% within Number of barriers	8,3%	11,1%	20,9%	22,0%	15,4%
		% of Total	1,5%	4,0%	4,5%	5,5%	15,4%
Total		Count	36	72	43	50	201
		% within Rate your daily stress	17,9%	35,8%	21,4%	24,9%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	17,9%	35,8%	21,4%	24,9%	100,0%

Figure 51. Number of barriers and daily stress. (*figure continues*)

(Figure 51 continued)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,623[a]	6	,049
Likelihood Ratio	12,793	6	,046
Linear-by-Linear Association	10,323	1	,001
N of Valid Cases	201		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,55.

Chi-square (p = 0.049 Pearson) indicated that "Rate your daily stress" and Number of Barriers are not independent. "Rate your daily stress" and Number of Barriers are associated. The data met the conditions for a chi-square test.

Figure 52 shows the correlation of *Q2-12: Are BMI and Number of Barriers related?*

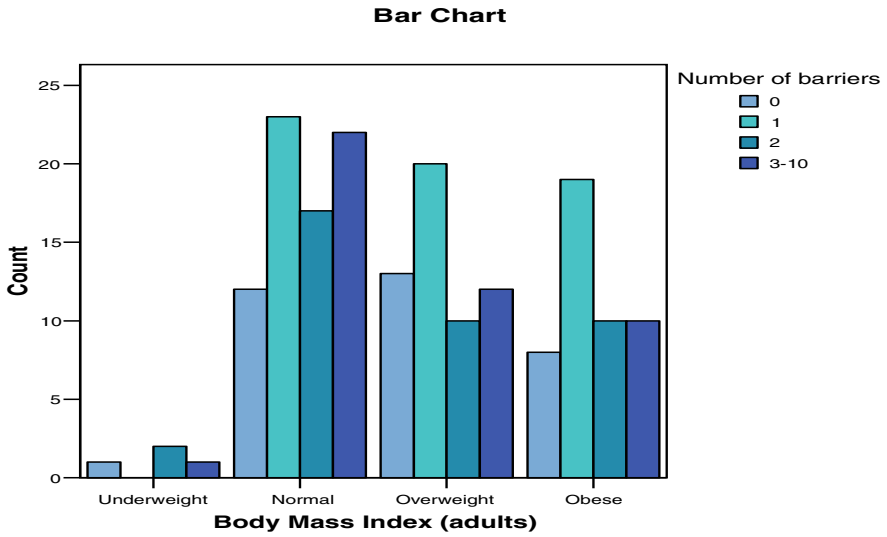


Figure 52. Number of barriers and BMI. (*figure continues*)

(Figure 52 continued)

Body Mass Index (adults) * Number of barriers Crosstabulation

			Number of barriers				
			0	1	2	3-10	Total
Body Mass Index (adults)	Underweight	Count	1	0	2	1	4
		% within Body Mass Index (adults)	25,0%	,0%	50,0%	25,0%	100,0%
		% within Number of barriers	2,9%	,0%	5,1%	2,2%	2,2%
		% of Total	,6%	,0%	1,1%	,6%	2,2%
	Normal	Count	12	23	17	22	74
		% within Body Mass Index (adults)	16,2%	31,1%	23,0%	29,7%	100,0%
		% within Number of barriers	35,3%	37,1%	43,6%	48,9%	41,1%
		% of Total	6,7%	12,8%	9,4%	12,2%	41,1%
	Overweight	Count	13	20	10	12	55
		% within Body Mass Index (adults)	23,6%	36,4%	18,2%	21,8%	100,0%
		% within Number of barriers	38,2%	32,3%	25,6%	26,7%	30,6%
		% of Total	7,2%	11,1%	5,6%	6,7%	30,6%
	Obese	Count	8	19	10	10	47
		% within Body Mass Index (adults)	17,0%	40,4%	21,3%	21,3%	100,0%
		% within Number of barriers	23,5%	30,6%	25,6%	22,2%	26,1%
		% of Total	4,4%	10,6%	5,6%	5,6%	26,1%
Total		Count	34	62	39	45	180
		% within Body Mass Index (adults)	18,9%	34,4%	21,7%	25,0%	100,0%
		% within Number of barriers	100,0%	100,0%	100,0%	100,0%	100,0%
		% of Total	18,9%	34,4%	21,7%	25,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,267[a]	9	,713
Likelihood Ratio	7,186	9	,618
Linear-by-Linear Association	1,430	1	,232
N of Valid Cases	180		

a. 4 cells (25,0%) have expected count less than 5. The minimum expected count is ,76.

Chi-square ($p = 0.713$, Pearson) indicated that BMI and Number of Barriers are independent. BMI and Number of Barriers are not associated.

The data did not meet the conditions for a chi-square test. Fisher's Exact Test produced $p = 0.687$.

Summary

This chapter presented the results of the research in three main sections: demographic information, a description of barriers to exercise, and the lines of research. Chapter 5 will present a summary of the findings, draw conclusions based upon the findings and show their implications for social change, offer recommendations for further study, and conclude with the researcher's reflections on the research process.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Overview of the Study

The purpose of this exploratory case study was twofold. First, it sought to identify associations between exercise participation and employment groups and to determine if there were barriers to exercise. Second, it was hoped that this research might serve as a pilot study, should the Army wish to follow up with a larger research project. The United States Army 221st Base Support Battalion in Wiesbaden, Germany (USA221st BSBWG), offers its civilian employees two main points of access to physical fitness: the CFP (CFP) and the fitness facility (FF), both of which, based on preliminary and post research information, are underutilized. This study is, thus, a reflection of the issues surrounding the underutilization of both the CFP and the FF at the USA221st BSBWG. While previous research has reported results for those who participate in employer-offered fitness/wellness programs, more or less as an advertisement for employer-sponsored wellness programs, this study provides insights about the people who are *not* exercising or participating minimally. This line of investigation was thought to be more productive for finding ways to help organizations motivate inactive workers to become more active—and healthy.

A triangular approach of exploration was adopted to collect data for the study: The researcher drew upon three lines of insight better to understand the issues. The first line of insight came from self–administered questionnaires. The second line of insight came from archived data with relevance for the current state of the CFP and FF. The third line of insight came from the researcher's observations of the programs and the community in general with respect to exercise participation and health promotion.

The major findings of the research were both positive and negative. From a positive perspective, 208 employees shared their insights for the purposes of this study. Of the respondents, 38.1% were using the fitness facility, and 65% reported their stress to be manageable. The average number of exercise days per week was 3. Of the sample, 53.7% were aware of the existence of the CFP. From a negative perspective, 87.9% of those eligible to participate in the CFP did not take advantage of this opportunity and only 25% of the target audience was aware of the CFP's existence. As barriers increase in number, utilization of the fitness facility and exercise in general decrease. Of the respondents, 60% rated their bosses as *less than good support* in allowing time off for exercise during working hours, and 55% work more than 40 hours per week. The sample overall was overweight with an average BMI of 27. The Number 1

reported barrier to exercise was consistently *employer does not allow time off during working hours*. The Number 2 reported barrier was *employees have no time to exercise*.

Interpretation of the Findings and Recommendations

This section provides both the researcher's interpretation of the findings and recommendations. It begins with the same format as chapter 4 to address the research questions. The section, then, draws conclusions based on the findings and offers recommendation for further study, as well as for the Army's policy, wellness approaches, CFP and fitness facility, morale, leadership, and exercise prescriptions.

Demographic Information

Univariate Description: Overview of the Sample in General

Summary of ratio-scaled variables. A negative result is that, overall, the sample does not look good in regard to the amount of body fat they are carrying.

Gender. A positive aspect is that the sample was nearly balanced in terms of gender (males: n = 88, or 42.5%; females: n = 119, or 57.5%).

Employment groups. A positive aspect is that, in terms of the major Employment Categories, NAF and AF, the sample was nearly balanced (NAF: n = 80, or 38.5%; AF: n = 98, or 47.1%).

Type of work. A positive aspect is that 107 out of 197 respondents (54.3%) perform some sort of passive physical activity during the course of the work day. A negative aspect is that 90 out of 197 (45.7%) of the respondents have administrative/clerical jobs. This is alarming because a healthy life style requires passive physical activity, and not merely at the gym.

Body Mass Index (BMI). A positive aspect is that 78 (43.3%) fell within the underweight or normal weight category. A negative aspect is that 102 (56.7%) were overweight or obese. This is a danger signal. It means that something needs to be done because, although overall the sample reported that they exercise three times per week, these scores raise questions about the quality and effectiveness of their exercise routines. These points about BMI are important to note:

- Formula for BMI is in pounds and inches.
- BMI = Weight [in pounds] X 703 divided by (Height [in inches] X Height [in inches]).
- BMI measures weight rather than body fat.

- BMI is a formula that attempts to gauge total body fat and weight-related health risks. However, BMI does not specifically measure body fat; therefore, people with large amounts of muscle tissue may appear overweight even though their risk of weight-related disease is low.
- The higher the BMI, the higher the health risk and the greater the risk of developing additional health problems.
- A BMI of below 18.5 is considered underweight, 18.5 - 24.9 normal, 25 - 29.9 overweight, and 30+ obese.

Bivariate Description

Type of work with Employment Category. Chi-square detected an association between type of work and Employment Category. As mentioned previously, these data also indicate that almost half of the distribution $n = 90$ (45.7%) has sedentary (administrative/clerical) jobs exclusively. Additionally, the AF Employment Category has more than twice as many sedentary respondents as the GC and NAF employment categories combined. In the other categories, NAF employees exceeded in numbers of *active jobs* (physical labor, heavy labor, or a combination) the numbers of the GC and AF employees combined. This is interesting

because the people who are most sedentary and have the highest BMI are also the target group of the CFP.

BMI with Employment Category. While the previous discussion provided insight into BMI status as it relates to the sample overall, cross-tabulation allows one to understand BMI status in relation to Employment Category. For government contractors it means that all Employment Categories report exercising three times per week. The quality of the exercise routines, however, is questionable because 56.7% of the sample is overweight or obese. Thus, the first recommendation would be to inquire into the experiences people have while at the gym (e.g., helpfulness of the staff, level of comfort) and determine whether they are getting an appropriate workout. A second recommendation would be to provide free evaluations for everyone who comes into the gym. Third, utilization and effectiveness of available nutrition programs need to be investigated.

Description of Barriers to Exercise

Number of Barriers Reported

When looking at the statistic over all, 74 (35.6%) had one barrier, 43 (20.7%) had two barriers, 28 (13.5%) had three barriers, 16 (7.7%)

had four barriers, 3 (1.4%) had five barriers, 1 (.5%) had six barriers, 2 (1%) had seven barriers, and 2 (1%) had nine barriers. It is important to note that 39 (18.8%) of the sample had no perceived barriers. This indicates that most (75.1%) of the sample has less than two barriers, while 25% had three or more perceived barriers. Unless these barriers are fairly substantial, such as child care or available time, it seems that most people could participate in exercise.

Individual Barriers Reported

While the previous discussion focused on the number of barriers, a multivariate graph distinguished the types and number of occurrences that a barrier was reported. It did not break out employment categories. The number of valid cases was 169, which represents approximately 81% of the total sample. This multivariate graph, constructed from responses concerning barriers, identified the most reported barriers. *Not having the time* netted 65 (16%) responses and represents a combination of managerial/individual barrier. *Employer not allowing time off for exercise* netted 121 (29.9%) responses of the managerial type of barrier. These were the most frequent occurrences. Also noteworthy was *no child care* with 24 (5.9%) responses.

Breakdown for Government-Contractor Employees (GC)

Of the 169 respondents, 22 were GC, 27.5% indicated *Employer not allowing time off to exercise* as a barrier (which is a management barrier); 12.5% cited *Not having the time* as a barrier (which is a management/ individual barrier combination); 10.4% reported *Don't like exercising* as a barrier (which is an individual barrier). Again, *Employer not allowing time off during working hours* ranked Number 1 on the list of barriers.

Breakdown for Nonappropriated-Fund Employees (NAF)

Of 169 respondents, 63 were NAF employees, 34.5% cited *Employers not allowing time off* as a barrier; 19.4% cited *Not having the time* as a barrier. Again, *Employer not allowing time off during working hours* ranked Number 1 on the list of barriers. *Not enough time* also ranked high on the list.

Breakdown for Appropriated-Fund Employees (AF)

Of the 169 respondents, 84 were AF employees, 27.5% indicated *Employer not allowing time off to exercise* as a barrier; 14.7% indicated *Not having time* as a barrier; 6.9% indicated *Not having child care* as a barrier. Of these, 6% indicated that they would be willing to pay if child care were provided. It is important to note that across all employment

categories the Number 1 reported barrier was *Employer does not allow time off to exercise,* and the Number 2 reported barrier was *Not having time to exercise*.

First Line of Research: Employment Category

In instances where the comparisons did not meet criteria for chi-square analysis, Fisher's Exact Test was conducted. Overall, the associations within the first line of research disclosed that only two instances of association were present, namely, Q1-24 and Q1-25. Questions Q1-23, 24, and 25 were not originally part of the analysis, but were later thought to shed more light on the research problem.

Q1-1 Are "If you exercise, where do you exercise?" and Employment Category related? No association was detected here; however, some other findings are of note. A positive aspect is that 38.1% (n = 72) of the respondents utilize the fitness facility. Although this is less than half, it is good news, especially in combination with other location categories for exercisers. The point is that 79.8% (n = 151) did report exercising. Again, however, the quality of their exercise is questionable because of their BMI. How might the Army view the 41.7% (n = 79) of respondents who are exercising elsewhere and the 14.3% (n = 27) who do not exercise at all?

While no association was detected, one must keep in mind that the only group analyzed for this questions was AF employees—the only employee group eligible. Of those who responded, 86.8% (n = 79) do not utilize the program. This could be connected with the previously reported barriers to exercise: (a) *Employer not allowing time off* and (b) *Not having time*. Additionally, one might connect it with analysis that will be presented subsequently, namely, (c) *Boss not being supportive in regards to exercising* and (d) *Excessive total work hours during the week*. Among contributing factors could also be cited that, under the current management philosophy, the CFP does not seem practical. It should be kept in mind that managers still have to grant permission for use of the CFP during working hours (which they may do, but are not compelled to do). An education program targeting managers and supervisors about the connection between physical activity and the bottom line (e.g., increased productiveness, decreased health care costs) might be indicated: Perhaps, the Army needs to keep better account of moneys spent on health care for civilian employees—this might alarm managers more than all other citations of losses combined.

Q1-3 Are "Are you aware of CFP?" and Employment Category related? No association was detected. A positive aspect is that 53.7% (n = 53.7%) know about the CFP. This indicates that the program is being

well-advertised. A negative aspect is that the targeted group is almost evenly divided: 25.4% (*n* = 45) knew about the program, and 23.2% (*n* = 41) did not. Perhaps more direct advertisement could be done to this group. Awareness about the program among the other categories (who do not have access) can also present a problem, as animosity may develop in those who feel short-changed. This is all the more reason to do more direct advertising to the target population or, better yet, open the program up to everyone. At least the full-time employees might be given this benefit; unfortunately, they are also the ones with the most time constraints.

Q1-4 Are Hours of Operation and Employment Category related? No association was detected. A positive aspect is that hours of operation does not appear to be a barrier for the sample overall.

Q1-5 Are Reliability and Employment Category related? No association was detected. A positive aspect is that reliability of programs does not appear to be a barrier for the sample overall.

Q1-6 Are Types of Programs and Employment Category related? No association was detected. A positive aspect is that types of programs offered does not appear to be a barrier for the sample overall.

Q1-7 Are Physically Uncomfortable and Employment Category related? No association was detected. A positive aspect is that feeling

physically uncomfortable does not appear to be a barrier for the sample overall.

Q1-8 Are Socially Uncomfortable and Employment Category related? No association was detected. A positive aspect is that feeling socially uncomfortable does not appear to be a barrier for the sample overall.

Q1-9 Are Staff and Employment Category related? No association was detected. A positive aspect is that perceptions about the Staff do not appear to be a barrier for the sample overall.

Q1-10 Are Poor Facility Maintenance and Employment Category related? No association was detected. A positive aspect is that poor facility maintenance does not appear to be a barrier for the sample overall.

Q1-11 Are Barrier #8 Don't like Exercising and Employment Category related? No association was detected. A positive aspect is that not liking to exercise does not appear to be a barrier for the sample overall.

Q1-12 Are Barrier #9 Don't have Time and Employment Category related? No association was detected. A positive aspect is that, when one looks at the sample overall, 68.6% (n = 142) do not see this as a barrier. However, it has a negative side in that for 31.4% (n = 65) of the sample it is significant and the second-most reported barrier in all employment categories.

Q1-13 Are Barrier #10 Happy with the Way I Look and Employment Category related? No association was detected. A positive aspect is that being happy with the way one looks does not appear to be a barrier for the sample overall.

Q1-14 Are Barrier #11 Bad Experience and Employment Category related? No association was detected. A positive aspect is that a prior bad experience with exercising does not appear to be a barrier for the sample overall.

Q1-15 Are Barrier #12 I'd rather Diet and Employment Category related? No association was detected. A positive aspect is that a preference for dieting does not appear to be a barrier for the sample overall.

Q1-16 Are Barrier #13 I'd rather take Supplements and Employment Category related? No association was detected. A positive aspect is that a preference for taking supplements does not appear to be a barrier for the sample overall.

Q1-17 Are Barrier #14 I'd rather have Plastic Surgery and Employment Category related? No association was detected. A positive aspect is that a preference for plastic surgery does not appear to be a barrier for the sample overall.

Q1-18 Are Barrier #15 No One Will Help Me and Employment Category related? No association was detected. Perhaps, people feel that

they can get help in achieving their wellness goals; however, based on the poor BMI scores, the quality of the help is questionable. The definition of *help* is also questionable. If it is defined as *access*, then the gym is doing a good job by providing convenient hours. However, if help is understood as *support from managers,* than it is a negative quantity because many of them do not allow time off.

Q1-19 Are Barrier #16 No Child Care and Employment Category related? No association was detected. A positive aspect is that no available child care does not appear to be a barrier for the sample overall. However, the significance of these 24 respondents will be presented subsequently.

Q1-20 Are Barrier #18 Attend Child Care and Employment Category related? No association was detected. Because the number of respondents to this question was low, a new survey should be administered to workers, especially to nonexercisers, to query if they would participate in exercise programs if child care were provided. It should also be enquired, if they would be willing to pay for child care. Based on this small response, it appears that all the respondents who saw lack of child care as a barrier would attend if child care were provided. A larger or a different sample might yield useful data.

Q1-21 Are Barrier #19 Pay for Child Care and Employment Category related? No association was detected; however, the following positive points were observed: Of the Yes/No ratio, AF employees marked almost exclusively Yes. Although they represent only a small portion of the sample, the Army might want to take note because child care might help their employees. As became apparent in the remaining data from 45 house spouses, 10 of them saw *having no time* as a barrier; 11 saw *no child care* as a barrier; and of those 11, nine indicated that they would attend if child care were provided. Six of the 11 indicated that they would pay for the service. Because only a few people in the community are being affected by this barrier, perhaps discounted child care could be provided; then, the government would not have to make a large investment in a child care center.

Q1-22 Are Barrier #20 Employer Allows No Exercise During Working Hours and Employment Category related? No association was detected; however, the following positive points were observed: The responses indicate that bosses among all employment groups are supportive (84%; n = 121). A negative aspect is that the next result—Frequency of Exercise and Quantity of Hours reported—conflicts with this response, and it is more believable because it is based on the BMI. When the researcher had the opportunity to converse with people as they were filling out a survey,

a frequent comment was that, even if they were eligible for the CFP and even if they were lucky enough to be granted permission to attend, the way to the wellness/fitness program would still not be clear. The mentality is such that, if they did not complete their tasks, they would not be allowed to leave. In other words: Even if their bosses had already signed off that they could leave Mondays, Wednesdays, and Fridays from 13:00-14:00 to exercise, they would still have the barrier of organizationally imposed task completion as a condition of compliance. This condition, by the way, is not written into the contract.

Additional Question/Barrier Dichotomies Studied

These dichotomies were added to broaden understanding and are above and beyond those required by the research proposal.

Q1-23 A Barrier #21 Rate How Supportive your Boss Is in allowing time off and Employment Category related? A negative aspect is that over 59.7% (*n* = 89) rated their bosses' support as *less than good*. This conflicts with the earlier responses. Again, perhaps, some training courses need to be offered to leaders about the connection between healthy employees and bottom-line profits. Often, government employees do not see the connection because they do not receive an annual report as issued by many companies; thus, their perspective may be too narrow or skewed.

Q1-24 Are "How Many Hours do you Work per Week?" and Employment Category related? An association was detected. A negative aspect is that different hours are worked per week in different Employment Categories. In the Appropriated-Fund category, over 55.9 % (*n* = 113) work over 40 hours per week. Of those, 35.1% work over 40 hours per week and have the most sedentary jobs (administrative/clerical). They also have the highest BMI. These 3 factors put the AF category at an exceptionally high risk. Because they are the people who appear to need it the most and are the group with access to

the CFP, it would seem logical that Army leaders would give them time off to exercise. Again, there needs to be more education for managers because they have the power to give at least the AF employees time off. As for the rest of the sample, the managers need to consider if overtime work (whether the Army must pay for it or not) is financially smart, considering its cost in regard to quality of life, morale, and productivity. Perhaps, this overtime should be spent in the gym. Perhaps, this would have positive effects on productivity for the next work day. If employers will not allow employees time off during the work day, they need to stop cutting into personal time that could be better spent without guilt.

Q1-25 Are Rate your Daily Stress Level and Employment Category related? An association was detected. A positive aspect is that 66.2% (n = 131) of the sample reported that they had manageable stress. Of the sample, 15.4% (n = 31) stated that they were overwhelmingly stressed. A negative aspect is that the AF employees were more stressed than other employee categories, and their proportion of overwhelming stress is the highest for all groups. In addition to the comments they made, the AF employment group seemed extremely tense. They need, as indeed do all employees, an opportunity to release the built-up tensions of the day.

Second Line of Research: Number of Barriers

Seven associations were detected—Q2-4, Q2-5, Q2-7, Q2-8, Q2-9, Q2-10, and Q2-11. They are described in the following sections.

Q2-1 Are Number of Barriers and Employment Category related? No association was detected. A negative aspect is that 81.2% (*n* = 169) of the sample is experiencing barriers. Perhaps, programs, such as the CFP, should be open to all. However, it should also be made mandatory for supervisors to allow participation without any retributions for the employee.

Q2-2 Are Number of Barriers and type of work related? No association was detected. A negative aspect is that, compared to the other employment groups, physical and administrative work had the highest percentage of barriers, with 42.1% (*n* = 8) and 28.9% (*n* = 26), respectively. From an overview of types of workers who are having barriers across all Employment Categories, it is obvious that administrative employees need to get more exercise.

Q2-3 Are Number of Barriers and Gender related? Females encountered more barriers than males. Perhaps more obligations are placed upon them throughout a day filled with so-called wifely duties.

Q2-4 Are Number of Barriers and Number of Hours Worked per Week related? An association was detected. The more hours people

worked, the more barriers they experienced and vice versa. Again, employees need to leave work and be empowered to exercise as a form of recreation. Too much time is being displaced in work. As explained in chapter 1, there could be an epidemic of *presenteeism* within the military civilian work force. They should not be treated as if they were on 24-hour duty like soldiers.

Q2-5 Are Number of Barriers and Rate How Supportive your Boss is in allowing time off to exercise related? An association was detected. The more supportive the boss is in allowing the employees to exercise, the less barriers are being reported. Again, managerial support for exercise needs to be made mandatory, not left to the managers' discretion.

Q2-6 Are "Have you ever used the CFP?" and Number of Barriers related? No association was detected. Again, the AF employees are the only employees who are eligible for the CFP. Therefore, their data are the only data displayed. A negative aspect is that, out of 91 barriers reported, 80 (87.9%) came from AF employees—who had never used the CFP. Previous data indicated that this and other groups are aware of the program's existence; however, there definitely exist barriers to access (e.g., supportiveness of the boss, excessive work hours). Barriers are indeed limiting access, and again, the support must go beyond mere theoretical support and become actual support.

Q2-7 Are Employer Allows Time Off during Work and Number of Barriers related? An association was detected. A negative aspect is that these data suggest that the people who have supportive bosses, nevertheless, experience the most barriers. Again, the definition of *support* needs to be spelled out and, then, support needs to be enforced.

Q2-8 Are "Do you exercise more than two times per week?" and Number of Barriers related? Associations were detected. A negative aspect is that the more barriers, the less likely it is that people will exercise two times per week. The data indicate that people who have more than two barriers are less likely to exercise.

Q2-9 Are "If you exercise, where do you exercise?" and Number of Barriers related? Associations were detected. Few barriers means that people will exercise at installations or at home. Many barriers mean that, if one is nonmilitary personnel, one does not exercise. Although many people reported that they would exercise despite a number of barriers, it is clear that, as the number of barriers increases, the number of people who exercise decreases. After two or more barriers, 9% will not exercise at all, 8.5% will use the installation's gym, and 7.4% will use their home gym. More than two barriers equals underutilization of FC and other means. Again, one must address as many management-imposed barriers as possible. Once people are left with primarily individual barriers, then

the responsibility for their health status rests squarely with the individual. Then, perhaps, it could be made a condition of employment that a certain health status be maintained. On the surface, this might seem discriminatory; however, in reality, these people must be fit to be able to serve their employer, the Army.

Q2-10 Are "Have you ever exercised at your installation's gym?" and Number of Barriers related? An association was detected. Employees have a tendency not to exercise at their installation as their barriers increase. This might include not exercising at all! The same recommendations obtain as in the preceding sections.

Q2-11 Are Rate your Daily Stress Level and Number of Barriers related? Associations were detected. This means, the more stress an individual experiences, the more barriers he or she stated.

Q2-12 Are BMI and Number of Barriers related? No associations were detected. However, the fact that there were so many overweight people in the sample is a big concern—56% were overweight. Yet, many of the overweight, and even the obese people, reported no barrier or only one barrier to exercise. Although BMI could indicate some state of good training (i.e., great muscle mass), it is more likely that, here, it points out that the people are, generally, carrying too much weight. Two

possibilities should be considered: Barriers lead to overweight, or overweight leads to more individual (perhaps, psychological) barriers.

To summarize, the percentage of obese people must be considered alarming. Because obesity was defined as a *health risk*, these employees, regardless of how many barriers they may be experiencing, simply must be induced to exercise.

Conclusion and Recommendation

Basic Policy Recommendations for the Army

The Army's general approach to wellness. The problem with the Army's wellness initiatives is that they insufficiently meet the needs of the majority of the civilian population (which means, almost exclusively, civilian employees and their families in most military communities). The fitness opportunities offered by the Army are soldier-focused, and although the appropriate departments utilize the right language to claim that they target the entire population, it is evident in their programming that their true focus is the soldier.

In its *Framework for Taking Care of the Army*, the Army defined well-being as the personal state—physical, material, mental, and spiritual—of soldiers and civilians and their families who contribute to

the preparedness to perform the Army's mission (Burlas, 2002). In this framework, the soldier is without any doubt the centerpiece.

The Center for Health Promotion and Prevention Medicine (CHPPM, 2005), for example, is primarily concerned with promoting readiness by safeguarding the health of U.S. soldiers. Brig. Gen. Sculley (CHPPM, 1998) stated, "We want our soldiers to function at their peak, no matter what environment they're in" (p. 1). Clearly, the key word of focus is *soldiers*, not anyone else. Sculley went on to state, "CHPPM's main objective is to maximize *soldiers'* effectiveness by minimizing health risks while promoting personal health and wellness practices" (p. 1). This focus on the soldier would be fine if the Army were not also responsible for paying the health care costs of many civilian employees; thus, costing the rest of society dearly. Morale, welfare, and recreation (i.e., the MWR program) has always had the same focus since its inception in the late 1800s—the soldier. Garrett (n.d.) stated,

> In a nutshell, sports helped to promote and maintain military efficiency and moral. You will note in all of our mission statements, there is always something said about mass participation. These statements stem from the leaders concerns about the troops indulging in the use of liquor and prostitution during their leisure time and the lack of organized recreation and sports activities. (p. 1)

The provision of MWR services to family members and the civilian workforce has always been a by-product of providing the services to

soldiers. Civilians get the residuals, not the cream of the crop. In other words: Army programs are blanket operations that are soldier-centric. Therefore, the Army is doing reasonably well in ensuring that the active duty soldier is able to maintain his or her health. However, the Army is not doing equally well in ensuring that its civilian employee population is physically healthy, nor is it held accountable for it. This presents a problem for the Army because it is financially responsible for the well-being of its civilian community members.

The CFP and the fitness facility. The main problem with the CFP is its bureaucratic nature. First, the worker's boss has to sign off. Then, the participant must get the physical assessment. Next, he or she has to interface with a facility that is basically on auto-policy (Department of the Army Message R261652ZMAR96, 1996, p. 1).

The FC's major problem is that it puts the onus of becoming fit almost solely on the participant (who may or may not also participate in the CFP)—all that is being provided is the facility. This is, generally, fine for the soldiers, who have some background in fitness training. However, the average civilian does not. Both wellness opportunities create internal program barriers, and they compound one another's barriers as well. The CFP staff only does assessments, while the fitness facility only provides access. Although both entities are overseen by the government, they are

not working in concert with one another, and the customer ultimately loses. Therefore, it is recommended that a transformational partnership be formed between these two organizations, which could be accomplished fairly easily because their underlining mission is a shared one—helping people to become and stay fit. Perhaps, the CFP could even be housed in the FC. For example, the MWR is responsible for providing leisure and recreational activities for soldiers, civilian employees, and family members assigned to installations across the globe. The mission of the MWR is to provide wholesome and stimulating programs (Galloway, personal communication, June 4, 2002). The MWR fitness facilities, via their staffs, personal trainers, and equipment, could take on the responsibility of ensuring that all employees who are given the opportunity to use the CFP are provided with the requisite knowledge to exercise successfully. Such a transformational leadership initiative might ameliorate the high dropout rate that follows each sign up. People run through the doors, get assessed, and, receiving no support from supervisors or fitness facility staff, become discouraged and drop out.

The Army should join with HR departments across the globe in keeping a tally of expenditures for sick days and health care costs, as well as how they correlate in terms of physical activity, or lack thereof, with respect to civilian communities. Were the Army to do this, it might

be compelled to seek solutions, such as funding more preventive health programs with adequate staffing to assist participants free of charge, just as the Marine Corps does. Although the Army's gym staff is frequently in possession of the personal trainer certification, they sadly do nothing more than clean the gym and hand out towels. If they do provide personal training, it is strictly off the record.

Morale and Leadership Concerns when Transforming into a Healthy Organization

Today, employees consider organizational fitness opportunities as an important fringe benefit. Companies are finding that providing such benefits not only saves them money, but also wins the appreciation and loyalty of employees (McShane & von Glinlow, 2000). However, as previously mentioned, motivating employees to participate is the real challenge. Shepherd thought that mere participation might not be enough; he suggested that "enthusiasm is needed to achieve health benefits" (as quoted in Dreyfuss, 1999, p. E4).

These findings seem to suggest a number of questions: How will the programs motivate employees to participate? How can leadership style be motivational in health promotion initiatives? Will the proposed programs make physical activity nonthreatening and motivate employees

to become active? Discussed briefly below, these are important questions that will have to be answered so that decision makers who provide health programs are armed with the necessary facts and details about staffing the site; maintaining the health promotion program and policies; recruiting and retaining participants; providing culturally sensitive programming to address the needs of a clientele diverse in age, race, gender, and ability; and maintaining the FC itself. In addition, employers need to ask how the proposed program will educate employees about proper diet (Mormando, 2000, p. 49).

1. How will the proposed program motivate employees to participate? Because simply knowing the benefits of exercise does not guarantee participation, health promotion plans must address strategies for motivating employees to adopt those plans. If the employee does not participate, there simply will be no benefit for either the employee or the employer. On a national scale, a number of organizations have set broad goals for improving individual health. For example, the U.S. Public Health Service includes physical activity and fitness as the nation's first major health initiative to improve the health and well-being of Americans (Francis, 1999). Moreover, Francis (1999) suggested that such strategies should focus not only on initiating activity, but also on maintaining activity. While many people begin fitness programs enthusiastically,

Francis (1999) noted, 50% of those who begin exercise programs stop within the first 6 months. Organizational leaders need to understand that the fitness industry does not advertise the exercise dropout rate. Instead, as an indicator of health, the industry exploits how much membership has increased. These statistics are deceiving because they show only the desire to become healthy, not the result. Even though gym membership is increasing on the national scale, obesity is increasing at a higher rate. The challenge for national organizations—as well as private organizations, such as gyms and work-site FCs—is motivating people to adopt long-term physical activity into their daily lives.

Many real and perceived barriers to exercise exist. In this study, the researcher assumed that access barriers would not be a problem because all community members surveyed have access to exercise facilities at little or no cost to the employee. The barriers to be considered—whether merely perceived or real, practical or emotional—are motivational barriers and include such factors as poor health, inadequate support from supervisors or exercise leaders, unsuitable facilities, and physical limitations. These motivational barriers may be central to the problem of exercise participation or nonparticipation, and uncovering and transforming negative perceptions of health maintenance is essential. Thus, motivational behaviors should be the prime focus for

health promoters because it has been established that motivational barriers are a given. Managers and leaders need to know how to combat the lack of participation in their wellness programs.

Humans, as physiological beings, seek equilibrium. High blood pressure, stress, and weight gain are all signals that the body is not in equilibrium and that it is not comfortable with its current state. Burrows, Eves, and Cooper (1999) suggested, "People are motivated to take care of themselves because it makes them feel better and improves their overall health . . . it gives them a sense of achievement" (p. 64). Maslow's hierarchy of needs (Appendix A) provides some explanation about why a person chooses not to exercise. If the most basic needs, such as food and shelter, are not met, an individual may not have time to meet additional needs, even if he or she has been educated about the benefits of exercise. Moreover, even if employers make it easy for employees to exercise by offering adequate compensation, convenient access, and enough time, employees may still not participate if exercise is not a part of their value or belief system. Instead, they may see their needs shift toward something else, such as spending more time with their children—a Maslowian love and belongingness need.

Health promoters[5] may have to convince individuals to adopt health into their value system. The health belief model, a cognitive theoretical model developed during the 1950s, tries to explain how people can be motivated to engage in health-seeking behavior (Huff & Kline, 1999). The model postulates that the inner world of a person determines his or her actions, while the environment influences the situation only in so far as it can influence a person's inner perceptions. The health belief model is composed of four constructs: (a) perceived personal susceptibility to a negative health event, (b) perceived severity of the condition, (c) perceived benefits of taking action against the threat, and (d) perceived barriers to taking action.

Self-efficacy is a prime factor governing health-seeking behaviors in the health belief model (Huff & Kline, 1999). Bandura (1977) suggested that feelings of self-efficacy are essential for acquiring and retaining new behavior patterns, assuming, of course, that individuals are also given the tools and knowledge to perform new behaviors. Bandura identified a linear relationship between self-efficacy and motivation, suggesting that "given appropriate skills and adequate incentives" (p. 194), people were

[5] As shown in Figure 1, family members, leaders in the fitness field, leaders in organizations, grocery store owners, insurance companies, and friends are all defined as *health promoters*. The end product of motivational activity—participation—depends on understanding and mobilizing a multitude of influences.

better able to sustain their efforts in the face of stressful situations if they also had sufficient belief in their ability to succeed.

For example, if an individual participating in a wellness program is given a membership for the local gym, that individual likely recognizes the health concerns related to his or her obesity and has decided to address the issue through exercise. This person, then, finds his or her old gym shoes and workout clothes and takes off for the gym. With the best of intentions, the individual walks through the front door, flashes a membership card, and proceeds to the gym floor. After attempting to use a couple of exercise machines and only 10 minutes in the gym, the individual walks out of the FC and likely never returns. The issue here is efficacy. As the person was in the gym, he or she may have looked around and noticed all the fit and trim patrons, not to mention the complex array of confusing equipment, and become completely disheartened about his or her own lack of knowledge and current capabilities. Without proper training or counseling, the level of self-efficacy of such persons does not allow them to overcome their perceived limitations. After a mere 10 minutes, they leave the facility discouraged, never to return.

Cultural values and beliefs also play a role in self-efficacy. For example, an individual may have greater belief in his or her ability to

adopt a behavior if that behavior is supported by his or her culture. Therefore, leaders must make sure that the programs offered to employees address individuals cultural needs, if the employees are to acquire positive health attitudes and make long-term changes in behavior. Blanket programming is also ineffective to the extent to which it fails to consider an individual's intrinsic and extrinsic motivators. Intrinsically, people may be motivated to participate in physical activity because the activity feels good or is rewarding. Extrinsic support for exercise may come from colleagues, friends, family, and superiors (Yorke & Galdwin, 1999). Naiper and Gershenfeld (1999) suggested that extrinsic factors, especially group support, can be a powerful motivator. "We participate in groups because we believe that in doing so, we will derive more satisfaction than if we did not participate or belong" (p. 172). Whether intrinsic or extrinsic, individual or group, motivation plays an essential role in guiding individual behavior. Tawney (2000) suggested "developing a program that takes into account the [participant's] needs, attitudes, interests and the overall health benefits" (p. 526). Leaders must ask potential health service providers to do just that.

2. How can leadership style be motivational in health promotion initiatives? Leadership style is important if employees are going to commit to a long-term health-improvement program. Leaders must not only

ensure that they provide access to high-quality and culturally sensitive FCs, but also be fit themselves and verbally encourage employee participation. In other words: The leadership style should be transformational. Leaders also must work toward ensuring that group exercise leaders, personal trainers, and other counselors who come into contact with the participants will adjust their leadership approach in ways that communicate effectively and encourage and motivate individual participation.

Leadership style may range from directive to delegative, depending on the participant's personality and needs. In other words: Leadership style should be situational in order to be effective. Yorke and Galdwin (1999) adopted Kenneth Blanchard's model of situational leadership for personal trainers and fitness counselors, suggesting that this approach would help clients to solve their problems more effectively. However, to adopt an appropriate leadership style, providers must assess both ability and willingness on the part of the client. Ability includes the client's skills knowledge with regard to fitness and wellness, whereas willingness includes motivation and confidence in one's ability to change and perform a behavior. Yorke and Galdwin identified four possible leadership styles: (a) telling (directive) for the unable/unwilling client, (b) counseling (directive and supportive) for the unable/willing client, (c)

participating (low directive and problem solving) for the able/unwilling client, and (4) delegating (goal-oriented motor performance) for the able/willing client.

Additionally, when motivating employees to become active, companies should use varied communication strategies, such as putting health promotion advertisements into organizational intranet announcements or use paycheck stuffers, posters, and newsletters. This constantly campaigning leadership style reminds employees that the organization supports and encourages healthy lifestyles within the organization. Meletis (2000) suggested that the more messages employees receive about preventive health measures, the more likely they are to take action. Miller (2000) stated that leaders "may not be able to influence the entire organization, but they can change their departments" (p. 10). Ideally, this campaigning leadership style will lead to organizational change and, ultimately, to change in societal views.

3. Will the proposed program make physical activity nonthreatening and, thus, motivate employees? Tim Clarke, a YMCA director, discussed the importance of making physical activity nonthreatening (cited in Myers, 1999). "When we're able to get them to come through the door, we're able to show them a program that will not be so threatening so they can feel comfortable and willing to continue in their pursuit of a healthier

lifestyle" (Clark, quoted in Myers, 1999, p. 25R). Many people will not take this first step because, as McMurdo (2000) suggested, they have a "misconception that to reap health benefits, continuous, vigorous exercise (athletics, jogging, or squash) is required" (p. 1149)—a misconception countered by Pratt (1999) and others. For example, Speed and Shapiro (2000) stated, "Significant improvements in physical fitness in patients with cardiac disease can occur at lower doses than those recommended for the general population, particularly in those who are in poor condition" (p. 1208).

Henderson, Clancy, and Little (1999) reminded program planners that creating fun activities can be the key to reducing participant intimidation and encouraging participation. "Common sense tells us that when people have a choice, they undertake an activity because they anticipate it will be fun or enjoyable" (p. 44). Enjoyment also involves cognitive elements, such as goal setting, the ability to concentrate on the immediate task, and receiving immediate feedback on success. In addition, enjoyment involves affective elements in which individuals act with deep and effortless involvement, thus feeling a sense of control over their actions and effectiveness, as explained by Henderson et al. Clarke (cited in Myers, 1999) supported this notion and suggested that the

health professional should "create exercise programs designed for maximum enjoyment" (p. 25R).

Amount of Exercise Needed by Employees to Reap Wellness Benefits

According to the American Council on Sports Medicine (ACSM, 2000), the CDC (2002), and The President's Council on Physical Fitness and Sports (PCPFS, 2002), every adult American should accumulate 30 minutes or more of moderate-intensity activity over the course of the day. Dr. Gregory Heath, a CDC epidemiologist, noted, "Increased levels of regular physical activity is related to the prevention of premature heart disease" (quoted in McShane & von Glinlow, 2000, p. 59). These guidelines do not call for 30 minutes of continuous activity; rather, the guidelines indicate that activity can be broken down into 10-minute segments (ACSM, 2002; CDC, 2002; PCPFS, 2002). People can go for 10-minute walks three to four times a day and have as great a benefit in losing weight as setting aside 40 minutes to do exercise (Gaesser & Dougherty, 2001; Hagloch, 2001; Staying on Track, 2000, p. 15).

It is important to add that exercise does not necessarily have to be traditional exercise, such as walking or running. It could be a leisure activity that one enjoys. German researchers at the Center for Cardiovascular Diseases in Rotenberg and at the Institute for Sports

Medicine at the University of Giessen have pinpointed a popular pastime for its citizens as well as those abroad. "Leisure activity such as golf reduces cardiovascular risk factors, increases endurance and helps to reintegrate patients socially" (Mirsky, 2001, p. 112). Babyak, Blumenthal, and Herman (2000) stated, "Benefits are likely to endure in [people] for whom regular exercise becomes a lifelong activity" (p. 66). However, this is not an American approach to physical activity; instead, Americans have the all-or-nothing attitude toward maintaining health. The American emphasis on physical aesthetics as a results of activity compromises such benefits of participation as personal competence and self-determination. Immediate physical benefits, such as weight loss, are overemphasized while there is a de-emphasis on maintaining long-term healthy behaviors. Germans, for example, walk a great deal as part of their daily functions: They walk to the store, the bus stop, to work . . . Culturally imbedded habits like these have a positive effect on workers' physical and emotional health.

Implications for Social Change

As obesity in America continues to increase, more creative transformational approaches to finding personalized solutions must be

developed to empower people to become active. Because of the captive audience, the work place is an ideal place to promote healthy living. Unfortunately, too many organizations are doing generic promotion, which is missing the mark. Simply providing access to equipment, or even time off to exercise, is not enough. Because employers are not, generally, in the fitness business, they must ensure that the fitness facilities, whether in-house or external, have their employees' best interest at heart. They must further ensure that their employees are treated as individuals in need of a personalized program with respect to both motivation and physical ability.

Organizations have a big task ahead of them to which they will need to make a full commitment—a commitment that encompasses all their employees, even the ones who do not seem to want to exercise. The Army's second-tier values when it comes to its civilian employees might serve as a lesson to other organizations: Quasi-offerings will not produce the desired results, and *access* needs to be redefined to encompass more than an open door to a gym with many internal barriers. Organizations might, at least in part, hold the outsource-facility accountable for helping their employees to become fit or reconsider sending them there in the future. *Partnership* must become the operative word—partnership between organization, FC, employer, and employees.

The employee also must be held accountable. In a seemingly ideal situation, such as exists at USA221st BSBWG, employees still do not choose to exercise. Yet, when most external barrier have been eliminated, it is reasonable for employers and society to hold employees accountable and, perhaps, give this accountability weight by imposing costlier health insurance policies. However, rewards should also be given to those who endeavor to manage their health well. Individual and group obesity has to be controlled in America and in its Army. With stressful and busy workweeks, working adults are faced with the challenge to maintain or improve their physical health. The participation of workers in a wellness program as part of their workday could produce rewards for the employer in due course through lower health care costs, lower absenteeism, and lower presenteeism, and higher productivity and morale.

All of society ought to take proactive responsibility for the state of its health. As it is, society is taking some reactive responsibility through socially funded programs, such as Medicaid and Medicare. Even potential salaries are reduced when an employer has to spend excessive sums on health care and absorb losses in productivity. Everyone is responsible, not just the individual. Medical leaders (who should not be too quick to give people drugs for what ails them, but look to more healthful solutions), fitness leaders (who should evaluate and help

everyone who comes into their facility, stop measuring success by new memberships alone, and start measuring the progress of the folks who come in and stay on), and management and leadership (who should be aware of the correlations among productivity, health care costs, and the physical activity of employees)—all should become proactive, that is, lead by example and make time for their employees to exercise. The list of responsibility may be long, but the gist is concise: The obesity problem and lack of exercise among employees need to be taken much more seriously than has happened so far. Not only does thinking about the problem have to change, but quick fixes and quasi-solutions have to give way because they are costly both financially and psychologically, and the country needs to start exercising.

Recommendations for Further Study

The following annual studies are recommended:

- The Vo2 Max, Body Fat, Weight, Flexibility, for 80% of the civilian participants who work out in the Army's fitness facilities.
- Measurement study of the awareness of the connection of productivity, health care costs, and absenteeism by government managers.

- Comparative study of employee wellness programs in U.S. and German multinational corporations.
- An organizational exploratory study on the associations between managers' responses to employee wellness and its effects on employee participation.
- An exploratory study on personal limiting adjuncts of employees who have been granted permission to exercise by their supervisors, have access, and have the assistance they need to be successful; yet, they still chose not to take part in exercise or wellness programs. One avenue to explore might be whether there is a guilt factor associated with participation

Reflection on the Researchers' Experiences with the Research Process

Prior to conducting this study, I thought that most nonmilitary people within Army communities were not exercising. The truth was that they were exercising, but improperly. I have learned not to jump to conclusions: Research takes time; so, one must have patience.

Every person in the research process is there to help the fledgling researcher. Therefore, one must try not to become too frustrated and remember that they always have one's best interest at heart. Love thine

topic or you will have a hard time graduating because it is a marriage. Don't take things so seriously because they can cripple you. Finally, believe in, support, and love yourself, regardless, when no one else does.

Concluding Remarks

The concept of good health is multifaceted in that wellness involves a balance of the physical, emotional, intellectual, spiritual, and social states. This study focused on one aspect of wellness: physical wellness. In order to have a serious positive impact on the physical wellness status of U.S. citizens, one must change the way one thinks—away from quick-fix solutions to implementing gradual and steady changes. These changes within organizations need to be available for all members in a real and tangible manner. Employees can sense it, and they resent it, when programs are offered in theory but are impracticable in reality. Employees need to be treated as the valuable resources they are. Employers can effectively intervene in the nation's obesity problem because of their access and influence over the workers' time, and society as a whole will reap the benefits.

Not a single leader or employee in the community under study could tell what the Army is spending on health care costs. One leader did comment anonymously that "the Army does not keep tabs on those

costs." How can leaders begin to understand the implications of not allowing employees time to exercise? They are underinformed or confused about the impact that their civilian employees' inactivity or underactivity has on the bottom line. Because the Army is not a corporation, the losses are felt in the tax payers' wallets. If nothing else, the Army needs to become a better steward of every citizen's money.

It is a step in the right direction that employers are taking action to implement wellness programs in the workplace to combat OORD. However, one must wonder: Are they implementing these programs correctly? Has management been effective in its approaches? Are managers truly effective in meeting the wellness challenge? While these were not research questions pursued in this study, they remain a concern in so far as Americans remain obstinately obese or overweight.

With regards to the individual, society has a right to ask: Once people are receiving a reasonable level of support, when does it behove society to hold them accountable for their poor health status? Moreover, how can they be held accountable? Continued coddling is not the answer. The Army makes health a condition of employment for soldiers; perhaps, the same standard should be applied to the Army's civilian employees. If people obstinately create their own barriers to exercise,

neither employers nor society as a whole should have to absorb the costs of ill health.

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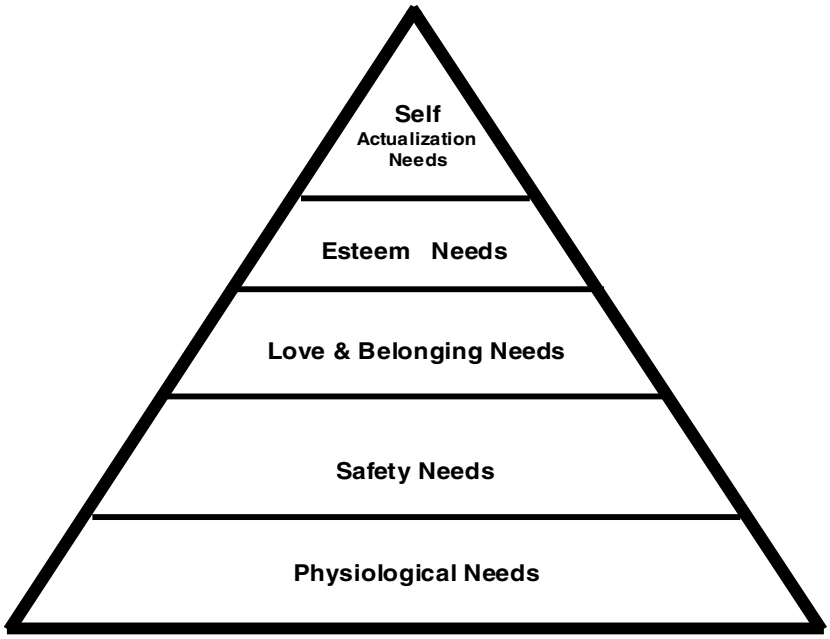
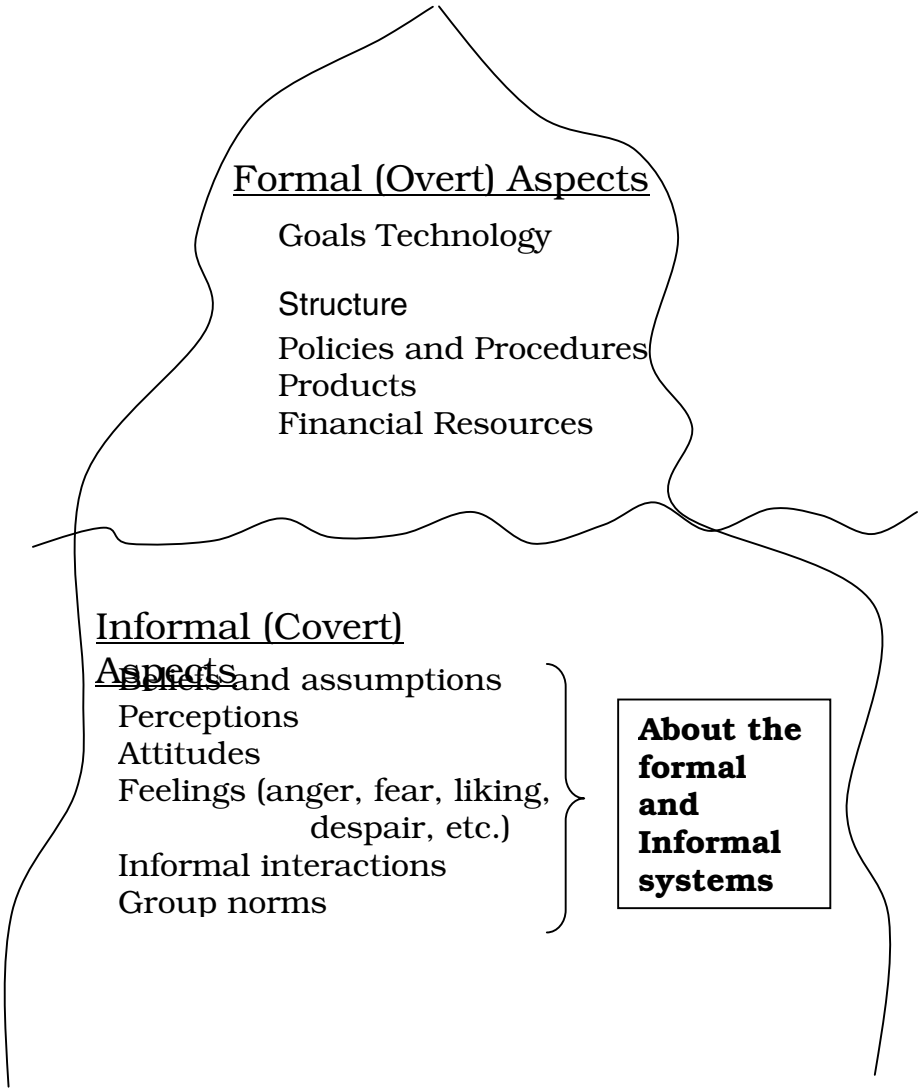
APPENDIX A

MASLOW'S NEEDS AND MOTIVATIONAL MODEL



APPENDIX B

THE ORGANIZATIONAL ICEBERG



From "The Organizational Iceberg" by Stanley N. Herman, 1970. Presentation at the 1970 Canadian Conference on Organizational Development sponsored by the Industrial Relations Management Association British Columbia and the NTL Institute for Applied Behavioral Science. Reprinted in W. L. French and C. H. Bell. (1984). *Organization Development: Behavioral Science Interventions for Organization Improvement.* Adapted with permission.

APPENDIX C

QUESTIONNAIRE SURVEY

1. I am (please mark one):

__ a) Homemaker
__ b) Self-employed (contractors)
__ c) Self-employed
__ d) Non Appropriated Fund civilian employee
__ e) Appropriated Fund civilian employee
__ f) Contractor civilian employee

2. a) Age: _____
   b) Race: _____
   c) Male____ Female____
   d) Height: _____ Weight: _____

3. Health Related Questions

   a) Do you smoke? Yes___ or No___
   b) Do you have diabetes? Yes___ or No___
   c) Heart disease? Yes___ or No___
   d) Other cardiovascular illnesses? Yes___ or No___

4. How many years/months have you worked/lived in the 221st BSB community?

____ (years) ____ (months).

Name of Installation _____

5. I would describe my job as being:

Physical (Check One)	I spend most of my time during work hours performing: (Check One)
____ a) administrative/clerical	___ Administrative/Clerical functions (including computers)
____b) Physical labor	____Service (Food)
____ c) Heavy labor	____Service (Customers)
____ d) a combination of both physical and administrative	____Service (Other, including managers, administrators, etc...

6. Do you take daily lunch breaks? Yes___ / No___
   If Yes, for how many minutes? _____

7. a Do you exercise? Yes___/No____
   b) If you exercise where do you exercise?_____
   c) How many times per week do you exercise? ____
   d) Do you feel comfortable exercising there. Yes__/No__. Explain _____
   e) What do you think about the atmosphere of the facility or outside environment?
   _____

8) a) Are you aware that there is a Fitness Center at your installation? Yes ___ / No___

b) Have you ever exercised there? Yes___ / No___

c) If you exercise there how many times do you use this facility per week? ___

d) Would you recommend your installation's Fitness Center to others?

Yes ___ / No____

e) What programs would you be interested in participating in at the Fitness

Center(s) on base? _____

f) Is your installation's Fitness Center open at times that are convenient for you?

Yes___ / No___ /I've never been ___ If No, what would be your preferred times:

_____

9. If you DO NOT exercise at the gym, why not? (check all that apply)

___ a) Hours of operation my installation's Fitness Center

___ b) Reliability and quality of the programs being offered by installation's Fitness Center

___ c) Types of programs offered don't interest me

___ d) I'm uncomfortable at the gym: ___ physically/ ___ socially/ other _____

___ e) I don't like the staff at my installation's gym

___ f) My installation gym has poor facility maintenance

___ g) I just do not like exercising

___ h) I do not have the time

___ i) I'm happy with the way I look

___ j) I have had a bad experience with exercising

___ k) I'd rather diet than exercise

___ l) I'd rather take supplements than diet

___ m) I'd rather have plastic surgery than exercise

___ n) No one will help me to exercise

___ o) No child care

___ p) If child care were provided, would you attend? Yes__ / No__

___ q) Would you be willing to pay for childcare? Yes__ / No__

10. Please check and rate ANY and All physical Fitness Programs that you have participated in the 221st BSB community.
(Circle your rating of the level of the service provided:

1 = *poor*; 2 = *fair*; 3 = *good*; 4 = *excellent*; 5 = *outstanding*)

ACTIVITY	RATING				
Fun Runs/Races	1	2	3	4	5
Aerobics Classes	1	2	3	4	5
Fitness Center: Facility	1	2	3	4	5
Fitness Center: Maintenance	1	2	3	4	5
Helpfulness of Staff at Fitness	1	2	3	4	5
What was your most memorable experience of a physical fitness event (positive negative)? Please explain (continue on back of page).					

11. When you DO exercise regularly, rate how TRUE or UNTRUE each statement is for you (1 = *not at all true for me;* 5 = *very true*)

STATEMENT	RATINGS				
I am sick less often	1	2	3	4	5
I feel more productive at work	1	2	3	4	5
My physical appearance changes	1	2	3	4	5
I've become healthier and fit	1	2	3	4	5
My attitude towards work improves	1	2	3	4	5
I visit my doctor less	1	2	3	4	5

12. In a typical week, how many times do you exercise?

less than 3 _____ 3 to 5_____ more than 5_____

13. What type of exercise do you do?

(check all that apply AND Circle the one thing that you do most)

__ aerobics
__ running
__ walking
__ swimming
__ bicycling
__ cardiovascular
__ martial arts
__ free weights
__ machines
__ combination
__ stretching
__ yoga
__ Pilates
other: _____

14. On the days that you exercise, how long do you take to perform your activities?

a) Cardiovascular	b) Strength Training or Toning	c) Flexibility
__ less that 20 min.	__ less that 20 min.	__ 5-10 minutes
__ 20-30 minutes	__ 20-30 minutes	__ 10-15 minutes
__ 30-45 minutes	__ 30-45 minutes	__ 15-20minutes
__45-60 minutes	__45-60 minutes	__ 20+ minutes
_ 60+ minutes		

14d. When you don't exercise, describe briefly how you generally feel?

(continue on back of page)

14e. What generally stops you from exercising as scheduled? (continue on back of page)

15. Civilian Fitness Program (CFP)

a) Are you aware that through its CFP, the Army offers civilian employee 3 hours per week of paid time to exercise? Yes___ /No__ / Does not apply to me____ ;

b) Have you ever used this program? Yes__/No___;If you DID participate in this program, what did you think of it? (continue on back of page)

16. How did you become aware of the CFP?
(mark all that apply)
___ a) N/A
___ b) Newspaper
___ c) My boss told me
___ d) Visiting the Gym
___ e) Hospital
___ f) Word of mouth
___ g) I was not aware of it
___ h) Flyer or Bulletin
___ i) Other_____

17. a) Does your employer allow you time off to exercise during work hours?
Yes___ /No___ / Don't know ___ /N/A ___
b) If Yes, how much time? _____ How often? _____

18. Rate your daily STRESS level:

Low Stress		Manageable Stress		Overwhelming Stress
1	2	3	4	5

19. How many hours do you work per week?
___ under 20 hours
___ 21-40 hours
___ 41 and over

20. Rate how supportive your boss is in allowing you time off for exercising? (mark one)
__ 1. poor
__ 2. fair
__ 3. good
__ 4. excellent
__ 5. outstanding

21. In your opinion, how important is it for the military community to have fitness programs and facilities that meet the needs of civilians? (mark one)
__ Not important
__ Somewhat Important

Thank you for your time.
If you have any questions or comments, please contact
Maria ReGester
Phone 06227-812-943
CMR 432 Box 267 APO, AE 09081:
e-mail regesters@yahoo.com

APPENDIX D

CATEGORIZATION OF BARRIERS

RESPONSES TO QUESTION 9: If you DO NOT exercise at the gym, why not?		
Managerial	Individual	Both Managerial & Individual
(a) Hours of operation	(g) I just do not like exercising	(c) Types of programs offered don't interest me
(b) Reliability and quality of the programs being offered by installations Fitness Center	(i) I'm happy with the way I look	(d) I'm uncomfortable at the gym
(e) I don't like the staff at my installation's gym	(j) I have had a bad experience with exercising	(h) I do not have the time
(f) My installation gym has poor facility maintenance	(k) I'd rather diet than exercise	(n) No one will help me to exercise
	(l) I'd rather take supplements than diet	(o) No child care
	(m) I'd rather have plastic surgery than exercise	(p) If child care were provided, would you attend?
	(q) Would you be willing to pay for childcare? Yes__ / No__	
Additional Barrier Questions		
17a. Does your employer allow you time off to exercise during work hours?		
20. Rate how supportive your boss is in allowing you time off for exercising? (mark one)		

APPENDIX E

PERSONAL COMMUNICATIONS

NAME	POSITION/ LOCATION	DATE	REASON FOR CONTACT
Shirley Martin	Human Resource Specialist, Wiesbaden, Germany	Feb 25, 2004	Statistics on the General Staff (GS) Employees in the 221st BSB, Wiesbaden Germany
June King	Human Resource Specialist, Wiesbaden, Germany	Apr 1, 2004	Statistics on the number of Army Air Force Exchange Service (AAFES) employees in the 221st BSB, Wiesbaden Germany
Iona Woods	Human Resource Assistant, Wiesbaden, Germany	Feb 26, 2004	Statistics on the Non Appropriated Fund (NAF) employees in the 221st BSB, Wiesbaden Germany
Yolonda Quezalda	Lead Personnel Specialist, Wiesbaden, Germany	Mar 22, 2004	Statistics on the number of employees for DODEA schools in the 221st BSB, Wiesbaden Germany
Carmen Kaufman	Contract Specialist, Wiesbaden, Germany	Apr 1, 2004	Statistics on the number contractor employees in the 221st BSB, Wiesbaden Germany
Nathan Evans	Fitness Center Manager	Jun 1, 2004	Statistics on the number of civilian employees who use the Fitness Center in the Dexheim and Wackenheim communities
Ron Givens	Gym Manager, Wiesbaden Fitness Center	Feb 4, 2004	Statistics on the number of civilian employees who use the Fitness Center in Wiesbaden
Larry McNoun	Sports and Wellness Coordinator for the Morale Welfare and Recreation Center in Heidelberg	Aug 20, 2003	General idea of the Army's approaches to getting civilian employees active

NAME	Position/ Location	DATE	REASON

Jean Morrison	Community Recreation Chief, Wiesbaden, Germany	May 31, 2004	General ideas of the Army's approaches to getting civilian employees active, community philosophy on wellness, and funding associated with the Fitness Center.
Kevin Ringgold	Sports and Fitness Director, 221st BSB	Apr 14, 2003	General ideas of the Army's approaches to getting civilian employees active, community philosophy on wellness, and funding associated with the Fitness Center.
Sussane Dale	221st BSB Fitness Coordinator	Jan 21, 2003 May 2, 2004 June 3, 2004	General information about the Fitness Center's role in promoting civilian physical wellness
Carol Mooney	Associate Director of Cooper Institute Education Division	May 24 2004 Jun 4, 2004	Broad information about military approaches to managing civilian wellness
Lori Penedia	Health Promotions Coordinator Wiesbaden, Germany	Dec 5, 2002	Information on the CFP and Army philosophy on the wellness of civilian employees.
Laura Mitvalsky	Health Promotion Director for the United States Army Europe	Jun 4, 2004	To obtain statistical and general information about the CFP.
Tracey Chenault	Fitness Coordinator	Mar 17, 2003 Jan 25, 2003	General information about the Fitness Center's role in promoting civilian physical wellness
William Burgess	Director of Wellness, Heidelberg Germany	Sep 25, 2003	To obtain information on general information about Army philosophy on wellness.
Colonel Russell Santala	IMA-Europe USAIMA, EURO, Deputy Director	Dec 6, 2002	To obtain permission to conduct research
Lt. Colonel Dennis Slagter	Previous 221ST BSB Commander	Nov 29, 2002	To obtain previous permission to conduct research at 221st BSB facilities.
Lt. Colonel Christopher Franks	Previous 221ST BSB Commander	Feb 22, 2004	To obtain current permission to conduct research at 221st BSB

APPENDIX F

PERMISSION LETTERS

General Command Level Permission

From: "Santala, Russel D. COL IMA-Europe" <russel.santala@ima-e.army.mil>
Add to Address Book
To: "'George ReGester'" <regesters@yahoo.com>
CC: "Chilson, David B. MR IMA-Europe" <david.b.chilson@ima-e.army.mil>
Subject: RE: PhD Research
Date: Fri, 6 Dec 2002 09:22:52 +0100

Ms. ReGester,

Following a further legal review, we approve your request to conduct surveys at U.S. Army controlled installations in Europe.

Specific installation and facility access is controlled at the Area Support Group and Base Support Battalion level. Mr. Dave Chilson, MWR Division, dsn 370-9632, is prepared to assist you in contacting the appropriate local community representatives to facilitate your research.

Best of luck in your endeavors.

COL R.D. Santala
USAIMA, EURO, Deputy Director

Previous Commander: Local Level Permission

From: "Slagter, Dennis -221BSB CDR" <dennis.slagter@221BSB.wiesbaden.army.mil> Add to Address Book

To: "'regesters@yahoo.com'" <regesters@yahoo.com>

CC: "Pineda, Lori Ms. DAC 104th ASG" <Lori.Pineda@104asgexch.hanau.army.mil>, "Keefe, Sandra, 221st BSB XO" <sandra.keefe@us.army.mil>, "Moseley, Sharon - 221BSB" <Sharon.Moseley@221BSB.wiesbaden.army.mil>, "Morrison, Jean - 221st BSB" <Jean.Morrison@104asg.mwr.army.mil>, "Ross, Tom - 221st BSB" <Thomas.Ross@104asg.mwr.army.mil>, "Ramos, Jose - 221BSB" <Jose.Ramos@221BSB.wiesbaden.army.mil>

Subject: Your Fitness Program survey

Date: Fri, 29 Nov 2002 12:08:57 +0100

Maria, glad to help with your doctoral work and thank you for your complete packet. Because your work could/should reap valuable information for my community, I would like you to contact Ms Lori Pineda, our 104th ASG Health Promotions Coordinator and chairperson for our community's health promotion council. Our BSB Council is working thru similar issues and I am sure we can accommodate your needs while integrating your efforts with ours.

I have faxed your documents to her office, this date.

Please contact her at DSN 322-9509 or commerical: 06183-57-9509.

I have cc'd my Community Recreation Division Chief, Ms Jean Morrison as well as I am certain her staff will be helpful and interested in your survey results. Jean's number is: 0611-705-6270.

Kind regards,

LTC Dennis Slagter
"Team 221st"
DSN: 337-1500
www.wiesbaden.army.mil

The researcher resided in Baumholder Germany for one and a half years. The commander at the installation gave the researcher permission to conduct the study there as well. Due to a required military move the researcher changed sample groups. However, this demonstrates that the United States Army Europe is indeed interested in a study of this nature.

Current Commander: Local Level Permission

DEPARTMENT OF THE ARMY
HEADQUARTERS, 221ST BASE SUPPORT BATTALION
UNIT 29623
APO AE 09096

REPLY TO
ATTENTION OF

AETV-WSB-CO

02 FEB 2004

MEMORANDUM FOR Maria ReGester, Wiesbaden, Germany, APO AE 09096

SUBJECT: Request to conduct Civilian Employee (including managers) surveys and interviews.

1. Your request to conduct interviews and to survey civilian employees (including managers) within the 221st Base Support Battalion for your Ph.D. dissertation work as a student with Walden University is approved.

2. Your work could/should reap valuable information for the Wiesbaden Community, as we are working through similar issues. We look forward to accommodating your needs while integrating your efforts with ours.

3. I am re-granting this permission to you to conduct this research that was previously approved by my predecessor LTC Dennis E. Slagter on November 29, 2002.

4. POC for this action is Paula Smithey at DSN 337-1500.

CHRISTOPHER C. FRANKS
LTC, CM
Commanding

Previous Community: Local Level Permission

DEPARTMENT OF THE ARMY
Headquarters, 222D Base Support Battalion
Unit 23746
APO AE 09034

AETV-BHR-CO

MEMORANDUM FOR Maria ReGester, Baumholder, Germany 09034

SUBJECT: Request to Conduct Fitness Center Survey

1. Your request to conduct a Fitness Center Survey for your Ph.D. dissertation work as a student with Walden University is approved.

2. In accordance with the legal review conducted by CPT Kris Gawin, Administrative Law Attorney, Office of Staff Judge Advocate, Baumholder, Germany and memorandum dated 12 December 2001, please include the recommended Privacy Act statement.

3. Distribution process will be coordinated through Denise Turnipseed, Chief of Recreational Division, Directorate of Community Activities (DCA). Ms. Turnipseed can be contacted by telephone at DSN 485-6965 or Civilian at 06786-6-6965.

4. The point of contact for this endorsement is the undersigned at 485-1500.

HENRICUS F. WAGENAAR
LTC, IN
Commanding

APPENDIX G

IRB FORM

Walden University

America's Premier Online University℠

To: Maria Antonett ReGester

cc: Dr. Charles Nichols
Rochelle Stuve, Academic Advisor
Student Records

From: Jeffrey Ford, Research Coordinator

Date: November 4, 2004

Re: Request to the Institutional Review Board for Approval to Conduct Research

Enclosed please find a copy of your **approved** *Request to the Institutional Review Board for Approval to Conduct Research* form.

This is one of the prerequisites for Walden University approving your dissertation proposal.

You may not begin the research phase of your dissertation until your proposal has been approved by Walden University. Once you have received this letter and your proposal approval letter, you may begin your data collection and research. If there are any changes to your research protocol, you must submit a new *Request to the Institutional Review Board for Approval to Conduct Research* form.

If you have any questions regarding the processing of your project, please contact your academic advisor at 1-800-925-3368, option 3.

Thank you,

Jeffrey Ford

155 Fifth Avenue South, Suite 200, Minneapolis, MN 55401
1-800-925-3368 • 612-338-7224 • (Fax) 612-338-5092
www.waldenu.edu

Walden University

Request to the Institutional Review Board for Approval to Conduct Research

Walden University
Committee on Ethical Standards in Research
155 Fifth Avenue South
Minneapolis, MN 55401

Approved by IRB
NOV 0 3 2004
Walden University

1. Project Title: (Use same title as Final proposal) An Exploratory Case Study of the Effectiveness of the Implementation and Management of an Army Civilian Employee Fitness Program in Weisbaden, Germany

2. Exemption category claimed: 5 (Insert the category numbers) 32158 (Management)

3. Principal Investigator: (full name & degree) Maria Antonett ReGester, PHD, AMDS

Address: HHC 1 AD CMR 467 Box 3043, APO, AE 09096

Home Phone: 011-49-6134-555908

Work Phone: 011-49-6134-555913

Email: regesters@yahoo.com

4. Projected inclusive dates of project: July 1,2003-through August , 2003

5. Check one: ☐ Faculty Research ☒ Student Research (Doctoral)

6. If principal investigator is a student:

Mentor's Name: Dr. Charles Nichols

Address: 7304 Orchard Lake, Louisville KY, 40218

Telephone: 502 491 4895 office 502-456-6504

Email: cnichols@waldenu.edu

Questions must be addressed completely. A request involving a survey or interviews must be accompanied by copies of the instruments which will be used to gather data. Research applications must include a consent statement or consent form appropriate to the research questions. (Use the sample form as a guide in preparing forms, letters and oral statements.) Research involving the use of pathological specimens and existing data without identifiers does not require consent from subjects.

7. Abstract/Lay Summary

Recd 7/8/03

Describe the research, including research questions, the purpose of the research, and methods to be used (hypothesis and methodology). Describe the task(s) subjects will be asked to complete. **Use lay language (language understood by a person unfamiliar with the area of research). Area-specific jargon should be avoided or explicitly explained.** If using existing data, records or pathological specimens, explain the sources of data, the type of tissue used, and the means of access to data. (Provide attachments as necessary.)

The research is exploratory in nature. It is designed to determine the effectiveness of a Civilian Employee Fitness program in Wiesbaden, Germany. The research questions are as follows:

- Are the civilian employees who work for the U.S. Army in Wiesbaden, Germany exercising regularly?
- If they exercise, what types and amounts of exercise do those civilian employees who work for the U.S. Army in Wiesbaden Germany perform?
- What types of programs are available that promote physical fitness for civilian employees? Are those programs meeting the perceived needs of the civilian employees?
- What is the awareness of the Civilian Fitness Program?
- What is the civilian employees' perception of how supportive their leaders are within the organizations in allowing them to participate in exercise programs?
- What effects does the Civilian Fitness Program have on the civilian employees' physical and emotional wellness, as perceived by leaders in the community?

The following research questions will be answered through archival, historical, and surveyed data. In regard to the subjects, they will be asked to fill out the survey that is included in this package

8. Description of Subjects:

a. Number: Male: 50 Female: 50 Total: 100

b. Age Range: 18 to 55

c. Location of Subjects: (elementary/secondary schools, university, public institution, hospitals and clinics, private institution, other)

___elementary / secondary schools
___outpatients
___hospitals and clinics
___university students
_____other special institutions: specify:
Civilian employees living and working on Military Installation Wiesbaden Germany
____other hospitals: specify:

per e-mail 11/29/02

d. Special Characteristics of Subjects (Check all that apply)
___ inpatients
___ prisons/halfway houses

___ patient controls
X normal volunteers (adults)

e. If research is conducted through community agencies, written documentation of approval/cooperation from such agency (school, etc.) should accompany this application. List the names of any organizations or agencies providing authorization to invite their constituencies to participate in the study.

U.S Army Wiesbaden, Germany (See e-mail Nov. 29, 2002, from Dennis Slagter)

f. Describe how subjects will be identified or recruited. Attach recruitment information, i.e., advertisements, bulletin board notices, recruitment letters, etc.

There will be no recruitment letters. The investigator will visit the subject's work place and request that he/she participate.

g. If subjects are chosen from records, indicate who gave approval for use of the records. If private medical or student records, provide the protocol for securing consent of the subjects of the records and approval from the custodian of the records.

n/a

h. Who will make the initial contact with subjects? Describe how contact is made.

The investigator will make the initial contact by visiting the subject's work place and requesting that he/she participate.

a. Will subjects receive inducements before, or rewards after the study? (Note: Include this information in your consent documents.)
None

j. If subjects are school children and class time is used to collect data, describe in detail the activity planned for non-participants. Who will supervise those children? (Note: Include this information in your consent documents.)

N/A

9. Confidentiality of Data

a. Describe provisions made to maintain confidentiality of data. Who will have access to data? Will data be made available to anyone other than the principal investigator? (School officials, medical personnel?) If yes, explain below and in the consent form.

The data will remain in the sole possession of the researcher. The researcher will however, make the findings and reccomendations available to the commander of the Wiesbaden Army community.

b. Where will data be stored and for how long? If tape recordings or videotapes are created, explain who will have access and how long the tapes will be retained. Written consent is required for recordings; the consent form should include this information as well. (Students are expected to retain the original data for at least 5 years after the dissertation is approved).

There will be no tape recordings, but the survey instrument will remain in the possession of the investigator for 5 years, post dissertation.

10. Informed Consent Process

Simply giving a consent form to a subject does not constitute informed consent. Using the sample consent form, prepare and attach a consent form, statement, or letter for review (for exemption categories I , 2 , 3 ,4,5 6).

Note: Researchers are cautioned that consent forms should be written in simple declarative sentences. The forms should be jargon-free. Foreign language versions should be prepared for any applicable research.

--Consent form: Signature of subject and/or parent is required for research involving risk, and for research where a permanent record of results are retained (including videotapes).

--Consent Statements/letter s to subjects: Statements read to study subjects or distributed to participants prior to interview or as a cover sheet for a written survey should be modeled after the sample consent form, but do not require signature.

--No active consent is required for observations of public behavior . Photos, films, videotaping, etc., require review by the Program Director and written consent of subjects.

--No active consent is required for review of public records, private records already stripped of identifiers, or research involving pathological specimens which are not identifiable by name or number.

11. Exempt Category #4: Pathological Specimens

All pathological specimens should be stripped of identifiable information prior to use. Registries or tissue banks where subject's samples are identified or identifiable are *not exempt* from Committee review.

Describe the source of the specimens. How will the be obtained? If not obtained by the principal investigator, then by whom?

12. Exempt Category #5: Public Service Programs

In addition to the information provided under abstract, above, provide documentation of conformity to the requirements for category #5, including written documentation or cooperation from the public agency involved in the research.

13. Exempt Category #6: Taste Testing

To be eligible for this category of research, all food tested must be GRAS (Generally Recognized As Safe) and wholesome. Food ingredients must be at or below the levels found to be safe by federal regulatory agencies. Describe the food to be tested and provide assurance that these conditions are met.

Applications for compliance with ethical standards in research require the following assurances and signatures:

(Note: original inked signatures are required; no stamps or "per" signatures accepted.)

The signatures below certify that:

--The information provided in this application form is correct.
--The Principal Investigator will seek and obtain prior written approval from the Program,
--Director in the event of any substantive modification in the proposal, including, but not limited to changes in cooperating investigators and agencies, as well as changes in procedures.
--Unexpected or otherwise significant adverse events in the course of this study will be promptly reported.
--Any significant new findings which develop during the course of this study which may affect the risks and benefits to participation will be reported in writing to the Program Director and to the subjects.
--The research may not and will not be initiated until final written approval is granted.

This research, once approved, is subject to continuing review and approval by the Committee Chair and Associate Vice President. The Principal Investigator will maintain complete and accurate records of this research.

If these conditions are not met, approval of this research could be suspended.

Signature of Principal Investigator: Maria Pelaez Date: June 27, 2003

As Committee Chair, I assume responsibility for ensuring that the student complies with University and federal regulations regarding the use for Human Subjects in research. I acknowledge that this research is in keeping with the standards set by the University and assure that the Principal Investigator has met all the requirements for review and approval of this research.

Signature of Committee Chair: Charles Manatt/Michael Date: July 2, 2003

As Associate Vice President for Academic Affairs, or designee, I acknowledge that this research is in keeping with the standards set by the University and assure that the Principal Investigator has met all requirements for review and approval of this research.

Signature of the Associate Vice President: [signature] Date: 11/3/04

CURRICULUM VITAE

Maria Antonett ReGester
CMR 432 Box 267
APO, AE 09081
E-mail: regesters@yahoo.com

PROFESSIONAL OBJECTIVE

To achieve diversified knowledge and skills that empower individuals and organizations to be well in their personal and professional endeavors.

EDUCATION

DEGREES:
2005 Walden University, Minneapolis, Minnesota
Degree: PhD, Applied Management in Decision Science: Leadership and Organizational Change
1999 University of Phoenix, Arizona
Degree: MA, Organizational Management
1998 Campbell University, Buies Creek, North Carolina
Degree: BS, Government

LICENSES/CERTIFICATES:
Fitness/Wellness Certifications:
2005 American Red Cross, Heidelberg Germany
Certification: Adult and Child Cardiopulmonary Resuscitation
2005 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Fitness Practitioner
2004 Cooper Institute for Aerobic Research, Dallas, TX
Certification: Coaching Healthy Behaviors
2004 Cooper Institute for Aerobic Research, Dallas, TX
Certification: Health Promotion Director
2004 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Fitness Gets Personal Series II
2004 Yoga Fit, Redondo Beach, CA
Certification: Yoga Level 1
2004 Certification: Redondo Beach, CA
Certification: Yoga Level 2
2004 Schwinn Cycling Louisville, CO

Certification: Cycling Spinning
2003 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Personal Trainer
2002 Resist-A Ball Corporation
Certification: Resist-A-Ball C.O.R.E instructor
2002 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Exercise and Obesity
2002 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Stress Management
2002 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Exercise and Obesity certification
2002 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Fitness Gets Personal Series
1999 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Kickboxing
1996 Cooper Institute for Aerobic Research, Dallas, TX
Certification: Personal Trainer certification
1996 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Step Aerobics Instructor
1995 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Aerobics Instructor
1995 Aerobics & Fitness Assoc. of America, Sherman Oaks, CA
Certification: Eating Disorders

GOVERNMENT RELATED CERTIFICATIONS
2004 United States Department of the Army
Certification: Army Records Information Management Systems
2003 United States Department of the Army
Certification: Army Family Team Building Instructor Course Certification
2003 United States Department of the Army
Certification: Family Advocacy Staff Training
2003 United States Department of the Army
Certification: Army Contract Officers Representative Course
2003 United States Department of the Army
Certification: MWR New Employee Orientation Course

PROFESSIONAL EXPERIENCE

2004 – to date
Heidelberg Sports and Fitness, Heidelberg, Germany

Position: Personal Trainer and Aerobics Instructor
Duties: Develop, implement, and provide instruction by teaching and mentoring group exercise classes. Counsel individuals on their current and potential health capabilities based on realistic means of accomplishment after analyzing and interpreting test data

2004 – 2003
Family Advocacy Program, Heidelberg Germany
Position: Program Educator
Duties: Solve controversial military family issues of well-being. Serve as recognized source of information within the command, private/public groups on FAP and ACS program. Educated and trained commanders, units, and civilian leaders on domestic violence, stress, and wellness management.

2001 – to date
Department of Defense Schools Europe
Position: Substitute Teacher
Duties: Administer curriculum and provide instruction for grades kindergarten-12th for core courses that

1999 – 2000
Morale Welfare and Recreation, Columbia South Carolina
Position: Aerobics, Instructor/Coordinator/Staff Trainer
Duties: Developed and taught group exercise classes and personal training services. Provided a variety of management and administrative advisory services to supervisor. Formulated and implemented plans, policies, and procedures on program management which promoted active and sustained participation in athletic and sports programs.

1998 – to date
Knock Knock Solutions, Heidelberg Germany
Position: International Wellness and Management Consultant.
Duties: Counsel individuals and organizations on wellness, management, leadership, human resources, human relations, and development issues common to the work place

1995 – 1997
Morale Welfare and Recreation, Camp Lejeune, NC
Position: Aerobics Instructor and Personal Trainer
Duties: Developed and performed group exercise instruction. Assessed and evaluated clients fitness, and designed appropriate programs

1993 - 1994

Child and Youth Services, Frankenthal Germany
Position: Youth Center Site Manager (Rec. Assist).
Duties: Operated, planned, managed, supervised and directed a youth center.

QUALIFICATIONS/EXPERTISE

Wellness Relations
Fitness Management
Life Style Management Coach
Human Resources
Leadership and Management Consultant
Concise Public Speaker
Accurate Researcher and Analyzer
Problem Solver
Change Management
Intelligent and Sincere