8-2012

An Investigation of Relationships between Body Mass Index and Factors of Wellness among Full-Time Employees at Private Kentucky Colleges and Universities

Christopher Schmidt
Western Kentucky University, schmidtc@lindsey.edu

AN INVESTIGATION OF RELATIONSHIPS BETWEEN BODY MASS INDEX AND FACTORS OF WELLNESS AMONG FULL-TIME EMPLOYEES AT PRIVATE KENTUCKY COLLEGES AND UNIVERSITIES

A Dissertation
Presented to
The Faculty of the Educational Leadership Doctoral Program
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

By
Christopher Schmidt

August 2012

AN INVESTIGATION OF RELATIONSHIPS BETWEEN BODY MASS INDEX AND FACTORS OF WELLNESS AMONG FULL-TIME EMPLOYEES AT PRIVATE KENTUCKY COLLEGES AND UNIVERSITIES

Date Recommended _____

_____
Nevil Speer, Director of Dissertation

_____
Scott Lyons

_____
Dean Adams

_____ 8/20/12
Dean, Graduate Studies and Research Date

This is dedicated to the two most important people in my life, my wife and my son.

Rebecca and Cole, you are the inspiration and purpose in my life.

ACKNOWLEDGMENTS

My life has been a series of opportunities, connected to individuals and events that have shaped me forever. This section acknowledges four decades of gratitude.

I would first like to thank Dr. Nevil Speer, my dissertation chair; your leadership provided a constant source of motivation and energy. I would also like to thank my committee members, Dr. Scott Lyons and Dr. Dean Adams. Each of you provided the motivation and inspiration to complete this journey; I am forever changed by your thoughtful care and leadership.

Special thanks to Dr. Dan and Dr. Jennifer Williamson, whose friendship was nurtured through countless tutorials on statistics and scholarly writing. I cannot say thank you enough for your collegiality.

I would like to acknowledge and thank all the members of Cohort II, especially Bob Jackson, Tom Stewart, Adam Murray, Benny Lile, and Tony Kirchner. I cannot imagine maintaining my sanity and sense of humor during this journey without you.

I would like to recognize Lindsey Wilson College and President William T. Luckey, Jr, for offering me the chance to grow in such a supportive environment. You have provided me countless opportunities in a way that has changed my life forever.

To Dr. John B. Begley, you opened my eyes to the power of our beautiful Mission. *The Mission of Lindsey Wilson College is to serve the educational needs of students by providing a living-learning environment within and atmosphere of active caring and Christian concern where every student, every day, learns and grows and feels like a real human being.* You helped me realize my purpose and how I could serve others by living our Mission.

My thanks to Tim Kelly, John Semerad, Tim Johnson, Claude Bacon, and Karl Miller; I am proud to have been under the influence of these great men.

To Sgt. Dakota Meyer, thank you for changing my life and my family's. It is an honor to call you my friend.

To Toby Young, you are without a doubt one of my closest friends; thank you for listening and sharing in the mental and physical wellness behind this project.

Dean Adams, you changed my life with one opportunity. In the process you became my mentor, spiritual guide, and best friend; thank you.

To mom and dad, there are no words to express the appreciation I have for all the opportunities you have provided me. I love you.

To my son Cole, never forget who you are and where you come from. Your life will be an endless set of opportunities. I am so proud to be your dad, thank you for being so understanding for all the missed ball games and days away during my education. There is nothing in the world that I love more than a hug and kiss from you to start and end each day. Always remember, no matter where life takes you that we will always be best friends.

To my beautiful wife Rebecca, none of this is possible without you. You made so many sacrifices that allowed me to complete this journey. You are the best wife, mother, and friend I could have ever hoped for. I love you.

L3:

Live, Learn, and Lead

EPIGRAPH

You've got to drive the body to the last inch of energy, and then go on. You gain nothing by just going up to where you are exhausted. The body will only build and grow to fit the demands which the mind makes. If all you do is exercise until the body is tired, the body will get lazy and stop a bit shorter every time.

You have to go to the point of exhaustion and go on. That way, the body will figure out, "We've got to build up more body strength if that crazy mind is going to drive this hard." If you always quit when you are merely tired, you will not gain. Once you let the body tell the mind when to quit, you are whipped for sure. You cannot gain listening to the body.

We can become stronger. We only use about half the available strength of our bodies and less than that of our minds! We can always take one more step! When we are on the attack, we can always go one more mile.

--General George S. Patton, Jr.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

AN INVESTIGATION OF RELATIONSHIPS BETWEEN BODY MASS INDEX AND FACTORS OF WELLNESS AMONG FULL-TIME EMPLOYEES AT PRIVATE KENTUCKY COLLEGES AND UNIVERSITIES

Christopher Schmidt August 2012 96 Pages

Directed by: Nevil Speer, Scott Lyons, and Dean Adams

Educational Leadership Doctoral Program Western Kentucky University

The United States is in the middle of a health epidemic that shows no signs of stopping. Obesity is a disease that carries a significant number of health-related issues. The adult population has experienced a decrease in overall wellness, where the mental and physical health of individuals is disrupted by the effects of obesity. Even more alarming is the rate of increase in childhood obesity and its impact on America's future.

The consequences of this health epidemic are especially visible in the increased costs of health care caused by obesity-related diseases. This epidemic reaches across many aspects of life. The impaired ability to function mentally and physically has left individuals incapable of performing daily functions in their personal and professional lives. As the demand on individuals' time has increased, there has been a noticeable decrease in health-and-wellness activities. Inactivity, demanding work environments, stress, fast food, processed groceries and meals, consumption of sugary drinks, and smoking all may contribute to obesity in the United States.

This research project attempted to determine the viability of Body Mass Index (BMI) to predict employee wellness. By using BMI as a predictor of wellness, both individuals and organizations can organize initiatives to direct employees into healthy lifestyle programs. Addressing obesity and reversing a culture of inactivity, disease, and

death are fundamentally correct. The challenge is for leaders and employees to discover a path to living well.

The research addresses BMI as a predictor of wellness by determining the relationships across the factors of The Indivisible Self (Myers & Sweeney, 2005a) wellness theory. Is there a relationship between BMI and total wellness (the creative self, the coping self, the social self, the essential self, and the physical self)? The research indicates that a relationship does exist. The strengths of the relationships between BMI and factors of wellness do not offer conclusive evidence that BMI alone predicts wellness. The relationships observed, however, offer opportunities for changes in Americans' lifestyles.

CHAPTER 1: THE PROBLEM

Chronic diseases associated with obesity have become the leading cause of death among Americans. In 2003, during testimony before the Subcommittee on Education Reform, Surgeon General Richard H. Harmon said: "I welcome this chance to talk about a health crisis affecting every state, every city, every community, and every school across our great nation. This crisis is obesity. It is the fastest growing cause of disease and death in America" (Carmona, 2003, p. 1).

Nearly ten years later, the epidemic persists and Americans remain in serious danger. According to Flegal, Carroll, Ogden, and Curtin (2010), 33.8% of adult Americans are obese. The Division of Health and Nutrition Examination Survey results indicate that 16.9% of children and adolescents ages 2-19 years are obese (Ogden & Carroll, 2010). The most recent statistics estimate that approximately 78 million adults and 12.5 million children in the United States are clinically obese (Centers for Disease Control and Prevention [CDC], 2011a). Statistics indicate that Americans are clinically obese and suffer from chronic health-related diseases.

According to the CDC (2011b), obesity is a label for a range of weight considered unhealthy; it has been identified as a contributing factor for certain diseases and associated health problems. Obesity and related health issues contribute to a decrease in overall wellness. The CDC (2012c) states that obesity in the United States has become "common, serious, and costly" (CDC, Adult Obesity section, para. 1). Health care costs continue to rise and become unaffordable for employers and employees (Collins, 2004). While demand for a healthy and productive workforce increases, personal and professional work performances remain under attack (Els, & De La Rey, 2006).

Inactivity and low self-esteem associated with obesity contribute to depression and poor mental health (Oeland, Laessoe, Olesen, & Jorgensen, 2010). Obesity strips individuals of their spirit and motivational drivers. Lifestyle choices and environmental influences contribute to Americans' quality of life and wellness (Nestle & Jacobsen, 2000). Reversing this trend through education and an understanding of wellness is essential. A wellness profile that exhibits balance across physical, mental, and spiritual aspects is critical (Adler, 1964; Hettler, 1984; Myers & Sweeney, 2005a; Myers, Sweeney, & Witmer, 2000). A balanced wellness profile may provide answers for how to address obesity and the associated physical, mental, and spiritual risk factors.

Purpose

This investigation identifies relationships between body mass index (BMI) and wellness factors among full-time employees at private Kentucky colleges and universities. For the purpose of this research, BMI serves as a measure of obesity and the identifying variable for discovering whether a relationship exists between obesity and factors of wellness among full-time employees.

This study defines wellness by the first order factor of the Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2004). The model measures wellness across five second-order factors: the creative self, physical self, coping self, social self, and essential self. According to Myers and Sweeney (2005b), each of the second-order factors are measured by 17 third-order factors: thinking, emotions, control, work, positive humor, exercise, nutrition, leisure, stress-management, self-worth, realistic beliefs, friendship, love, spirituality, gender identity, cultural identity, and self-care. Adler (1964) was the first to theorize that man is an indivisible being with all parts

functioning as one. His Indivisibility of Self Theory placed the "emphasis on the whole rather than on the elements, and on the interaction between the whole and its parts" (p. 11). The current Indivisible Self Theory model was developed through extensive research and evaluation of survey participants' wellness factor responses (Hattie, Myers, & Sweeney, 2004; Myers & Sweeney, 2005a; Myers, Sweeney, & Witmer, 2000; Sweeney & Witmer, 1991; Witmer, Sweeney, & Myers, 1998).

Rationale

Wellness is a quality of life that defines how people function within the context of their environments. Myers, Sweeney, and Witmer (2000) define wellness as a way of life oriented toward optimal health and well-being in which an individual's mind, body, and spirit are fully integrated into a goal of living life more fully. According to Archer, Probert, and Gage (1987), wellness is defined as "the process and state of a quest for maximum human functioning that involves the body, mind, and spirit" (p. 311). Leading health organizations like the CDC, the International Association for the Study of Obesity (IASO), the National Institutes of Health (NIH), and the World Health Organization (WHO) agree that increases in unhealthy behaviors by people such as smoking, poor nutrition, and lack of exercise contribute to a decline in overall wellness.

Unhealthy lifestyle choices, such as those that lead to obesity, reduce the condition of wellness of U.S. citizens. The obesity epidemic has created a state of chaos within the realms of physical, mental, and spiritual wellness. According to the CDC (2011a), obesity-related conditions are responsible for some of the leading causes of death among Americans and are directly linked to the following health-related issues: cancer (endometrial, breast, and colon); gout; osteoarthritis; gallbladder disease and

gallstones; type 2 diabetes; high blood pressure; high cholesterol; dyslipidemia; coronary artery disease; stroke; infertility; sleep apnea; and asthma (CDC, 2011a).

Obesity negatively impacts an individual's physical, mental, and spiritual wellness; and it has become an epidemic degrading people's quality of life. "The real purpose of health is to allow a more satisfying and meaningful life, to enjoy a higher quality of life," said Dr. James S. Marks, Director of the National Center for Chronic Disease and Health Promotion (Marks, 2003, p. 2). Obesity limits performance, socialization, and an individual's sense of belonging. The result is that Americans spend billions of dollars a year on medical problems caused by preventable diseases. The CDC (2011a) reports that, in 2008, the medical consequences of obesity cost Americans $147 billion. Organizations such as the National Cancer Institute and the National Heart, Lung, and Blood Institute have combined to spend as much as $2.5 million in health education promotion (Nestle & Jacobsen, 2000). Educational efforts to promote healthy living, exercise, and nutrition often cannot compete financially with the alternatives. The food industry alone spends more than $33 billion on advertising, trade shows, incentives, and customer promotion for products that support unhealthy habits (Nestle & Jacobsen, 2000).

Clearly, obesity exacts a heavy toll on an individual's physical, mental, and spiritual wellness. The World Health Organization (WHO), National Institutes of Health (NIH), CDC, and other health-related agencies identify obesity as a disease that poses catastrophic health implications. The direct and indirect effects of obesity qualify it as a disease, which typically are associated with depriving individuals of their health and well-being and in many circumstances leading to loss of functionality and death. Wyatt,

Winters, and Dubbert (2006) confirm obesity as a major risk factor for chronic diseases, and they identify the decrease in longevity and quality of life as significant causes for concern. Like most diseases, obesity impairs an individual's ability to find a wellness balance in life. A balanced approach to living well is critical (Hattie et al., 2004). Myers and Sweeny (2005b) state that a balanced profile consists of friendships, work, leisure time, emotions, humor, spirituality, and the overall perception of an individual's value in the world.

Obesity's economic burden on individuals and organizations has widespread implications on a workforce that has shifted from manual labor to one of inactive white collar workers (Wyatt et al., 2006; Nestle & Jacobson, 2000). Obesity has a significant effect on individual wellness, and poses a deep cultural issue in an environment that places increased demands on our time. The current culture of civilization is marked with labor saving devices that reduce individuals' energy needs while their high calorie energy intake increases (Nestle & Jacobson, 2000). More work hours, less pay, more expensive healthy food, less time, expensive access to exercise facilities, and other variables contribute to the American obesity epidemic. The complexity of the personal and professional demands made on Americans' wellness creates accountability issues for overall wellness.

The Fort Worth Business Press (2006) identified that Americans extend their work week as a result of the constant connection to email, laptops, and cell phones. Technological advancements have increased workers' productivity; however, those same advancements also have created an environment void of meaningful time for wellness. The new American workplace with its inactive, deskbound culture contributes to the

obesity epidemic by reducing physical activity opportunities throughout the workday (Parker-Pope, 2011). Individuals have forfeited wellness opportunities at work as demands for their time and productivity continue to grow. Lifestyle choices have led to an inactive culture in which people have forfeited portions of their mental, physical, and spiritual wellness. Because of this decline in overall wellness, chronic diseases have become the leading cause of death among Americans (CDC, 2010b).

The combination of work productivity and decreased wellness has left Americans disconnected from their most essential resource, their wellness. According to Adler (1964), the primary human goal consists of belonging and feeling significant. As an individual's state of wellness declines, his sense of how he matters to himself, his family, co-workers, and his community also diminishes. Hattie et al. (2004) observed that individuals without purpose or direction in life and lacking optimism or hope possess a higher risk for both mental and physical illness. The human body is designed to operate as a whole rather than in parts. Current lifestyle choices isolate factors of wellness, resulting in underdeveloped human functioning. Americans are operating in silos, dividing many of their wellness factors from one another and are choosing not to balance their lives, resulting in this silo effect. In many cases some mental and physical factors are completely void of stimulation, resulting in an underdeveloped existence. Hattie et al. (2004) developed the Indivisible Self Theory to recognize the significance of balance and the overlapping of functional life factors responsible for the realization of wellness in life.

The Indivisible Self Theory is organized into three factor levels arranged around the central theme of wellness (Figure 1). Hattie et al. (2004) recognized that these wellness factors are linked and, therefore, indivisible to the whole person. The

Indivisible Self Theory defines wellness as a central first-order factor. Wellness is then defined by the second-order factors that consist of the creative self, physical self, coping self, social self, and essential self. Each of the second-order factors are defined by third-order factors. The creative self is defined by thinking, emotions, control, work, and positive humor. The physical self is exercise and nutrition. The coping self is defined by leisure, stress-management, self-worth, and realistic beliefs. The social self includes friendship and love. The final second-order factor is the essential self of spirituality, gender identity, cultural identity, and self-care.

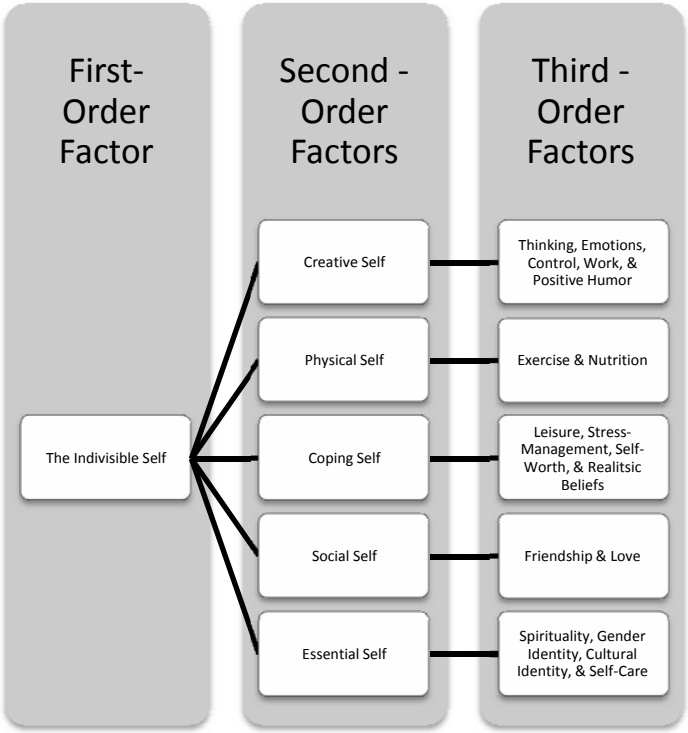


Figure 1. The Indivisible Self Model (Adapted from Hattie et al., 2004)

Understanding the link between obesity and wellness forms the first step toward balancing body, mind, and spirit. The second step can come only from leaders within families, communities, companies, and organizations who focus on changing the wellness environments they lead. These groups must create a culture of wellness. "People can

safeguard their quality of life by making healthy lifestyle choices, but even more can be done through policies and environments that support healthy behaviors and promote quality of life for entire communities" (Mensah, 2003, p. 3). It is critical that "disease prevention and health promotion become a priority in our role as leaders" (Carmona, 2003, p. 3).

The poor choices that individuals make regarding their physical and mental existence do not contribute to a positive wellness lifestyle. The national wellness profiles clearly indicate many Americans are incapable of managing their wellness. Leadership throughout various organizational levels must lead individuals away from a pattern of unhealthy behaviors that contribute to the obesity epidemic. Colleges and universities are not exempt, as obesity and other chronic health-related diseases have resulted in workforces becoming unhealthy; these contributing health issues reduce performance and productivity (Freedman & Rubinstein, 2010).

Americans' wellness may depend on initiatives from college and university leaders to address the obesity epidemic. Freedman and Rubinstein (2010) state that "universities are important environments for developing strategies and policies to address health care issues" (p. 205). Through research, education, programming, and leadership, higher education often offers important findings and insight for addressing societal problems. "Only leadership can motivate the actions needed to alter behavior in any significant way. Only leadership can get change to stick by anchoring it in the very culture" (Kotter, 1996, p. 30). If higher education is a key to inspiring a cultural change, then college and university campuses must first address obesity.

Higher education leaders can address their employees' wellness by recognizing and changing the campus environment through education. "Leaders establish the vision for the future and set the strategy for getting there; they cause change. They motivate and inspire others to go in the right direction and they, along with everyone else, sacrifice to get there" (Kotter, 1996, p. 25). Appley (1990) stated, "It is difficult for us to conceive that one can be a leader of others if one is not a leader of oneself" (p. 67). Therefore, wellness leadership must start at the top. Kouzes and Posner (2008) explain that, in order to believe the message, a follower must believe the messenger, and the leader has responsibility for serving as a model. Laziness, poor decision making, and the inability to care for oneself are not the characteristics of strong leaders. A strong leader must set an example and articulate a vision for wellness. Followers depend on the sincerity and the integrity of their leaders to model a desired behavior. Predictions of relationships surrounding BMI and wellness factors may provide college and university leaders the resources necessary to initiate a change in the obesity epidemic.

Research Questions

Does a relationship exist between Body Mass Index (BMI) and an individual's wellness as defined by the factors of the Indivisible Self Wellness Theory?

- Is there a relationship between BMI and an individual's total wellness?
- Is there a relationship between BMI and an individual's creative self?
- Is there a relationship between BMI and an individual's coping self?
- Is there a relationship between BMI and an individual's social self?
- Is there a relationship between BMI and an individual's essential self?
- Is there a relationship between BMI and an individual's physical self?

Process

An online version of the evidence-based 5F-Wellness inventory (Myers & Sweeney, 2005b) was distributed to full-time employees at the 20 institutions of the Association of Independent Kentucky Colleges and Universities (AIKCU) who chose to participate. All AIKCU school presidents were given the opportunity to allow email distribution of the inventory. The following AIKCU institutions participated in the project: Alice Lloyd College, Asbury University, Bellarmine University, Berea College, Brescia University, Campbellsville University, Centre College, Georgetown College, Kentucky Christian University, Kentucky Wesleyan University, Lindsey Wilson College, Mid-Continent College, Midway College, Pikeville College, Saint Catherine College, Spalding University, Thomas More College, Transylvania University, Union College, and University of the Cumberlands (AIKCU, 2010).

Participants responded using a Web-based version of the 5F-Wellness inventory consisting of 96 items. The first 80 asked participants to respond to statements that most accurately describe them most of the time. Responses were measured using a 4-point Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree). Each participant's response to the first 80 items measured perceptions regarding the Indivisible Self for the creative, physical, coping, social, and essential self. The remaining 16 items gathered demographics, including height and weight information using a standard measurement scale. Self-reported height and weight information was used to calculate each individual's Body Mass Index (BMI), which is recognized as the most common method for discovering a person's body fat (CDC, 2011b). BMI calculation is a reliable predictor for the categorization of obesity (CDC, 2011b; Obesity Action Coalition, 2011;

International Association for the Study of Obesity, 2011; & National Heart and Lung and Blood Institute, 2012). Other information that participants provided consisted of age, gender, ethnicity, marital status, employment, body composition perception, institution, and combined household income. Additional information included number of sick/illness days taken per year, number of children, screen time, highest level of education, degree type, and parents' highest level of education.

Respondents' answers were organized according to BMI as the primary independent variable. Secondary independent variables included institution, gender, education, and income. A series of simple regressions were conducted using data collected by responses to the 5F-Wellness inventory. Total wellness and the Indivisible Self factors (creative, physical, coping, social, and essential self) formed the primary dependent variables of the study.

Hypothesis

BMI influences total wellness and the five factors of the Indivisible Self Theory of wellness.

Null Hypotheses

- BMI has no influence on total wellness.
- BMI has no influence on the creative self.
- BMI has no influence on the physical self.
- BMI has no influence on the coping self.
- BMI has no influence on the social self.
- BMI has no influence on the essential self.

Key Terms and Definitions

- **Obesity**. Obesity is a label for the ranges of weight greater than what is generally considered healthy for a given height. It also is a term used to identify certain diseases and other health-related problems (CDC, 2012b).
- **Body Mass Index (BMI)**. Body mass index is a calculation of an individual's height and weight to determine their general body fat (Figure 2).

Weight Status	BMI
Underweight	< 18.5
Normal	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	30.0 – 39.9
Extremely Obese	>40.0

Figure 2. Weight Status According to Body Mass Index
(Adapted from MedicineNet.com, 2011)

- **Wellness**. Wellness describes a way of life oriented toward optimal health and well-being in which an individual's mind, body, and spirit are more fully integrated with a goal of living life more fully (Myers, Sweeney, & Witmer, 2000).
    - **Mental Wellness**. Mental wellness is stimulated by the intellectual and creative learning process and also includes the social engagement of our life functions. Mental wellness determines an individual's adaptability to manage life's challenges with the least amount of stress.
    - **Physical Wellness**. Physical wellness includes regular exercise, proper nutrition, and rest. The characteristics of a physically well individual are

categorized by muscular strength and endurance, cardiovascular strength and endurance, and flexibility. Physical wellness also refers to addressing illness and disease as a preventative measure. Proper physical wellness contributes to positive self-esteem.

- **Spiritual Wellness**. An individual's personal value system defines spiritual wellness. Spiritual wellness is considered to be a search for meaning, purpose, and general balance as part of the human existence. Spiritual wellness encompasses an existential view contributing to a balanced, meaningful life.

- **The Indivisible Self**. The human body consists of many factors functioning as one in order to maintain optimal wellness. When wellness factors are divided, the overall functionality of the individual is affected. The Indivisible Self Theory consists of three factor levels arranged around the central theme of wellness (Hattie et al., 2004). Total wellness defines the first factor level. The second order factors are defined by their associated third order factors.
  - **Creative Self**. The creative self is defined by the factors of thinking, emotions, control, work, and positive humor.
  - **Physical Self**. The physical self is defined by the factors of exercise and nutrition.
  - **Coping Self**. The coping self is defined by the factors of leisure, stress-management, self-worth, and realistic beliefs.
  - **Social Self**. The social self is defined by friendship and love.

- **Essential Self**. The essential self, a second-order factor, defined by the third-order factors of spirituality, gender identity, cultural identity, and self care (Hattie et al., 2004).

- **Leadership**. Leadership is a journey by all individuals toward the highest level of productivity in life. Appley (1990) stated:

  Positive thinking is the basis for positive action and the motivation for it, but the value of positive thinking must be implemented by the power of positive action. The synergistic effect of positive thinking plus positive action results in the realization of full human potential, a high level of productivity. (p. 82)

- **Quality of Life**. Quality of life defines an individual's overall satisfaction with life, including but not limited to work, family, friendships, love, health, physical activity, personal perception, value, spiritual awareness, and social engagement.

Assumptions and Limitations

This study assumes that employees of small Kentucky colleges struggle with their wellness and that obesity is a major contributing factor. The health-related issues that affect employees and employers because of the physical and mental illnesses associated with obesity continue to increase across America.

The survey sample is limited to small private Kentucky colleges and universities. Additionally, institutional attitudes, geographic location, access to resources, and responses for wellness may not be consistent across the 20 campuses.

Significance of the Study

This quantitative study on wellness addresses obesity and predicts a possible relationship between body mass index and employee wellness. High BMI indexes indicate the presence of obesity and negatively affect wellness. Discovering the relationship between BMI index and the Indivisible Self Model of wellness may contribute to a redefined culture for Americans. Learning to understand the complexity of obesity as a contributing factor to overall wellness emphasizes the importance of the whole person. Addressing obesity through overall wellness offers possible solutions to the obesity epidemic, which can lead to a culture of wellness that offers balance across many dimensions, including an overall improved quality of life.

CHAPTER 2: REVIEW OF THE LITERATURE

Chapter 2 defines obesity, analyzes the related literature, and also provides an examination of the impact of obesity on America. The context of wellness is outlined using the Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2005b) as a means to address the quality of life for individuals. Leadership is the resource for identifying and developing a culture of wellness within organizations. Ample research material exists regarding obesity, wellness, and leadership. Despite the availability of resources, many Americans are not well, continue to grow obese, and suffer at work and in multiple aspects of their personal lives. Despite organizational leadership's awareness of available resources, successful comprehensive wellness initiatives developed to improve the quality of life for individuals are limited.

The literature review consists of first identifying obesity and all its health-related conditions. Examining obesity on a national perspective and then examining the epidemic that consumes Kentuckians is addressed in this chapter. Establishing a baseline for the prevalence and destructiveness of the disease creates the opportunity to examine employee wellness and leadership responsibilities. The literature review identifies and defines the three holistic aspects of wellness hypothesized to affect obesity: physical, mental, and spiritual. A general history of wellness provides the internal framework for the explanation of the Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2005b). The researcher provides a breakdown of the five factors of wellness that are the primary focus of this investigation: the creative, physical, coping, social, and essential selves. A brief explanation of the context of the 5F-Wel inventory concludes the literature review.

Obesity

Obesity is a disease that attacks individuals' physical, mental, and spiritual wellness. Obesity and related health issues contribute to a decrease in health and wellness. Chronic diseases associated with obesity are the leading cause of death among Americans, increasing costs and rendering health care unaffordable for employers and employees. The scrutiny of employees' work performance increases with the demand for greater productivity from employers. Organizations' leaders feel responsible for addressing obesity as it relates to employee motivation, productivity, and overall work performance. Lifestyle choices and environmental influences negatively contribute to quality of life. Obesity statistics and other related chronic diseases continue to rise, while access to affordable health care, wellness initiatives, and education is limited or at times unavailable. The CDC (2012c) reported that the medical cost of obesity in the United States was about $147 billion in 2008. In addition, the American Public Health Association (APHA) reports that the U.S. spends more per capita than any other nation on health care, including $1.5 trillion in medical costs associated with chronic diseases such as diabetes, heart disease, and cancer (APHA, 2009). The research appears to indicate that all these chronic, preventable conditions all have direct links to obesity. APHA (2009) reports that obesity alone will cost the nation more than $344 billion in health care related expenditures by 2018.

According to the CDC (2012c), 35.7% of the U.S. adult population is clinically obese, and that statistic is rising. The CDC (2010a) defines a BMI index number between 30-39.9 as obese. According to the CDC's most recent data, nine states rank in this category (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri,

Oklahoma, Tennessee, and West Virginia). Kentucky ranks fourth in the United States for obesity prevalence, behind only Mississippi, Louisiana, and Tennessee. The Kentucky Institute of Medicine (2007) reports that 32% of Kentuckians, compared with 24% of adults nationally, report no physical activity, the second highest ranking in the country. America's Health Rankings (AHR) indicate that Kentucky ranked 44th nationally (AHR, 2010). For example, AHR (2010) identified Kentucky's national rank in the following areas: prevalence of smoking (50), physical activity (44), cancer deaths (50), poor physical health days (50), poor mental health days (50), health status (49), cardiovascular deaths (43), diabetes (47), high cholesterol (49), and high blood pressure (47). These areas represent a sample of the contributing health measures responsible for Kentucky ranking among the nation's unhealthiest, and obesity is a significant contributing factor.

The CDC (2012a) reports that 12.5 million U.S. children between the ages of 2 and 19 are clinically obese. Unfortunately, this figure shows that the number of child obesity cases has tripled since 1980. The current generation of children born in the 1990s is the first whose life expectancy is predicted not to exceed their parents' due to health, most of which is related to childhood obesity and related diseases (Olshansky et al., 2005). Childhood obesity rates continue to trend upward each year. Americans are raising a generation of morbidly obese children who are expected to be society's future leaders. Research estimates that childhood obesity is projected to increase the prevalence of obese 35-year-olds in 2020 by more than 30-40% (Bibbins-Domingo, Coxson, Pletcher, Lightwood, & Goldman, 2007). According to Barkin, Heerman, Warren, and

Rennhoff (2010), this group represents the future workforce, and obesity within their generation may negatively impact productivity and economic prosperity.

Reporting for the *New York Times*, Pam Belluck (2005) addressed childhood obesity by referencing a report in *The New England Journal of Medicine* (Olshansky et al., 2005). One of the report's contributing authors, Dr. David S. Ludwig, stated that the current childhood obesity situation is "the quiet before the storm." Ludwig, the director of the obesity program at Children's Hospital in Boston, predicts that the increase in child obesity will result in future medical conditions that have a direct impact on public health. In a related article several years later, Ludwig (2007) stated that, "if we don't take steps to reverse course, the children of each successive generation seem destined to be fatter and sicker than their parents" (p. 2325). Childhood obesity will lead to a larger public health issue in cases related to heart disease, cancer, emphysema, diabetes, kidney failure, and early death. In addition to the physical toll obesity places on children, Ludwig (2007) also identifies the severe psychosocial complications including poor self-esteem, anxiety, depression, eating disorders, social isolation, and low educational attainment.

The physical and psychological impact of obesity and other chronic health-related diseases is trending in a dangerous direction. Ludwig (2007) states that "the obesity epidemic is a looming crisis" (p. 2326). Supporting data indicate that obesity leads to rising health care costs, and the epidemic affects the nation's workforce by causing decreased productivity and increased expenditures on health care (Barkin et al., 2010). The obesity epidemic defines how Americans live their lives, and the future of society rests in changing current behaviors and rediscovering wellness. Obesity has become part of a cultural lifestyle that has an adverse effect on the wellness of society.

Despite the billions of dollars spent on advertising for nutrition, diet, fitness, and physical and mental health, the number of individuals with significant health concerns continues to increase, in addition to the associated growing medical costs. Barkin et al. (2010) make a profound point: "Given that most of one's adult life is spent on the job, employers have a unique opportunity to contribute to the solution by creating an environmental culture of health" (p. 239). Despite this opportunity, too few significant wellness programs are offered by employers. Smaller businesses do not have the resources to support comprehensive wellness initiatives. Most individuals and groups who need wellness in the workplace have the least amount of access to fight the growing issues of obesity, disease, and health care costs. Accountability and productivity at work, heath care costs for employer and employee, and the rise of chronic diseases among adults and children drive the need for these programs. Wellness initiatives that positively shape body, mind, and spirit are the key to addressing obesity. Wyatt et al. (2006) insist that the obesity epidemic can be addressed only through comprehensive approaches that focus on the physical and psychological effect of obesity.

Weight status can be determined by using BMI as a scale of measurement (Figure 2). According to Barlow and Dietz (1998), the standard obesity assessment and most consistent measure across adult age groups remains BMI. According to the NIH (2000), the direct calculation of BMI using height and weight does not discriminate against gender. The NIH (1998) states that the underweight BMI index is less than 18.5, the normal weight ranges from 18.5 to 24.9, a BMI between 25.0 to 29.9 constitutes overweight, and an index between 30.0 to 39.9 constitutes obesity in adults. Extreme obesity is defined as a BMI of 40.0 or greater. Adults who exhibit a BMI of 25 or greater

are considered at risk for a number of diseases. To calculate BMI using standard American figures, measure weight in pounds, divide by height in inches squared, and multiply by 703 for the correct body mass index (CDC, 2011b). The mathematical formula for BMI is BMI = [Weight / {Ht.} ^{2}] x 703.

BMI results represent a normal distribution across large sample sets, resulting in an acceptable measurement scale. Shavelson (1996) and Jackson (2009) state that normal distributions are simply mathematical models used to represent the frequency and distribution of data. The NIH (2000) recommends the use of BMI for assessing body fat in clinical settings. Exceptions to the BMI scale include individuals and groups with high muscle-to-fat ratios or those who have lost considerable muscle mass. NIH (2000) reports that "BMI overestimates body fat in persons who are very muscular, and it can also underestimate body fat in persons who have lost muscle mass such as elderly" (p. 8). Muscle takes up less volume than fat, and BMI does not correlate well for body composition in those cases. BMI remains the most consistent and reasonable measurement scale for determining general body mass in relation to obesity.

Adler (1998) rejects the notion that humans are made up of separate entities; instead, he contends that individuals are whole, and he stresses the unity of the mind and body. The human body is a carefully orchestrated organism that will function at high levels when all parts are aligned. Understanding BMI and the implications of obesity for health risk factors offers a pathway to wellness. Developing a comprehensive action plan for a healthy lifestyle provides the vehicle for change. The debilitating effect of obesity attacks many functional aspects of individual wellness, contributing to the epidemic

across the United States. Living well aligns those aspects and results in a high quality of life and the opportunity to reverse this trend.

Employee Wellness and Leadership

Obesity has become a problem for employers as the health of the American employee has declined. The research demonstrates that the U.S. is not controlling the obesity epidemic. Appley (1990) states that human development is a result of problem solving; obesity represents a problem to be solved. Obesity is a serious national issue that must be addressed to avoid the stagnation of human growth. The responsibility of organizations' leadership to change employees' quality of life increases as the obesity problem grows. Hunnicutt (2007) explains that building results-oriented wellness programs revolve around leadership, and that the consistent communication of the importance of wellness is the backbone of any healthy organization. Employee work environments significantly contribute to the development of individuals as whole entities. Work environments represent a source for an individual's identity development, socialization, creativity, and education. Sweeney (1998) supports the significance of the work culture by stating that work as a life task is most important for the maintenance of life. The employee wellness programs are beneficial to employers and employees for many reasons. Els and De La Rey (2006) stress the critical importance of investing in employee wellness and development in that failure to invest in the wellness of human capital is the failure of leadership to utilize employees to their fullest. While the motivating factors for creating a wellness program are different for employers and employees, the outcomes benefit both.

Marketing wellness to employees results in an intelligent, resource-wise, active approach to building a culture of wellness. Leadership within organizations positioned to embrace a culture of change and offer a high quality of life addresses many wellness factors for employees. The impact has a lasting effect on the entire community. Employees and employers share the responsibility of wellness, but the task of initiating change begins with leadership. "Leaders establish the vision for the future and set the strategy for getting there; they cause change. They motivate and inspire others to go in the right direction and they, along with everyone else, sacrifice to get there" (Kotter, 1996, p. 25). In an age of sustainability, the ability of leadership to translate vision into a sustainable reality is what Collins and Porras (1994) describe as "clock building." In other words, many of today's leaders simply tell time and do not make the investment in building a lasting culture. Collins (2004) explains that great leadership builds an enduring brand or philosophy that becomes a clock continuing to tell time long after its leadership is gone. Wellness throughout an organization should be developed over time and become a part of the culture.

A vision of wellness can be realized only through repeated communication and meaningful interaction. Leadership that does not believe the wellness of its workforce is its responsibility can never communicate this message (Hunnicutt, 2007). The greatest barrier to successful leadership is poor communication of a clear vision. Vision and mission are starting points for creating a great following. The basic plan for civilization is human development, which occurs through interrelationship with others and achieved only through positive communication (Appley, 1990). Leadership that communicates a clear vision for wellness has the opportunity to change the culture of inactivity. Hirsch

(2006) states that the mission must take place in and through every aspect of life; it is not situational, it is fundamental. "People will follow you only if they know where you're going. People follow a leader who gives clear direction" (Galloway, 2001, p. 38). A vision is something that is cultivated and shared repeatedly and cannot be achieved alone. "Only what's shared multiplies" (Galloway, 2001, p. 75). An active approach to conveying the importance of wellness in any organization is for leadership to model the way. Kouzes and Posner (2008) state that enlisting others in a common vision by appealing to shared aspirations, building trust, and facilitating relationships are essential commitments that define a realized vision. Conscious effort must be given to how wellness is planned; it must be developed and executed if employee wellness is to be successfully integrated into organizations.

A disconnect exists between programming and actual changed behaviors and habits. Offering wellness programs without careful consideration for participants is an ineffective way to help employees improve their health. Marketing wellness in an appealing way is an active approach to changing the culture within an organization. Healey and Marchese (2005) observed that healthy employees benefit employers in two important ways. They have higher productivity than unhealthy employees, who require more medical services, and drive up health insurance costs. For example, research conducted by Bertera (1990) addresses critical health-related issues of hourly employees. The program included all aspects of the employees' lives in a holistic method. Bertera (1990) stated that this was accomplished through education, incentive programming, employee challenges, fitness, regular health screenings, and family participation. Employees were challenged to view wellness through a different perspective. In the first

year after the program, the average number of disability days dropped 10.5% at program sites, while it increased 1.9% at non-program sites (Bertera, 1990). In addition, by the end of the second year, disability days dropped 14.0% at program sites and 5.8% at non-program sites. The data indicate a savings of 11,726 fewer disability days at program sites, or the equivalent of 49 employees working a full year without a day off. According to Bertera (1990), the total return on investment over two years averaged $1.42 in lower disability wage costs for every dollar invested in health promotion.

In a similar study, Bloom (2008) reported that a UPS wellness initiative resulted in a decrease in absenteeism, an increase in productivity and morale, and a 60 percent reduction of on-the-job injuries since the advent of a holistic wellness program. UPS marketed the wellness program through education and activity and by using monthly topics that were of interest to employees. Bloom found that understanding the various influences that motivate an employee to participate or not participate in wellness programs at the worksite is a critical element. While the increase in productivity and the decrease in injuries and reported health issues are significant, a number of employees reported a climate of positive attitude and morale change. Bloom (2008) and Bertera (1990) present examples of how holistic models of wellness offer more than just an increase in production. The entire physical, mental, and spiritual wellness of the individual are transformed beyond the influence of the organization.

Leadership that supports employee wellness creates a culture that benefits everyone involved. A supportive work environment promotes a healthier employee and leads to savings in health care costs, sick leave, and disability (Bertera, 1990). Chapman's (2003) evaluation of worksite health promotion economic return yielded the

same conclusive results. Employee health promotion programs can decrease health care costs and absenteeism and increase productivity. It is important to remember that most employers are focused on employee wellness for increased productivity and savings associated with health care premiums. Employers equate wellness with physical health, often ignoring the importance of other aspects of functioning that contribute to a sense of well-being and consequent work and life satisfaction (Csiernik, 1995).

Carmichael (2007) added a further perspective by stating that studies performed at leadership conferences confirm that employers perceive physically fit employees to be more qualified as leaders and more likely to be successful at work. Successful wellness programs intentionally develop a wellness philosophy for an organization that meets all of the stakeholders' needs and addresses many internal and external issues. Collins' (2004) analysis of the wellness initiative of Gale Averyt, former chairman of the board and president of Colonial Life and Accident Insurance Company, addresses many of these embedded issues. Averyt's vision was to create a better quality of life for employees, while strengthening the health of the organization. Averyt believed that a healthier organization saves money by developing a workforce that is well. Collins (2004) states that healthy employees have less stress, increased well-being, better self-esteem, and improved physical fitness and stamina. Gurchiek (2008) reports that employees at companies that offer wellness programs are more satisfied with their jobs, more likely to remain with the company, and express their appreciation for the company to others in and out of the organization. Employees who are well tend to be engaged and more productive.

Individuals want to be productive, but also they want to matter. Developing a wellness program that genuinely engages all factors of individual wellness is critical. Connolly and Myers' (2003) research of a small diverse group of employees throughout the U.S. Midwest and Southeast concluded that a positive significant relationship exists between job satisfaction, mattering, and wellness to employees. Schlossberg (1997) stated that employees' perceptions of whether they matter to their supervisors, their organization, and other aspects of their work settings may be related to increased productivity and job satisfaction. Mattering to the organization is important everywhere, including higher education.

Higher education institutions face many of the same health dilemmas; obesity is on the rise and productivity, morale, and the wellness of employees are under attack. Research conducted by Woodard and Komives (2003) indicates that campus faculty and staff have a strong desire to be part of a community that is renewing and healthy. With obesity rates soaring, colleges and universities have a fundamental objective to educate. Creating wellness initiatives on campuses is beneficial for employees and sets the example for future generations of students who attend the institution. Integrating wellness into the campus culture can increase faculty and staff interaction and improve morale (Myers & Sweeney, 2005a). Modeling wellness throughout a campus culture is healthy and an educationally consistent behavior. Healey and Marchese (2005) suggested that marketing a wellness plan that addresses individuals' wants and needs is critical for changing the organizational culture. A supportive work environment is not defined by the presence of a wellness program, but the substance of it. Impacting wellness and

cultural change within an organization is contingent upon leadership and communication with participants.

Research shows that providing employees with the tools to be healthier costs a company less money in the long run and increases productivity. Unfortunately, smaller businesses do not have the resources to support comprehensive wellness initiatives, and large companies have an expendable work force. Most individuals and groups in need of wellness in the workplace have the least amount of access to fight obesity, disease, and health care costs. Until wellness becomes part of the value system within an organization's culture, obesity and other health-related issues will remain. Minters' (1990) research supports the earlier findings and states that, to change the wellness and productivity of a company, leadership must change the entire fabric of the corporation. According to Kotter (1996), managing change is important for true transformation to occur. Continued educational opportunities for all employees are relevant to increase interest and participation over time. Assessing employee needs helps employers offer meaningful wellness promotions in the workplace and creates a comfortable atmosphere.

Leadership has an opportunity to create a culture of wellness for an organization's employees, a culture that will offer employees unlimited wellness in their personal life while maintaining a high level of productivity. "Only leaders can motivate the actions needed to alter behavior in any significant way. Only leaders can get change to stick by anchoring it in the very culture of an organization" (Kotter, 1996, p. 30). Employers that consider factors contributing to employee wellness create a culture of physically, mentally, and spiritually well individuals.

Wellness in the workplace is not exclusively about performance; it is about leading people to live meaningful lives. Research indicates that successful wellness outcomes rely on active participation by employers and employees; however, fewer wellness programs are offered. Initiatives that positively affect the physical, mental, and spiritual wellness of employees are key to addressing obesity. Positive thoughts plus positive action equals the realization of full human potential (Appley, 1990). The benefits of organizing a wellness program at the corporate level are numerous. The productivity, morale, renewed mind, and better health have an influence beyond employment and are socialized into an individual's culture. Snyder and Lopez (2002) identify this as the human factor, a critical element for the development of human capital. Physical, mental, and spiritual wellness must be considered parts of an individual's substance. Employee satisfaction and productivity can be observed in a renewed attitude and sense of personal value. Els and De La Rey (2006) identified wellness as an individual's approach to improving the quality of his or her life, health, and psychological strengths in proactive and positive ways. Employee wellness initiatives should be intended to change the alarming increase in obesity and related health issue statistics in an effort to develop a culture of wellness. Employers have an opportunity to create healthy work environments and more productive employees; they have the ability to change an entire culture.

Physical Wellness

The ability to function without pain and illness is the primary objective of physical health. Cooper (1970) attributed health and longevity to physical activity, nutrition, and self-care. His work developed a deeper understanding of the relationship

of physical health and overall wellness. While physical activity is responsible for reducing the risk of cardiovascular disease and other obesity-related health diseases, physical wellness has a deeper meaning. Physical wellness has a broad impact on overall wellness. Habits that include regular exercise and a clean diet directly impact obesity and related health issues. Physical wellness is directly affected by good behaviors associated with exercise and nutrition. Stanley (1873) said, "Those who think they have not time for bodily exercise will sooner or later have to find time for illness" (para. 1).

Now is the time for society to drop the traditional view of wellness treatment by becoming proactive instead of reactive. Waiting to treat sickness and disease has resulted in a society of morbidly obese people with health complications who exist rather than live. Identifying proactive models of wellness that shape a positive holistic wellness lifestyle focused on the importance of human development is more beneficial to a sustainable life (Els & De La Rey, 2006).

People succumb to the choices they make; individual health, wellness, and mortality are directly linked to these choices. Research indicates that individuals who exhibit a balance of exercise and nutrition in their daily habits have better overall health and a sense of wellness. Exercise and nutrition play a critical role in determining the physical, mental, and spiritual durability of an individual's mood and performance. The benefits of moderate physical activity are well-known and include a lowered risk of cardiovascular disease, reduced weight, and a relaxed frame of mind. The CDC (2011a) attributes lower cholesterol, controlled blood sugar, lower blood pressure, and decrease in BMI to regular physical activity. "Maintaining a healthy lifestyle of fitness, flexibility,

and strength through a healthy exercise regimen and diet is the central focus of physical wellness" (Miller & Foster, 2010, p. 11-12).

Carmichael (2007) added further perspective by stating that five essential elements should be followed for a full life: fitness, nutrition, relationships, career, and health. Carmichael, the professional coach to seven-time Tour de France winner Lance Armstrong, noted that balanced fitness and nutrition allow an individual to have more energy, increased strength and agility, consistent weight management, greater stability, and increased endurance. Carmichael said that physically fit individuals are "leaner, more energetic, stronger, and better equipped to handle whatever life throws at you" (p. 17).

Mental Wellness

While inactivity is a contributing factor to obesity, inactive people also have a significantly higher risk of depression (Oeland et al., 2010). Research shows that depressed people have a lower quality of life. In addition to previously noted conditions, poor physical health contributes to poor mental health. Galper, Trivedi, Barlow, Dunn, and Kampert (2006) stated that symptoms of depression are associated with reduced functional status and impaired occupational performance. Those who struggle with depression and try to change their quality of life are at a disadvantage for achieving wellness. A special report by the Mayo Foundation for Medical Education and Research (2007) found that depression significantly interferes with an individual's ability to function on a daily basis; even the mildest forms of depression can be barriers to discovering wellness.

Obesity also has psychological effects. Maslow's Hierarchy of Needs (1943) lists self-esteem as a fundamental aspect of human existence. According to *Psychology Today* (n.d.), low self-esteem leads to depression and often results in an individual failing to reach their potential. Hafen, Frandsen, Karren, and Hooker (1992) concluded that "positive self-esteem is a preventative factor for illness that enhances recovery from illness, and enhances overall well being" (p. 5). Researchers acknowledge the increase of obese subjects and the rise in depression cases within the population (Wyatt et al., 2006). The argument for proactive approaches addressing the correlation between obesity and psychological issues is evident.

Obesity strips an individual of self-esteem, of what Cherry (1926) calls "that other thing" (p. 43). "That other thing" is the fabric of human existence, it is the determination to live, and it is what Cherry (1926) describes as the "pulse of the soul" (p. 45). Poor physical health contributes to poor mental health. Rooney (2011) said, "The human species was designed for action and achievement. When people are not centered on achieving what they personally consider a worthwhile goal, the stagnation only brings about depression, illness and disease" (para. 4). Rooney said that when an individual's "actions are aligned with their higher purpose; they possess boundless energy and enthusiasm" (para. 4). Positive action, energy, and enthusiasm are the missing elements for obese individuals who have lost their motivation and suffer from low self-esteem.

Spiritual Wellness

As obesity and other health-related diseases attack physical and mental wellness, spiritual wellness also is at risk. Spirituality contributes to the physical and mental health of individuals and has a broad definition directly linked to mental health as it relates to

personal confidence, security, and attitude (Hill & Pargament, 2003). Spirituality and religion are two distinct subjects. Sweeney (1998) adds an Adlerian spirituality perspective by stating that it is part of the human condition to need and want to deal with personal existential issues. He adds that spirituality is a key component to birth, longevity, and quality of life.

Purdy and Dupey (2005) developed a spiritual wellness model centered on a universal force where the spirit influences all life tasks. The model focuses on spiritual competencies to allow individuals to adjust during periods of change and live happier lives. Similarly, Myers et al. (2000) developed the Wheel of Wellness Model with spirituality as the central feature. They defined spirituality as "an awareness of a being or force that transcends the material aspects of life and gives a deep sense of wholeness or connectedness to the universe" (p. 252). The connectedness and ability to secure meaning in life is what determines how an individual manages change and provides balance across spiritual wellness. The goal is to achieve optimal wellness through individual mastery of the multiple variables of life. Obtaining spiritual wellness is dependent upon an individual's ability to adapt and change through environmental lifecycles. Bentley, Bigbee, and Cashwell (2007) suggest that spiritual wellness is about experiencing life fully awake and mindful of the present life experiences.

Viewing spiritual wellness through a macro and micro lens offers a balanced view of an individual's connection to environment and personal value in the environment. Frankl (1984) addresses the meaning of life in the seminal book *Man's Search for Meaning*. Frankl discusses his experiences as a prisoner in the Nazi concentration camps of Auschwitz and Dachau. His views place a deep value on the understanding of an

individual's value in life which is the purpose behind finding a spiritual wellness. Frankl makes a profound statement that directly addresses the foundation behind the meaning of existential spirituality: "Man does have a choice of action. Man can preserve a vestige of spiritual freedom, of independence of mind, and even in such terrible conditions of psychic and physical stress" (p. 86). Frankl adds "that everything can be taken from a man except one thing, the last of the human freedoms – to choose one's attitude in any given set of circumstances, to choose one's own way" (p. 86).

According to Frankl (1984), the meaning of life is found in every living moment; all life, in the micro and macro sense, is significant and has meaning. Despite the tragedies of life like suffering, illness, and death, there is still meaning. Allowing those tragedies to consume that meaning in life reduces an individual's ability to live well. As Frankl explains, the control individuals have of their spiritual self is powerful; it determines their existence. Obesity is a factor directly responsible for an individual's attitude, and it influences sense of worth and self-esteem. Individuals can choose their way by making the conscious decision to live well. Addressing obesity is a significant factor to finding spiritual wellness by rediscovering self-worth and self-esteem, and is one of the contributing factors to the overall theory of wellness that is defined by the absence of illness and a state of well-being (WHO, 2005).

Wellness Theory

Wellness is an accumulation of many aspects of human life that operate collectively to create the whole person. Ardell (2005) stated that wellness is a philosophy that centers on a balance of multiple life tasks that increase chances for a high quality of life. The various theories of holistic wellness each follow a central theme of body, mind,

and spirit. "As individuals and families strive to meet their daily responsibilities in work, friendships, and love relationships, there is a need to maintain a perspective not only on what is adequate health and what is normal but what is necessary and desirable for optimal health and functioning" (Witmer & Sweeney, 1992, p. 140). The constitution of the WHO (2005) states that optimal health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (p. 1). Wellness theory is foundationally built around the overall quality of life for individuals and their interaction within the environment. To that end, the WHO believes that "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being...the health of all people is fundamental" (p. 1).

Myers and Sweeney (2007) trace the origin of wellness to the Greek god of healing, Asclepius, and his two daughters Panacea and Hygeia. Hygeia is credited for preventative health measures and overall wellness through healthy practices associated with long life. Panacea promoted wellness through the treatment of existing diseases. The Panacea philosophy, according to Myers and Sweeney (2007), is responsible for more than two-thirds of all causes of death in the United States that could be prevented through modified conscious choices. The Hygeia theory of teaching positive habits of living as preventative medicine is theoretically aligned with the concept of wellness. According to Myers et al. (2000), wellness is a conscious choice, and each choice made toward wellness empowers an individual in the direction of greater happiness and life satisfaction and enhances one's overall well-being. Jonas (2006) noted that wellness is "a way of life and living in which one is always exploring, searching, finding new questions and discovering new answers, along the three primary dimensions of living: the physical,

the mental, and the social" (p. 6). This offers a way of life designed for each individual to reach maximum potential under the factors of wellness through proactive healthy life choices.

Wellness as it is interpreted today found its roots in the work of Dunn (1961), who said, that it is "an integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable. It requires that the individual maintain a continuum of balance and purposeful direction within the environment where he is functioning" (Dunn, 1961, p. 4). Today, much of the modern wellness movement is credited to Hettler (1984), who defined wellness "as an active process through which people become aware of, and make choices toward a more successful existence" (p. 13). As co-founder of the National Wellness Institute, his work involving holistic wellness contributed to the development of the six dimensions of wellness theory, designed around a model (Figure 3) of occupational, physical, social, intellectual, spiritual, and emotional wellness (National Wellness Institute, 1976).

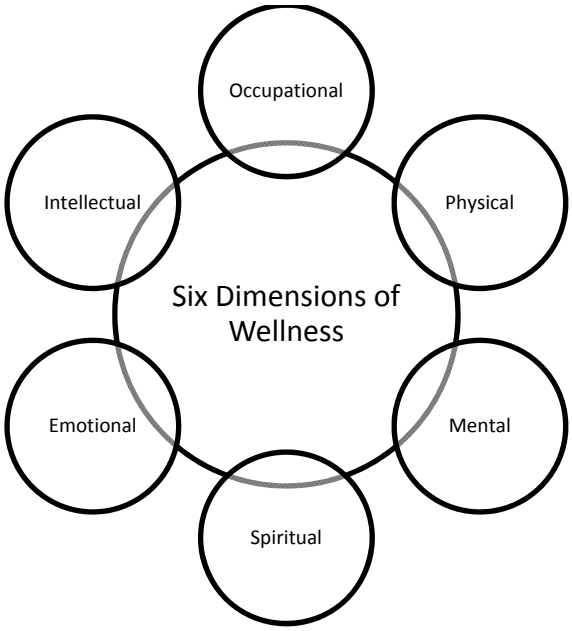


Figure 3. Six Dimensions of Wellness (Adapted from Hettler, 1976)

Hettler (1976) believed that one's application of the six dimensions creates the awareness of the interconnectedness with healthy living and the pathway to optimal living. The six dimensions are most closely connected to wellness through physical activity. Hettler focused on the benefits of physical activity and the relationship across the six dimensions. This early wellness theory created a culture that developed into a body of research combining physical, mental, and spiritual components.

In the early 1990s, Sweeney and Witmer (1991) introduced the Wheel of Wellness. Witmer and Sweeney (1992) continued to develop and explore the Theory of Holistic Wellness by developing a "model of wellness and prevention over the life span" of individuals that "incorporates theoretical concepts from psychology, anthropology, sociology, religion, and education" (p. 140). Continued extensive research by Myers et al. (2000) led to the development of the present Wheel of Wellness Model, which was developed from the work of Alfred Adler (1964) who defined three essential life tasks: work, friendship, and love. The initial three life tasks were expanded through the

continued research of Mosak and Dreikurs (1967); two additional life tasks were included: coping with oneself and spirituality. Adler often wrote on the subject of coping with oneself; however, Mosak and Dreikurs (1967) noted that, in most of Adler's early writing, he often referred to spirituality but rarely returned to finish his point.

Myers et al. (2000) further developed Adler's (1964) theories and created a model (Figure 4), which is typically depicted in a wheel, with the general life tasks of spirituality and self-direction as central elements to the philosophy of wellness. The wheel further depicts the 14 additional life sub-tasks as spokes on a wheel, interacting with one another to create a total wellness experience. These life sub-tasks consist of cultural identity, sense of worth, sense of control, realistic beliefs, emotional awareness and coping, problem solving and reliability, sense of humor, nutrition, exercise, self-care, stress management, and gender identity (Myers & Sweeney, 2005a). The outer part of the wheel is connected to the four other general life tasks of love, friendship, work, and leisure. Myers et al. (2000) believed the life tasks identified in the model interact with various life forces that include, but are not limited to, family, community, religion, government, education, media, and industry.

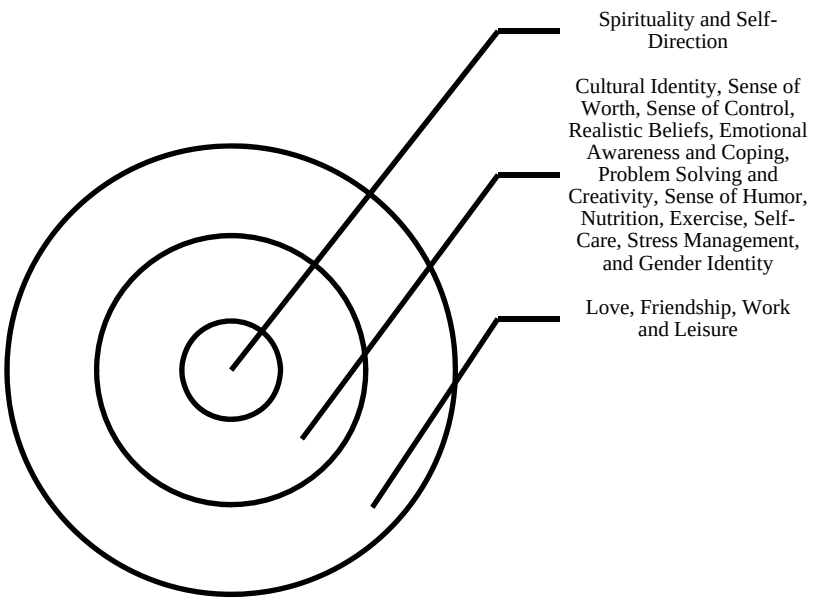


Figure 4. The Wheel of Wellness (Adapted from Myers & Sweeney, 2005a)

Also included in the Wheel of Wellness was the understanding that global events such as war, flooding, and famine impact the relationship of the life tasks and affect the perspective of the individual's wellness. Increased wellness, the quality of life and sustained health, is a result of the cumulative wellness choices across an individual's lifespan (Myers et al., 2000). Myers et al. (2000), as did Adler (1964) recognized wellness as a seamless, holistic study of human development. Healthy functioning and wellness are dependent on the relationship of all the wellness factors. According to Myers et al., changes in one area of wellness affect other areas in positive and negative ways.

Support for positive interaction within the factors of the Wheel of Wellness is evident by the research conclusions of the Wellness Evaluation of Lifestyle (WEL) assessment instrument developed by Myers, Sweeney, and Witmer (1998). According to Hattie et al. (2004), the WEL was "developed to assess each of the five life tasks and

subtasks in the Wheel of Wellness" (p. 355). The researchers developed this instrument by conducting four studies over six years. The result was an inventory that tests human wellness and establishes wellness guidelines and objectives for participants. The tool has been used successfully to analyze responses from thousands of individuals.

The Indivisible Self

Adler (1964, 1998) theorized that understanding the whole person and his or her socialization within the context of the environment is the essence of the well individual. Ramey and Leibert (2011) stated that Adler "saw humans as mind, body, and spirit; indivisible, inseparable, creative, unique, and purposeful" (p. 1). When individuals are encouraged and exhibit self-confidence, they develop a sense of belonging that contributes to their overall wellness. Adler further explained that individuals strive for superiority; it is an aspect of developmental growth and a necessity of life. The state of wellness for society has been identified as lacking and is evident through the rising obesity rates and other health-related issues.

Adler (1964) noted that all individuals wish to overcome difficulties; they have an innate desire to reach a goal to feel strong, superior, and complete. Adler believed that a deeply embedded need for self-preservation exists, and to that end individuals will actively "struggle to rise from an inferior to a superior position" (p. 104). From birth to death, Adler said that individuals seek to move "from defeat to victory, from below to above" (p. 104). This is the argument for the whole person - an individual made up of many parts acting in unison to offer completeness. Addressing the overall wellness of individuals is an opportunity to move society from defeat to victory in the war on obesity.

The Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2004) was developed based on the Wheel of Wellness Model (Witmer et al., 1998). Previous research and analysis of the data stimulated the movement for an advanced theory that improved many of the earlier factors of wellness. Adlerian educators and counselors Myers and Sweeney (2004) expanded on Adler's (1964) theory through extensive data collection, leading to the development of the Indivisible Self: An Evidence Based Model of Wellness (Figure 5).

First-Order Factor: **The Indivisible Self**	
Second-Order Factors:	Third-Order Factors:
Creative Self:	**Thinking, Emotions, Control, Work, Positive Humor**
Physical Self:	**Exercise, Nutrition**
Coping Self:	**Leisure, Stress-Management, Self-Worth, Realistic Beliefs**
Social Self:	**Friendship, Love**
Essential Self:	**Spirituality, Gender Identity, Cultural Identity, Self-Care**

Figure 5. The Indivisible Self (Adapted from Myers & Sweeney, 2004)

The Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2004) addresses the original 17 wellness factors and 4 contextual factors that affect them. The Indivisible Self is identified as the primary first-order factor in the framework of the wellness theory. According to Myers and Sweeney (2005a,b, 2007), the Indivisible Self is defined by 5 second-order factors and 17 third-order factors. The framework of the theory is heavily invested in the connection between the second-order and third-order factors. The dynamic relationship and adherence to all five second-order factors compose the Indivisible Self. Understanding the nature of the second-order factors and how the third-order factors relate to each is essential for wellness development. It is critical to understand that Myers and Sweeney (2004) developed the Indivisible Self

Model based on the characteristics of healthy people. Hattie et al. (2004) provide the following context for each of the second- and third-order factors.

- **The Creative Self.** The creative self involves thinking, emotions, control, work, and positive humor. Research and common sense dictate that what an individual thinks often has a direct effect on the emotions and the body. Conversely, emotional experiences affect judgment and cognitive responses. The understanding of control is a reaction to perceptions embedded in the events of everyday life. Similar to thinking, positive humor has a direct influence on physical and cognitive functioning. Work is an essential human element that defines how fully one lives life.
- **The Physical Self.** The physical self is defined by exercise and nutrition. The research evidence is clear that exercise, diet, and nutrition are critical factors to longevity and sustainability for a full life.
- **The Coping Self.** The coping self is measured by leisure, stress-management, self-worth, and realistic beliefs. Coping is composed of elements that regulate responses to life events and provide the ability to manage their negative effects. The effectiveness of an individual to manage various forms of stress associated with work, relationships, and general life challenges defines the ability to adapt.
- **The Social Self.** The social self involves friendship and love. Isolation and separation from others have been proven to contribute to the development of poor health and premature death. Social support networks remain the strongest identified predictor of positive mental health (Myers & Sweeney, 2005a,b). Friendship and the associated love and bond that exist in those relationships are

the cornerstone for many aspects of wellness. Biological or adopted means present the strongest connection for friendship and love.

- **The Essential Self.** The essential self is defined by spirituality, gender identity, cultural identity, and self-care. It is manifested in the existential theory defined by the meaning of life. Gender and cultural identity are seen as filters through which individuals define their life experiences and relationships with others. Self-care is a critical factor determining ones effort to live long and live well. Those who surrender the ability to seek purposeful meaning in their lives usually exhibit signs of hopelessness and despair that lead to illness and an abandonment of a high quality of life.

The Indivisible Self Theory is tested using the 5F-Wellness Inventory ([5F-Wel], Myers, & Sweeney, 2005b). The inventory offers individuals results on the five factors of wellness. The assumption is that no one will be balanced in all factor levels. However, optimal wellness is dependent upon the pursuit of balance within the lifestyle factors. Results from the inventory consider areas for growth and development.

5 Factors Wellness Inventory

The 5F-Wel (Myers & Sweeney, 2005b) inventory is a measure of one's self-perception of wellness across the first-order factor of the Indivisible Self, the five second-order factors, and the 17 third-order factors. The instrument is designed to assist in making healthier lifestyle choices based on a model for wellness (Abrahams & Balkin, 2006). Those who independently take the 5F-Wel inventory receive a wellness profile. Myers and Sweeney (2005b) state that, "from a counseling perspective...the wellness score can serve as a screening tool to determine major areas where wellness intervention

is needed" (p. 30). Myers and Sweeney believe that intervention leads to enhanced functioning for the individual across specific second- and third-order wellness factors.

Multiple studies have been conducted using the 5F-Wel (Myers & Sweeney, 2005b). Myers, Luecht, and Sweeney (2004) indicate that the 5F-Wel has been used in many empirical studies as an outcome measure or dependent variable. The 5F-Wel (Myers & Sweeney, 2005b) is a strong instrument in support of holistic wellness for its reliability and validity during testing. Regarding reliability, Hattie et al. (2004) report alpha coefficients of .90 and higher for each of the five second-order factors. Myers and Sweeney (2005b) conclude that evidence exists for the validity of the 5F-Wel inventory based on the examination of different variables across multiple studies.

The 5F-Wel instrument exists in three forms and requires a minimum of a third-, sixth-, and ninth-grade reading level for child, adolescent, and adult populations, respectively. The standard adult version of the inventory is composed of approximately 91 items. Each statement is scored on a 4-point Likert scale ranging from strongly agree to strongly disagree and usually takes individuals 10 – 20 minutes to complete. In order to substantiate the Indivisible Self Theory and create the 5F-Wel instrument, the contextual components were developed from an adult population sample of 3,343 inventories gathered from the original WEL inventory research data base (Hattie et al., 2004). The 5F-Wel inventory was specifically designed to assess the characteristics of the indivisible self and to help individuals in making choices toward healthier living (Myers & Sweeney, 2005a,b).

CHAPTER 3: METHODOLOGY

Chapter 3 describes the research design used to investigate the relationship between BMI and wellness among full-time employees at small private Kentucky colleges. This chapter provides an outline regarding the research process. It also serves as a guide for replication of further research. This study has been approved by the Western Kentucky University (WKU) IRB and presents a minimal risk to participants (Appendix A). The Association of Independent Kentucky Colleges and Universities (AIKCU) has approved and provided full support for the research study, with the benefit of the data collected and offering valuable information for each participating institution (Appendix B). Seventeen of the 20 AIKCU member presidents have offered their institutions' support to participate in this study.

Restatement of Purpose

The purpose of this investigation was to explore the relationship between BMI and factors of wellness among full-time employees at private Kentucky colleges and universities. BMI served as a measure of obesity for the investigation. BMI was the identifying variable for discovering whether a relationship existed between BMI and factors of wellness for full-time employees. Wellness was defined according to The Indivisible Self: An Evidence Based Model of Wellness that measures wellness across five indivisible self factors: the creative, physical, coping, social, and essential self (Myers, & Sweeney, 2005a).

Research Design

In this quantitative study, the researcher analyzed the responses of the sample populations to determine whether a relationship exists between BMI and employee

wellness according to The Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2005b). The adult version of the 5F-Wel inventory was used by participants to collect response data for perceptions of wellness. The survey instructions required participants to respond to statements in an honest, sincere way that most accurately described them most of the time. Item statements measured perceptions of the Indivisible Self. The dependent variables were total wellness and the five factors of the creative, physical, coping, social, and essential self. The primary independent variable was BMI. Height and weight information gathered for each participant determined that individual's BMI. Analysis of additional demographic information (including family income; number of children in the household; institution; education; biological sex; cultural background; marital status; and hours of screen time, sick days, and age) were gathered to identify the sample population.

The researcher used a method of regression analysis to determine relationships between the independent and dependent variables. It is doubtful that BMI is influenced by only one of the second-order factors of wellness; therefore, the researcher conducted simple regressions to discover what relationships existed. Regression analysis predicts an individual's score on one variable when one or more other variables are involved (Jackson, 2009). According to Shavelson (1996), the purpose of regression is to specify a functional relationship between an independent and dependant variable. Developing an understanding of wellness depends on a variety of factors; therefore, it was necessary to run a series of regressions to predict relationships. Regression analysis provides a realistic investigation of the relationship between BMI and each wellness factor.

The researcher hypothesized that BMI influences quality of life and, therefore, wellness. As indicated in the review of the literature, those with balanced lifestyles tend to be more physically, mentally, and spiritually well. The absence of obesity in one's life is a significant factor in determining overall wellness.

Primary Research Question

Is there a relationship between BMI and factors of wellness among full-time employees at private Kentucky colleges and universities?

Six Secondary Research Questions

Question 1: Is there a relationship between BMI and an individual's Total Wellness?

Question 2: Is there a relationship between BMI and an individual's Creative Self?

Question 3: Is there a relationship between BMI and an individual's Coping Self?

Question 4: Is there a relationship between BMI and an individual's Social Self?

Question 5: Is there a relationship between BMI and an individual's Essential Self?

Question 6: Is there a relationship between BMI and an individual's Physical Self?

The Population

The population consisted of full-time employees at Kentucky's private colleges and universities that belong to AIKCU. The following list of member institutions solicited participants for the research: Alice Lloyd College, Asbury University, Bellarmine University, Berea College, Brescia University, Campbellsville University, Centre College, Georgetown College, Kentucky Christian University, Kentucky Wesleyan University, Lindsey Wilson College, Mid-Continent College, Midway College, Pikeville College, Saint Catherine College, Spalding University, Thomas More College,

Transylvania University, Union College, and University of the Cumberlands (AIKCU, 2010).

According to a profile of Kentucky's most healthy and least healthy counties, within the 20 AIKCU schools only Asbury University, Midway College, Transylvania University, Brescia University, and Kentucky Wesleyan University are located in counties ranked in the top 10 healthiest counties (Kentucky Institute of Medicine, 2007). According to the Kentucky Institute of Medicine (2007), the following institutions are located in some of the Commonwealth's least healthy counties: Kentucky Christian University, Union College, Lindsey Wilson College, University of the Cumberlands, Pikeville College, and Alice Lloyd College. The profiles of the most and least healthy counties in Kentucky consist of information related to demographics, health care access, health outcomes, cancer death rates, prevalence of smoking, physical activity, and prevalence of obesity. A list of institutions, county of residence, and health rank are listed (Figure 6).

Method, Materials, and Procedures

Following AIKCU support and WKUIRB approval, all 20 AIKCU presidents were contacted by email. Lindsey Wilson College President William T. Luckey, Jr., endorsed a cover letter emailed to each AIKCU president (Appendix E) requesting support from each institution to participate in the research study, and two attachments were included. The first was an endorsement by AIKCU President Gary Cox (Appendix B), and the second was a letter of support (Appendix D) with instructions from the researcher. The instructions asked each president to identify a contact representative at their institution and provide that information to the researcher.

Institution	County	Rank
Alice Lloyd College	Knott	114
Asbury University	Jessamine	3
Bellarmine University	Jefferson	12
Berea College	Madison	20
Brescia University	Daviess	8
Campbellsville University	Taylor	39
Centre College	Boyle	38
Georgetown College	Scott	14
Kentucky Christian University	Carter	77
Kentucky Wesleyan University	Daviess	8
Lindsey Wilson College	Adair	91
Mid-Continent University	Graves	52
Midway College	Woodford	5
Pikeville College	Pike	110
Saint Catherine College	Washington	49
Spalding University	Jefferson	12
Thomas More College	Kenton	18
Transylvania University	Fayette	6
Union College	Knox	81
University of the Cumberlands	Whitley	97

Figure 6. Kentucky College and University County Health Rankings (Kentucky Institute of Medicine, 2007)

The researcher provided each institutional representative the informed consent and instructions that were distributed through their campus email system (Appendix C). Participation was voluntary. A link with instructions was available to full-time employees who chose to participate. The link directed participants to the 5F-Wel inventory. The survey was available March 12, 2012, through March 30, 2012, and participation constituted informed consent. Each participant's responses to the 5F-Wel was gathered and analyzed by the original author. Upon completion of the survey, the

electronic results were collected by the original author Dr. Jane Myers. Third-party data collection provided an additional level of security and anonymity for participants.

An agreement with 5F-Wel author Dr. Jane Myers consisted of a contract of terms that included the use of the inventory and collection of data to be released to the researcher upon completion of the survey. When the final data was collected, the author released to the researcher the demographic information, item responses, and subscale scores for all participants. Raw scores and J-scores for the 5F-Wel factors also were included. The data was examined using the Statistical Package for the Social Sciences version 18 (SPSS) software. According to Slavin (2007), "SPSS is by far the most widely used statistical package for data analysis in educational research" (p. 241).

The 5F-Wel inventory for this study consisted of 96 sample items. The scores for participants were determined by responses to items associated with The Indivisible Self: An Evidence Based Model of Wellness (Myers & Sweeney, 2005b). The analysis of the wellness scores included the first-, second-, and third-order factors of the theory. Responses were designed on a 4-point Likert type scale ranging from (1) strongly agree, (2) agree, (3) disagree, and (4) strongly disagree. Each item response was converted to a numerical score. Sample inventory questions are as follows:

- I eat a healthy diet.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree

- I am satisfied with my life.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree

Myers and Sweeney (2005b) explain that a linear transformation is performed for responses, resulting in a raw score; the total number of points is divided by the number of items within the scale and then multiplied by 25. Individual profile scores ranged from 25-100. The results of this calculation offered individual results for each of the five factor levels of wellness and an overall wellness score.

The reliability and validity of the 5F-Wel is strong, according to Myers and Sweeney (2005b). Reliability alpha coefficients are reported in Table 1 for total wellness and each of the five second-order factors of wellness. According to Myers and Sweeney (2005b), the factors have been examined across multiple studies, substantiating the convergent and divergent validity of each factor.

Table 1.

Reliability Alpha Coefficients of 5F-Wel Inventory

Component	Alpha	Number of Items
Total Wellness	0.98	73
Creative Self	0.96	21
Coping Self	0.89	19
Social Self	0.96	8
Essential Self	0.95	15
Physical Self	0.74	10

(Adapted from Myers & Sweeney, 2005b)

In addition to the specific wellness inventory questions, important height and weight information was self-reported using a standard measurement scale. This information was critical and was used to calculate each individual BMI. Self-reporting of height and weight by participants offered possible inconsistencies, but that was balanced against the perception of body compensation inquiry. Regression analysis of BMI and each factor of wellness determined whether obesity is a significant factor for overall wellness and quality of life. Measuring the independent variable of BMI as a condition that affects the dependent variables of total wellness, the creative self, the physical self, the coping self, the social self, and the essential self will offer valuable information.

The study also collected specific demographic information for additional research. Information about marital status; highest level of education completed; degree type; gender; ethnicity; age; children in household; combined family income; title (faculty, staff, or administrator); institution (Berea, Lindsey Wilson, Union, or other); social/work screen time (hours of computer, television, and tablets); sick/illness days per year; perception of body composition; highest level of parent's education all represent significant demographic information regarding employee factors of wellness.

Hypothesis. BMI influences total wellness and the five factors of the Indivisible Self Theory of Wellness.

Null Hypotheses (H_o). Body mass index (BMI) has no influence on total wellness and the five factors of the Indivisible Self Theory of Wellness.

- BMI has no influence on the Total Wellness.
- BMI has no influence on the Creative Self.
- BMI has no influence on the Coping Self.

- BMI has no influence on the Social Self.
- BMI has no influence on the Essential Self.
- BMI has no influence on the Physical Self.

Conclusion

The results of this study will indicate whether a relationship exists between BMI and factors of wellness among full-time employees at private Kentucky colleges and universities. By analyzing BMI against factors of wellness, the researcher can offer predictions about the quality of life for employees working in Kentucky private higher education. Developing an understanding of how BMI contributes to one's wellness offers useful information for addressing wellness concerns for employees and employers.

CHAPTER 4: RESULTS

This study explored the relationship between BMI and wellness, as defined by the Indivisible Self Theory. Chapters 1, 2, and 3 provide the framework for the evaluation of this study. The outline of the problem, literature review, and methodology provide the foundation and theoretical understanding of the issues surrounding obesity and employee wellness. The significance of the research relates fundamentally to the literature review regarding obesity and employee wellness. The analysis in Chapter 4 addresses the hypothesis that BMI influences total wellness and the five factors of the Indivisible Self Theory of Wellness.

Chapter 4 will explore the relationship between BMI and factors of wellness among full-time employees at private Kentucky colleges and universities. To determine what relationships exist, the researcher addresses six specific questions regarding BMI and the Indivisible Self Wellness Theory.

Question 1: Is there a relationship between BMI and an individual's total wellness?

Question 2: Is there a relationship between BMI and an individual's creative self?

Question 3: Is there a relationship between BMI and an individual's coping self?

Question 4: Is there a relationship between BMI and an individual's social self?

Question 5: Is there a relationship between BMI and an individual's essential self?

Question 6: Is there a relationship between BMI and an individual's physical self?

Demographic Information

The analysis of survey data revealed detailed demographic information for 995 participants, 17 of whom provided incomplete responses that rendered the data unusable. The viable sample population of full-time faculty, staff, and administrators consisted of

978 AIKCU employees from 17 institutions (Table 2). The AIKCU population consisted of Alice Lloyd (n = 27), Asbury (n = 52), Berea (n = 71), Campbellsville (n = 139), Centre (n = 23), Georgetown (n = 72), Kentucky Christian (n = 37), Kentucky Wesleyan (n = 38), Lindsey Wilson (n = 122), Mid-Continent (n = 44), Midway (n = 44), Pikeville (n = 28), Saint Catherine (n = 51), Thomas More (n = 50), Transylvania (n = 63), Union (n = 44), and University of the Cumberlands (n = 73). Of the 20 eligible AIKCU schools, Bellarmine University, Brescia University, and Spalding University were unable to participate.

In gathering additional demographic information (Table 3), the researcher attempted to capture a snapshot of the make-up of the individuals employed at small private Kentucky colleges and universities. Beyond the employment institution, important information regarding gender, employment status, marital status, number of children in the household, combined family income, highest level of education completed, and total number of hours of screen time per day including computer, handheld devices, and television was collected. The significance of these demographic items may offer considerations for this research and future studies.

Female participants significantly represented the population by nearly 2:1. Of the 978 total participants, 64.5% (n = 631) were female and 35.5 % (n = 347) were male. The survey instructions required that only full-time employees participate in the survey. The researcher classified employment status as faculty, staff, and administrators.

Table 2

Demographic Information of Participants (Institutions)

	N	Percent
Alice Lloyd College	27	2.8
Asbury College	52	5.3
Berea College	71	7.3
Campbellsville University	139	14.2
Centre College	23	2.4
Georgetown College	72	7.4
Kentucky Christian University	37	3.8
Kentucky Wesleyan University	38	3.9
Lindsey Wilson College	122	12.5
Mid-Continent University	44	4.5
Midway College	44	4.5
Pikeville College	28	2.9
Saint Catherine College	51	5.2
Thomas More College	50	5.1
Transylvania University	63	6.4
Union College	44	4.5
University of the Cumberlands	73	7.5
Total	978	100.0

Administrators (n = 95) made up the smallest population of responders at 9.7%, faculty (n = 317) at 32.4%, and staff (n = 566) employees represented the largest population of responders at 57.9%. Of the 978 participants, 76.9% indicated they were married (n = 752); the single demographic reflected 14.1% of respondents (n = 138); and separated (n = 9), divorced (n = 69), and widowed (n = 10) made up 0.9%, 7.1%, and 1.0%, respectively.

Table 3

Demographic Information of Participants (Gender, Employment Position, Marital Status, Number of Children, Combined Household Income, Highest Level of Education, Hours of Screen Time Per Day)

	N	Percent
Male	347	35.5
Female	631	64.5
Total	978	100.0
Faculty	317	32.4
Staff	566	57.9
Administration	95	9.7
Total	978	100.0
Married	752	76.9
Single	138	14.1
Separated	9	.9
Divorced	69	7.1
Widowed	10	1.0
Total	978	100.0
0 Children	535	54.7
1 Child	182	18.6
2 Children	181	18.5
3+Children	80	8.2
Total	978	100.0
Income < $20,000	22	2.2
$20,000-$29,999	85	8.7
$30,000-$39,999	92	9.4
$40,000-$49,999	107	10.9
$50,000-$59,999	115	11.8
$60,000-$69,999	94	9.6
$70,000-$79,999	106	10.8
$80,000-$89,999	72	7.4
$90,000-$99,999	82	8.4
$100,000 or more	203	20.8
Total	978	100.0
High School Graduate	83	8.5
Trade/Tech./A.A. Degree	65	6.6
Bachelor's Degree	285	29.1
Advanced Degree	545	55.7
Total	978	100.0
0-2 Hours of Screen Time	138	14.1
3-5 Hours of Screen Time	272	27.8
6-8 Hours of Screen Time	295	30.2
9+ Hours of Screen Time	273	27.9
Total	978	100.0

More than half the population, 54.7% (n = 535), reported no children in the households. Equally distributed were one child in the household at 18.6% (n = 182) and two children in the household at 18.5% (n = 18.5). Only 8.2% (n = 80) of participants reported having three or more children. Combined family income ranged from less than $20,000 per year (n = 22) to over $100,000 per year (n = 203), with additional combined family incomes dispersed across the population represented in Table 3. Additionally, 8.5% (n = 83) reported they completed high school, and 14.1% (n = 65) reported completion of a trade, technical, or associates degree. Bachelor's degrees represented 29.1% (n = 285), and advanced degrees consisted of the largest population at 55.7% (n =545) of the participants in the investigation.

An area of interest pertaining to the desk-bound work and general culture of inactivity of employees defined in the literature review was the total number of hours of screen time per day (including computer, handheld devices, and television). Within the population of participants, 14.1% (n = 138) reported between 0-2 hours of screen time per day. Between 3-5 hours represented 27.8% (n = 272), 6-8 hours 30.2% (n = 295), and 9 or more hours of screen time consisted of 27.9% (n = 273), which defined the screen time for the remaining participants.

A significant area of comparison was the actual reported BMI and the reported perception of body composition by participants. Table 4 represents the perception of body composition and actual BMI for the categories of underweight, normal weight, overweight, obese, and extremely obese. Participants' perceptions of their body composition were higher for the categories of underweight, normal weight, and overweight than their actual reported BMI. From the total population, 41.1% (n = 402)

perceived themselves as normal weight when the actual percentage of participants for this BMI category was 33.7% (n = 330). Additionally, 46.5% (n = 455) reported they were overweight; the actual percentage of participants for this BMI category was 33.9% (n = 332).

Interestingly, within the obese and extremely obese categories the percentage of participants who reported in this category decreased. Participants' perceptions of obesity were reported at 9.5% (n = 93), while the actual percentage of participants for this BMI category was 26% (n = 254). Extremely obese participants represented 6% (n = 59), but only 2.4% (n = 23) of the population perceived they were actually in this BMI category.

Table 4

Reported Perceptions of BMI and Actual BMI Weight Status

	N (Perception)	Percent (Perception)	N (Actual)	Percent (Actual)
Underweight	5	.5	3	.3
Normal	402	41.1	330	33.7
Overweight	455	46.5	332	33.9
Obese	93	9.5	254	26.0
Extremely Obese	23	2.4	59	6.0
Total	978	100.0	978	100.0

The Indivisible Self: An Evidence Based Model of Wellness measures total wellness across five indivisible self factors (Myers & Sweeney, 2005a). The results of the inventory offer a total wellness score and individual scores for each of the second-order factors. The original 5F-Wel population used for norm reference consisted of N = 3,343 participants (Myers & Sweeney, 2005b). The AIKCU participants' (N = 978) mean scores on the inventory are represented in Table 5 and include a side-by-side comparison of the means of the two sample populations.

Table 5

Mean Values for Wellness (AIKCU vs. 5F-Wel)

	Mean: AIKCU	Mean: 5F-Well
Total Wellness	78.72	71.63
Creative Self	80.17	73.18
Coping Self	73.54	68.73
Social Self	88.12	77.35
Essential Self	82.36	73.38
Physical Self	72.35	66.56

Findings

In order to investigate the relationships between BMI and factors of wellness among full-time employees at private Kentucky colleges and universities, the researcher applied a process of regression analysis to discover whether BMI is a reliable predictor of total wellness. The researcher summarized specific areas of output data to answer the primary research questions. Output for the regression analysis was represented in a Pearson correlation, a Coefficient of Determination, and Coefficient Regression table for all factors of wellness. Each table identifies the relationships that exist between BMI and an individual's total wellness, including the five second-order factors of wellness.

The researcher first generated scatter plots to provide a visual representation of the strength of the association between the variables and to determine the normality, homoscedasticity, and linearity of each of the hypotheses (Appendix F). In relation to BMI, total wellness and the five second-order factors were normally distributed, and all combinations of independent and dependant variables were equal and expressed an inverse linear relationship. An inverse linear correlation indicates that an increase in one variable also means a decrease in the other (Jackson, 2009; Shavelson, 1996).

A Pearson correlation analysis determines whether all the independent variables are related to the dependant variables, while at the same time each of the independent variables are unrelated (Shavelson, 1996). Pyrczak (2006) states that a positive or negative Pearson correlation can be found, and the closer a value is to -1.00 or +1.00, the stronger the relationship between variables. The descriptive statistics and correlation between BMI and factors of total wellness are represented in Table 6.

Table 6

Pearson's Correlations for Total Wellness, Creative Self, Coping Self, Social Self, Essential Self, Physical Self and BMI

Statistic	Totwel	Create	Cope	Social	Essent	Phy	BMI
Correlation							
Total Wellness	1.000						
Creative Self	.826**	1.000					
Coping Self	.827**	.636**	1.000				
Social Self	.689**	.540**	.458**	1.000			
Essential Self	.617**	.375**	.288**	.424**	1.000		
Physical Self	.655**	.392**	.505**	.292**	.176**	1.000	
BMI	-.175**	-.066*	-.129**	-.082*	-.010	-.357**	1.000
Mean	78.7%	80.2%	73.5%	88.1%	82.4%	72.4%	28.3%
Standard Deviation	7.171	8.071	9.292	11.131	9.344	13.831	6.574

N = 978, *$\rho < .05$, **$\rho < .01$

An expected result from the Pearson correlation was the strong positive correlation between total wellness and the second-order factors of wellness. This finding reinforced the Indivisible Self's reliability and validity. Pearson correlation analysis revealed that, as BMI values increased, the factors of wellness decreased (Table 6). When considering Pearson *r* correlations for BMI, the strongest correlation was, noted between BMI and the Physical Self ($r = -.357$, $\rho < .01$); BMI and Total Wellness ($r = -.175$, $\rho < .01$); BMI and the Coping Self ($r = -.129$, $\rho < .01$); BMI and the Social Self ($r =$

-.082, $\rho < .05$); BMI and the Creative Self (r = -.066, $\rho < .05$); and BMI and the Essential Self (r = -.010), respectively.

The researcher also observed the coefficient of determination for BMI and each of the wellness factors to assess how well BMI predicts wellness. R-Square (R^2) was used to measure the proportion of the variance between BMI and each of the wellness factors and explains the overall strength of the association, allowing the researcher to determine the actual percentage of the variance (Shavelson, 1996). The higher the R^2, the stronger the prediction (Shavelson, 1996). The coefficient of determination analysis between BMI and the wellness factors is represented in Table 7.

Table 7

Coefficients of Determination for BMI and Factors of Wellness

Factors of Wellness	R	R Square	Adjusted R Square	Std. Error of the Estimate	Mean
Total Wellness	.175	.031	.030	7.065	78.724
Creative Self	.066	.004	.003	8.058	80.168
Coping Self	.129	.017	.016	9.220	73.542
Social Self	.082	.007	.006	11.100	88.119
Essential Self	.010	.000	-.001	9.349	82.355
Physical Self	.357	.128	.127	12.925	72.351

The R^2 for Physical Wellness based on BMI (.128) was the highest percentage of all factors, suggesting that BMI accounted for 12.8% of an individual's Physical Self. The R^2 for Total Wellness based on BMI (.031) suggested that BMI accounted for 3.1% of Total Wellness. The R^2 for the Coping Self based on BMI (.017) suggested 1.7%. The R^2 for the Social Self based on BMI (.007) suggested that BMI accounted for 0.7% of an individual's Social Self, and the R^2 for the Creative Self (.004) suggested that BMI

accounted for 0.4% of one's Creative Self. The R^2 for the Essential Self based on BMI (0.00) suggested that BMI accounted for 0.0% of Essential Self.

The final regression output data indicated the significance of the independent variable by reporting the beta values. According to Brace, Kemp, and Snelgar (2009), the higher the betas value, the greater the impact of the independent variable on the dependent variable. A large beta value for this model would indicate that a unit change in BMI has a large effect on a specified factor of wellness. The regression coefficient output is reported in Table 8.

Table 8

Regression Coefficient Output for BMI and Factors of Wellness

Factors of Wellness	*B*	*SE B*	*β*
Total Wellness	84.119	.999	
BMI	-.191	.034	-.175*
Creative Self	82.457	1.139	
BMI	-.081	.039	-.066
Coping Self	78.694	1.304	
BMI	-.182	.045	-.129*
Social Self	92.031	1.569	
BMI	-.138	.054	-.082
Essential Self	82.740	1.322	
BMI	-.014	.045	-.010
Physical Self	93.628	1.828	
BMI	-.752	.063	-.357*

N = 978, *$\rho < .01$

The regression coefficient output in Table 8 indicated beta values for Total Wellness (-.175), the Coping Self (-.129), and the Physical Self (-.357) were the strongest values for predicting BMI's influence on wellness. The observed ρ values for Total Wellness (.000), the Coping Self (.000), and the Physical Self (.000) were less than the alpha, where $\rho < .01$. The beta values for Creative Self (-.066) indicated no statistical

significance with BMI as a predicting variable, where ρ = .039. The beta values for Social Self (-.082) indicated no statistical significance with BMI as a predicting variable, where ρ = .011. The beta values for Essential Self (-.010) indicated no statistical significance with BMI as a predicting variable, where ρ = .765.

In Table 8 the coefficient regression output also included the data necessary to explain the best fitting line for each of the scatter plots associated with the wellness factors (Appendix F). The Physical Self slope (-0.752) and Y-intercept (93.628) values predict that, for every increase in BMI index, an expected -0.752 decrease is found in the Physical Self. The Total Wellness slope (-0.191) and Y-intercept (84.119) values predict that, for every increase in BMI index, an expected -0.191 decrease in Total Wellness is noted. The Coping Self slope (-0.182) and Y-intercept (78.694) values predict an expected -0.182 decrease in the Coping Self. The Social Self slope (-0.138) and Y-intercept (92.031) values predict an expected -0.138 decrease in the Social Self. The Creative Self slope (-0.081) and Y-intercept (82.457) values predict an expected -0.081 decrease in the Creative Self. The Essential Self slope (-0.014) and Y-intercept (82.740) values predict an expected -0.014 decrease in the Essential Self.

Conclusion

The researcher sought to determine whether or not BMI could be used as a predictor of total wellness and also as a predictor for the creative, physical, coping, social, and essential self. Chapter 4 data identified that relationships existed. The research model suggests that relationships exist among BMI and factors of wellness. Further discussion is necessary to establish the power and viability of these relationships.

Chapter 5 offers a discussion about the results and outlines the limitations, further recommendations, possible implications, and opportunities for future research.

CHAPTER 5: CONCLUSIONS AND IMPLICATIONS

This chapter highlights the analyses of the results, followed by a discussion of the conclusions drawn from the research. The results from this investigation will determine whether BMI can be useful as a predictor of wellness. Full-time employees at AIKCU institutions voluntarily participated in the study. The rationale for the investigation stemmed from researchers' observations of the levels of obesity and resulting wellness behaviors of individuals who are employed in higher education. The AIKCU population is representative of the national obesity epidemic. Evidence from the literature review shows that Americans suffer from the obesity epidemic in a variety of ways. Issues related to mental and physical wellness, childhood obesity, quality of life, work performance, associated medical costs, and other health-related diseases such as cancer are linked to obesity. Discovering the extent of the relationship BMI shares with wellness and the connection to one's quality of life was the basis for this investigation.

The literature documents that the United States is growing larger; and the population of overweight, obese, and extremely obese individuals is increasing. A recent study forecasting obesity trends found that 42% of Americans will be obese by 2030, costing more than $550 billion in associated health care (Finkelstein et al., 2012). In addition, the study estimated the breakdown to be a 33% increase in obesity prevalence, and an estimated 130% increase in severe obesity by 2030 (Finkelstein et al., 2012).

Americans are unhealthier and have placed themselves at more risk as a society because the quality of life for individuals has changed and now is measured differently due to the epidemic. Obesity has a direct impact on nearly every aspect of human life, making it critical to observe how the factors of wellness are associated. Healthy people

have more energy, are more motivated, and can lead without stress; they typically have little or no need for medical services and they typically live longer. Healthy individuals usually display balance in their life, are self-confident, and have strong self-esteem. These individuals usually have strong relationships; they value their work and are valued by their employers. People who exhibit healthy wellness characteristics know who they are and their importance within the context of their community.

The seminal work of Adler (1964), and the later work of Meyers and Sweeney (2005a), support the theory of the Indivisible Self, where a healthy person is made up of multiple wellness factors. The results of this study indicate that a relationship exists between BMI and factors of the Indivisible Self Theory of Wellness. The literature reveals that obesity influences multiple aspects of human life, including but not limited to the physical health of individuals. The multi-dimensional effect obesity has on overall wellness is witnessed in third-order wellness factors such as thinking, emotions, work, humor, exercise, nutrition, control, leisure, stress management, self worth, beliefs, friendship, love, spirituality, identity, and self-care (Myers & Sweeney, 2005a). These factors are the foundational components of the Myers and Sweeney (2005a) creative, physical, coping, social, and essential self used to measure and define total wellness within the study. The results indicate that it is reasonable to assume obesity may affect some, if not all, of these factors and, therefore, have a negative effect on overall wellness.

Discussion

The investigation proved that an inverse relationship was present between BMI and all factors of wellness. It was evident from the results that as BMI increased,

wellness factors decreased. The frequency with which this occurred was strong for some factors and weak for others, which leads to additional discussions.

The Pearson correlation between BMI and the Physical Self (r = -.357, ρ < .01) demonstrated the strongest relationship of all the factors in the study. Additionally, the R^2 suggested that BMI accounted for 12.8% of an individual's Physical Self. The third-order factors of exercise and nutrition may explain the significance of the relationship between BMI and the Physical Self, which is widely acknowledged and considered a vital part to health and wellness. Total Wellness and the Coping Self represent a set of factors that also add some context to the discussion. The Pearson correlation for BMI and Total Wellness (r = -.175, ρ < .01), and BMI and the Coping Self (r = -.129, ρ < .01), are not significantly strong but still demonstrate some relationship. The R^2 for BMI and the factors of Total Wellness and the Coping Self suggested that BMI accounted for 3.1% of Total Wellness and 1.7% of Coping Self. While this may be a relatively low percentage, it demonstrated their relevance as predictors of wellness.

The wellness factors of Social Self, Creative Self, and Essential Self demonstrated the least significant relationships with BMI; in some cases the relationship was almost non-existent. The Pearson correlations for the Social Self (r = -.082, ρ < .05), the Creative Self (r = -.066, ρ < .05), and the Essential Self (r = -.010) demonstrated no significant relationship among this population. Additionally, the R^2 values from the coefficients of determination confirmed that BMI and the Social Self (.007), Creative Self (.004), and Essential Self (0.00) share a very small relationship. These results suggested that BMI accounted for 0.7%, 0.4%, and 0.0%, respectively, of an individual's Social,

Creative, and Essential Self. These results offer no statistically significant relationship to justify that BMI can predict these factors of wellness.

The lack of consistency among the relationships between BMI and the Social, Creative, and Essential Self was confirmed by the statistical analysis. However, the results were not completely void of any relationship. The output data for the Physical Self, Total Wellness, and the Coping Self demonstrated a relationship with BMI. It is important to acknowledge that Total Wellness is the accumulation of all the second-order factors. The results indicated that a significant relationship already exists with some of the factors; therefore, the Myers and Sweeney Indivisible Self Theory (2005a) is substantiated under this model. The analysis of the research results indicated there is evidence for the theory that BMI can predict wellness.

The Physical Self is statistically significant because it specifically related to exercise and nutrition; there is causality between BMI and exercise and nutrition. As the nation's attention is focused on the Physical Self regarding obesity, we may have ignored its impact on the other second-order factors. The evidence from this study suggests the other wellness factors are maturing much slower than the increase in national BMI statistics. The results may suggest a slowly growing trend where obesity is influencing the factors of the Indivisible Self over time. While the statistical significance among the factors is relatively small, some practical significance can be gleaned from the research.

According to Kirk (1996), statistical significance is designed around whether a result is because of chance or sampling variability; he contends that a practical significance to the research results is often overlooked. Practical significance relates to the usefulness of the result in the real world (Kirk, 1996). The definition of practical

significance is relevant to the theory that BMI may be a predictor of total wellness. The strength of the statistical significance of the output data for factors of wellness was small in some cases, but it should not be considered unimportant. Their relevance describes a linear relationship between BMI and the Indivisible Self Theory. The practical significance between BMI and the Indivisible Self Theory is relevant for future predictive relationship models.

Another consideration in the national obesity epidemic and the Indivisible Self Theory may be in the perceptions held by participants. No one wants to admit they have succumbed to obesity, and the reported perceptions of participants validate this concept. The reported perception and actual BMI results for all participants are actually higher for the categories of underweight, normal weight, and overweight. In other words, participants self-reported more frequently their body mass to be in one of those three categories, when in reality the number of participants in those categories was much lower. For the categories of obese and extremely obese, participants' perceptions were distorted. Only 116 participants (N = 978) perceived they were actually obese or extremely obese, when in reality the BMI statistics revealed that 313 (N = 978) were clinically obese or extremely obese.

These results may be the new reality of wellness in America. Americans have not accepted or taken responsibility for their body composition and may be out of touch with their associated wellness factors. The wellness inventory measures perceptions; if people misperceive their body composition, it is plausible to believe they misperceive their wellness factors. The relevance of these findings may explain the small statistical effect sizes and explain the documented national decline in health, work performance, and other

related second-order factors. The practical significance of this study demonstrated that BMI can and does have relevance for predicting factors of wellness. Understanding the theory of the Indivisible Self supported this outcome and the need to understand the impact of obesity on overall wellness.

Conclusion

Over the last 30 years, Americans have changed their physical activity by engineering it out of their daily lives, which has created a new reality (HBO Documentary Films, 2012). The current reality is an American society where two-thirds of the population is obese. The United States is responsible for the obesity epidemic; we created the environment that causes obesity. Changing the current reality and redefining the future of wellness is necessary. The challenge will be in developing new habits, new attitudes, and a new reality. Education will be the key to identifying the wellness change to combat obesity, which will require leaders to articulate a clear message of wellness. This message must articulate a balanced approach to living a healthy life and return individuals to a quality of life filled with wellness.

In order to solve this epidemic and focus attention on human development, the message must be clear and consistent from all areas of leadership. Appley (1990) said that "human development is a result of solving problems" (p. 46), and that "the basic plan for civilization is human development" (p. 66). Appley (1990) added that:

> Positive thinking is the basis for positive action and the motivation for it, but the value of positive thinking must be implemented by the power of positive action. The synergistic effect of positive thinking and positive action results in the realization of full human potential; a high level of productivity. (p. 82)

To resolve the obesity epidemic requires leadership to initiate collective positive thinking and implement positive action. Every position in leadership must be committed to solving the obesity epidemic. The literature review illustrates that Americans have taken a step backward and are regressing in their wellness. If Appley (1990) is correct and the plan is human development, then we are failing to meet this objective. Consider that, in 2009-2010, 12.5 million children in the U.S. between the ages of 2-19 were obese (Ogden, Carrol, Kit, & Flegal, 2012). Children represent society's future leadership, yet the obesity epidemic is growing at alarming rates among this population. Collectively, Americans contribute to the lifestyle choices for children, impeding their ability to achieve their full development.

The collective intention of our country must be to help individuals realize their full human potential, which is more easily accessible when people are well. Obesity restricts total wellness and limits full human development. "Life is really hard for obese people and has both social and physical consequences, we do not have to accept this as reality, obesity is a preventable disease" (Dr. Jack Shonkoff, Harvard University, HBO Documentary Films, 2012).

Humans are made up of many parts that appear to be indivisible, sharing a symbiotic relationship. It is reasonable to assume from the literature and research that wellness factor levels interact. Creating a balance across the five factors of the Indivisible Self (Myers & Sweeney, 2005a) offers stability and wellness across life functions. A high BMI creates an imbalance in one or more of the factor levels, rendering individuals deficient over time. By definition, the Indivisible Self (Myers & Sweeney, 2005a) would then be consumed by these factors that affect BMI contributions

to the imbalance. The interdependent relationship between these factors contributes to overall wellness or the lack there of. There may be no perfect formula for complete wellness balance because other life realities affect individual wellness. BMI is a controllable human characteristic; obesity is a preventable condition and, therefore, one less stress on the factors of wellness, if addressed. A unified message must be communicated about the importance of wellness in order to eliminate obesity.

Important to the discussion of obesity and wellness is action. Action is necessary, but also action by leaders across the country is needed to examine and change the epidemic that is consuming the population. The decline in medical resources and the increase in need for medical attention because of obesity-related conditions is problematic; a demanding work climate offers little relief, and the contributing factors of inactivity and poor nutrition are driving down the wellness of Americans. There is an inevitable breaking point where emotions, health, the ability to love, spirituality, a sense of humor, work effectiveness, and sense of worth will be compromised by the epidemic. At this point, the obesity epidemic will have consumed our country and rendered society incapable of managing itself. Any study offering suggestions and changes that reverse the current trend in obesity statistics is worthwhile. The United States is on the precipice of a global epidemic; the power to reverse this problem, however, is available to leaders. Regaining the wellness of America is an achievable goal.

This study examined employee wellness at AIKCU institutions; each institution's relevance as a leading American college and university is significant to the impact on the obesity epidemic for explaining a larger societal contribution. In 2008 there were 19,574,395 students enrolled in U.S. colleges and universities, and 3,794,500 faculty,

staff, and administrators led them (U.S. Department of Education, National Center for Educational Statistics, 2010). Impacting the wellness of employees at institutions through a cultural shift in wellness can influence students. Leading by example can help to promote a healthier future for all by creating a new culture of wellness.

Genuine wellness initiatives for employees affect other associated obesity-related diseases and redefine wellness across each campus. The cumulative effect of this wellness leadership may change the national obesity epidemic by educating and leading students to adopt wellness lifestyles. Surrounding students in an atmosphere that supports wellness and fights obesity can significantly alter current attitudes and trends. This is accomplished only by the institution's leadership. The example for students must be the professors, support staff, and administrators, all of whom exemplify a wellness attitude. The outcome of wellness leadership is in the cultivation of individuals who become educators, businessmen, researchers, parents, community activists, and other associated leaders who are physically and mentally well and capable of emphasizing the benefits of wellness.

Limitations

The inventory was approved by the AIKCU administration and was then accepted for distribution by some of the school presidents. If accepted, the instructions required a contact person to be assigned as an access point for electronic distribution of the inventory. The communication of this process was completed via email, and respondents were not always timely, which affected the overall amount of time the inventory was accessible to employees.

Most of the colleges' human resources offices were assigned by presidents to help with the electronic distribution of the inventory. Anecdotally, many of the contact representatives stated that employees were inundated with surveys throughout the year. Campuswide surveys for activities, department assessments, committee assessments, professional association surveys, and other forms of electronic assessment have increased, according to many of the contacts, resulting in what some described as "survey fatigue." Because this study was a voluntary inventory, it may have been dismissed.

Email distribution of the inventory also may have presented a limitation to the study. The frequency of emails and the urgency of the content often contribute to the attention given to any email. The inventory was voluntary and required approximately 8-12 minutes to complete; in many cases, these types of email surveys are set aside and overlooked. The urgency of an inventory usually is given a low priority and may limit additional respondents.

The study was limited to small private Kentucky colleges and universities. This limitation may lead to bias based on geographic location and cultural issues. The perceptions of small college employees may differ greatly from those at larger institutions. The AIKCU population is distributed across urban, semi-urban, and rural populations, contributing to the limitations as well. Voluntary self-reporting of perceptions is problematic because it is dependent on the attitude of the participant at the time of the inventory and the critical attention given to each item.

The inventory was made available only to full-time faculty, staff, and administrators, limiting the study and excluding part-time employees. Many part-time employees do not have regular access to college- and university-supported computers, but

they represent a significant part of the potential population. This population also may represent a demographic that presents lifestyle variables that contribute to the overall wellness inventory.

Recommendations for Future Research

This study served to identify whether BMI could predict wellness; however, it may not be the best way to assess wellness. Accessing the available information to discover the factors that contribute to obesity may offer a clearer picture of how wellness is affected. The literature is clear that Americans live busy lifestyles that place a decreasing emphasis on physical activity and wellness. These busy lifestyle choices are void of any meaningful calorie-depleting activity. To complicate the matter, individuals have increased their consumption of processed foods that lack nutritional value. The formula is not a sustainable model for wellness. Future research should focus on the contributing factors of the busy lifestyle distractions and choices that eliminate opportunities for wellness.

While BMI is a measure of obesity, it alone is not the solution to the obesity epidemic. A more appropriate research study would examine the contributing factors behind increased BMI and measure wellness factors accordingly. Identifying a balanced wellness lifestyle that contributes to the decline in BMI indexes would be more purposeful for resolving the obesity epidemic. A longitudinal study designed to measure wellness history over a period of time would potentially offer researchers an accurate picture of the variables that impact lifestyle. Designed to specifically impact obesity and measure wellness, such a study could control lifestyle choices that have been identified as contributing factors. Measuring the physical and psychological wellness of participants

across the length of a study would offer valuable information for future wellness lifestyle considerations.

REFERENCES

Abrahams, S., & Balkin, R. S. (2006). Review of the five factors of wellness inventory (5FWEL). *NewNotes*, *46*, 2. Retrieved from http://www.theaaceonline.com/wel.pdf

Adler, A. (1964). *The individual psychology of Alfred Adler*. (Ed. by Ansbacher, H.L., & Ansbacher, R.R.). NewYork: Harper & Row.

Adler, A. (1998). *Understanding human nature*. Hazelden, Center City, Minnesota.

AIKCU (2010). *2010 Partners for the Commonwealth Annual Report*. Frankfort, Kentucky. www.aikcu.org

America's Health Rankings. (2010). *A call to action for individuals and their communities.* Retrieved from http://www.americashealthrankings.org/Rankings

American Public Health Association. (2009). *20-year analysis by America's Health Rankings, finds U.S. making successful strides in disease treatment but not prevention.* Retrieved from http://www.apha.org/about/news/pressreleases/2009/ahrrelease2009.htm

Appley, L. (1990). *The power of positive action*. Deerfield Beach, Florida: L and M Management.

Archer, J., Probert, B. S., & Gage, L. (1987). College students' attitudes toward wellness. *Journal of College Students Personnel*, *28*, 311-317.

Ardell, D. B. (2005). What is wellness? *Ardell Wellness Report*. 69th edition, Winter, p. 1.

Barkin, S. L., Heerman, W. J., Warren, M. D., & Rennhoff, C. (2010). Millennials and the world of work: The impact of obesity on health and productivity. *Journal of Business Psychology*, *25*, 239-245. doi: 10.1007/s10869-010-9166-5

Barlow, S. E., & Dietz, W. H. (1998). Obesity evaluation and treatment: Expert committee recommendations. *Pediatrics, 102*, 3. doi: 10.1542/peds.102.3e29

Belluck, P. (2005). Children's life expectancy being cut short by obesity. *The New York Times*. Retrieved from http://www.nytimes.com/2005/03/17/health/17obese.html

Bentley, D. P., Bigbee, A., & Cashwell, C. S. (2007). Spirituality and counselor wellness. *Journal of Humanistic Counseling, Education and Development, 46*, 66-81.

Bertera, R. L. (1990). The effects of workplace health promotions on absenteeism and employment costs in a large industrial population. *American Journal of Public Health*, *80*(9), 1101-1105.

Bibbins-Domingo, K., Coxson, P., Pletcher, M. J., Lightwood, J., & Goldman, L. (2007). Adolecent overweight and future adult coronary heart disease. *The New England Journal of Medicine*, *357*, 2371-9.

Bloom, S. (2008). How UPS improved productivity and reduced injuries. *Professional Safety*, *53*(8), 41-42.

Brace, N., Kemp. R., & Snelgar, R. (2009). *SPSS for psychologists.* Hampshire, England: Palgrave Macmillan.

Carmichael, C. (2007). *5 Essentials for a winning life: The nutrition, fitness, and life plan for discovering the champion within*. New York: Rodale Books.

Carmona, R. H. (2003). Testimony before the Subcommittee on Education Reform, Committee on Education and the Workforce, United States House of Representatives. Retrieved from http://www.hhs.gov/asl/testify/t030716.html

Centers for Disease Control and Prevention. (2007). *Calculating BMI using the English system.* Retrieved from http://www.cdc.gov/nccdphp/dnpa/growthcharts/training/modules/module1/text/page6benglish.htm

Centers for Disease Control and Prevention. (2010a). *Defining overweight and obesity.* Retrieved from http://www.cdc.gov/obesity/defining.html

Centers for Disease Control and Prevention. (2010b). *Chronic disease prevention and health promotion.* Retrieved from http://www.cdc.gov/chronicdisease/overview/index.htm

Centers for Disease Control and Prevention. (2011a). *Causes and consequences.* Retrieved from http://www.cdc.gov/obesity/causes/health.html

Centers for Disease Control and Prevention. (2011b). *Body mass index.* Retrieved from http://www.cdc.gov/healthyweight/assessing/bmi/index.html

Centers for Disease Control and Prevention. (2012a). *Adult and childhood obesity facts.* http://www.cdc.gov/obesity/data/facts.html

Centers for Disease Control and Prevention. (2012b). *Defining overweight and obesity.* Retrieved from http://www.cdc.gov/obesity/adult/defining.html

Centers for Disease Control and Prevention. (2012c). *Adult obesity facts.* Retrieved from http://www.cdc.gov/obesity/data/adult.html

Chapman, L. (2003). Meta-evaluation of worksite health promotion economic return studies. The *Art of Health Promotion Newsletter, 6*(6).

Cherry, H. H. (1926). *Education: The basis of democracy*. D. C. Heath and Company, USA.

Collins, J. (2004). Workplace wellness. *Business and Economic Review*, *51*, 3-7.

Collins, J., & Porras, J. I. (1994). *Built to last*. New York: Harper Collins.

Connolly, K. M., & Myers, J. E. (2003). Wellness and mattering: The role of holistic wellness. *Journal of College Students Personnel*, *28*, 311-317.

Cooper, K. H. (1970). Guidelines in the management of the exercising patient. *Journal of the American Medical Association*, *211*(10), 1663-1667.

Csiernik, R. (1995). Wellness, work and employee assistance programming. *Employee Assistance Quarterly*, *11*(12), 1-13.

Dunn, H. L. (1961). *High-Level wellness*. Arlington, VA: R. W. Beatty.

Els, D. A., & De La Rey, R. P. (2006). Developing a holistic wellness model. *Journal of Human Resources Manual*, *4*(2), 46-56.

Finkelstein, E. A., Khavjou, O. A., Thompson, H., Trogdon, J. G., Pan, L., Sherry, B., & Dietz, W. (2012). Obesity and severe obesity forecasts through 2030. *American Journal of Preventative Medicine*. *42*(6), 563-570.

Flegal, K. M., Carroll, M. D., Ogden, C. L., & Curtin, L. R. (2010). Prevalence and trends in obesity among US adults, 1999-2008. *The Journal of the American Medical Association*, *303*(3), 235-241. doi: 10.1001/jama.2009.2014

Fort Worth Business Press. (2006). How does work place wellness affect you? *Executive Health and Wellness Guide, 19*(5), 5-7.

Frankl, V. E. (1984). *Man's search for meaning.* New York: Washington Square Press.

Freedman, M. R., & Rubinstein, R. J. (2010). Obesity and food choices among faculty and staff at a large urban university. *Journal of American College Health*, *59*(3).

Galloway, D. (2001). *On-Purpose leadership*. Kansas City, MO: Beacon Hill Press.

Galper, D. I., Trivedi, M. H., Barlow, C. E., Dunn, A. L., & Kampert, J. B. (2006). Inverse association between physical inactivity and mental health in men and women. *Medicine and Science in Sports and Exercise*, *38*(1), 173-178. doi: 10.1249/01.mss.0000180883.32116.28

Gurchiek, K. (2008). Survey links wellness, job satisfaction. *HR Magazine, 53*(10), 26.

Hafen, B. Q., Frandsen. K. J., Karren, K. J., & Hooker, K. R. (1992). *The health effects of attitudes, emotions and relationships*. Provo, UT: EMS Associates.

Hattie, J. A., Myers, J. E., & Sweeney, T. J. (2004). A factor structure of wellness: Theory, assessment, analysis, and practice. *Journal of Counseling & Development, 82,* 354-364.

HBO Documentary Films. (2012). *The weight of the nation*. Retrieved from http://theweightofthenation.hbo.com/

Healey, B. J., & Marchese, M. (2005). The use of marketing tools to increase participation in worksite wellness programs. *Proceedings of the Academy of Health Care Management*, *2*(2), 1-6.

Hettler, W. (1976). Origin of the Hettler model of wellness. *Balance the six dimensions of your life.* Retrieved from http://www.hettler.com/

Hettler, W. (1984). Wellness: Encouraging a lifetime pursuit of excellence. *Health Values: Achieving High Level Wellness*, *8*(4), 13-17.

Hill, P. C., & Pargament, K. I. (2003). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *American Psychologist*, (*58*)1, 64-74.

Hirsch, A. (2006). *The forgotten ways*. Grand Rapids, MI: Brazos Press.

Hunnicutt, D. (2007). *The art of implementing a great worksite wellness program in a small business setting*. Wellness Councils of America. Retrieved from http://www.welcoa.org/freeresources/pdf/art_of_imp_10steps.pdf

International Association for the Study of Obesity. (2011). Retrieved from http://www.iaso.org/

Jackson, S. L. (2009). *Research methods and statistics*. Belmont, CA: Wadsworth.

Jonas, S. (2006). The wellness process for healthy living: A mental tool for facilitating progress through the stages of change. *American Medical Athletic Association*, *18*(2), 5-7.

Kentucky Institute of Medicine. (2007). The health of Kentucky: A county assessment. Retrieved from http://www.kyiom.org/pdf/healthy2007a.pdf

Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement, 56*(5),746-759.

Kotter, J. P. (1996). *Leading Change*. Boston, MA: Harvard Business School Press.

Kouzes, J. M., & Posner, B. Z. (2008). *The student leadership challenge*. San Francisco, CA: Jossey-Bass.

Ludwig, D. S. (2007). Childhood obesity – The shape of things to come. *The New England Journal of Medicine, 357*(23), 2325-2327.

Marks, J. S. (2003). *We're living longer, but what about our quality of life*? Chronic Diseases Notes and Reports: Centers for Disease Control and Prevention, *16*(1), 2.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*, 370. Retrieved from http://www.learning-theories.com/maslows-hierarchy-of needs.html

Mayo Foundation for Medical Education and Research. (2007). *Special report: Changing unhealthy habits.* Mayo Clinic Health Solutions. ISSN: 0741 – 6245, p.2.

Mensah, G. A. (2003). *Health related quality of life reveals full impact of chronic diseases*. Chronic Diseases Notes and Reports: Centers for Disease Control and Prevention, *16*(1), 3.

MedicineNet.com. (2011). Definition of body mass index. Retrieved from http://www.medterms.com/script/main/art.asp?articlekey=16125

Miller, G., & Foster, L. T. (2010). *Critical Synthesis of Wellness Literature. Retrieved from* http://www.geog.uvic.ca/wellness/critical_synthesis%20of%20wellness%20update.pdf

Minter, S. G. (1990). Health promotion: A progress report. *Occupational Hazards, 52*(4), 49-52.

Mosak, H. H., & Dreikurs, R. (1967). Spirituality: The fifth life task. *Journal of Individual Psychology*, *56*(3), 257-265.

Myers, J. E., Luecht, R. M., & Sweeney, T. J. (2004). The factor structure of wellness: Reexamining theoretical and empirical models underlying the wellness evaluation of lifestyle (WEL) and the five-factor Wel. *Measurement and Evaluation in Counseling and Development, 36, 194-208.*

Myers, J. E., & Sweeney, T. J. (2004). The indivisible self: An evidence-based model of wellness. *Journal of Individual Psychology, 60*(3), 234-245.

Myers, J. E., & Sweeney, T. J. (2005a). *Counseling for wellness: Theory, research, and practice*. Alexandria, VA: American Counseling Association.

Myers, J. E., & Sweeney, T. J (2005b). *The five factor wellness inventory.* Palo Alto, CA: Mindgarden, Inc.

Myers, J. E., & Sweeney, T. J. (2007). Wellness in counseling: An overview. American Counseling Association Professional Counseling Digest. Alexandria, VA: American Counseling Association.

Myers, J. E., Sweeney, T. J., & Witmer, J. M. (1998). *The Wellness Evaluation of Lifestyle.* Greensboro, NC: Authors.

Myers, J. E., Sweeney, T. J., & Witmer, J. M. (2000). The wheel of wellness counseling for wellness: A holistic model for treatment planning. *Journal of Counseling and Development*, *78*, 251-266.

National Heart Lung and Blood Institute. (2012). Calculate body mass index. Retrieved from http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/healthy-weight-basics/body-mass-index.htm

National Institutes of Health. (1998). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults – The evidence report.* Retrieved from http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf

National Institutes of Health. (2000). *The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults.* Retrieved from http://www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf

National Institutes of Health. (2012). Retrieved from http://www.nih.gov/

National Wellness Institute. (1976). *The six dimensions of wellness model.* Retrieved from http://www.nationalwellness.org/pdf/SixDimensionsFactSheet.pdf

Nestle, M., & Jacobson, M. (2000). Halting the obesity epidemic: A public health policy approach. *Public Health Reports*, January/February, (115).

Obesity Action Coalition. (2011). Retrieved from http://www.obesityaction.org/home/index.php

Oeland, A., Laessoe, U., Olesen, A. V., & Jorgensen, P. M. (2010). Impact of exercise on patients with depression and anxiety. *Nordic Journal of Psychiatry*, *64*, 210-217. DOI: 10.3109/08039480903511373.

Ogden, C., & Carroll, M. (2010). Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008. *Division of Health and Nutrition Examination Surveys*.

Ogden, C. L., Carrol, M. D., Kit, B. K., & Flegal. K. M. (2012). *Prevalence of obesity In the United States, 2009-2010. NCHS Data Brief*, No. 82. Hyattsville, MD: National Center for Health Statistics.

Olshansky, S. J., Passaro, D. J., Hershow, R. C., Layden, J., Carnes, B. A., Brody, J.,...& Ludwig, D. S. (2005). A potential decline in life expectancy in the United States in the 21st century. *The New England Journal of Medicine*, *352*, 1138-1145.

Parker-Pope, T. (2011). Less active at work, Americans have packed on pounds. *The New York Times*. Retrieved from http://well.blogs.nytimes.com/2011/05/25/less-active-at-work-Americans-have-packed-on-pounds

Psychology Today. (2012). Self-esteem. Retrieved from http://www.psychologytoday.com/basics/selfesteem

Purdy, M., & Dupey, P. (2005). Holistic flow model of spiritual wellness. *Counseling and Values, 49*(2), 95-106.

Pyrczak, F. (2006). *Making sense of statistics*. Glendale, CA: Pyrczak Publishing.

Ramey, L., & Leibert, T. (2011). *How well are students of wellness?* Retrieved from http://counselingoutfitters.com/vistas/vistas11/Article_42.pdf

Rooney, M. (2011). *How will you leave your mark?* October 25. Retrieved from http://www.trainingforwarriors.com/category/articles/page/2/

Schlossberg, N. K. (1997). A model of worklife transitions. In R. Feller & G. Waltz (Eds.), *Career transitions in turbulent times: Exploring work, learning and careers*, (pp.93-103). Greensboro, NC:ERIC Clearinghouse on Counseling and Student Services.

Shavelson, R. J. (1996). *Statistical reasoning for the behavioral sciences.* Needlham Heights, MA: Allyn and Bacon.

Slavin, R. E. (2007). *Educational research in an age of accountability.* Boston, MA: Pearson Education.

Snyder, C. R., & Lopez, S. J. (2002). *Handbook of positive psychology*. New York: Oxford University Press.

Stanley, E. (1873). *The conduct of life*. Retrieved from http://thinkexist.com/quotation/those_who_think_they_have_no_time_for_bodily/194816.html

Sweeney, T, J. (1998). *Adlerian counseling: A practitioners approach (4th ed.)*. Philadelphia: Accelerated Development.

Sweeney, T. J., & Witmer, J. M. (1991). Beyond social interest: Striving toward optimal health and wellness. *Individual Psychology*, *47*, 527-540.

U.S. Department of Education, National Center for Educational Statistics. (2010). Retrieved from http://nces.ed.gov/programs/digest/d10/tables/dt10_195.asp.

Witmer, J. M., & Sweeney, T. J. (1992). A holistic model for wellness and prevention over the lifespan. *Journal of Counseling and Development*, *71*, 140-148.

Witmer, J. M., Sweeney, T. J., & Myers, J. E. (1998). *The wheel of wellness*. Greensboro, NC: Authors.

Woodward, D. B., & Komives, S. R. (2003). Shaping the future. *Student Services: A handbook for the profession*. San Francisco: Jossey-Bass.

World Health Organization. (2005). *Constitution of the World Health Organization*. Retrieved from http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf

Wyatt, S. B., Winters, K. P., & Dubbert, P. M. (2006). Overweight and obesity: Prevalence, consequences, and causes of a growing public health problem. *The American Journal of the Medical Sciences*, *331*(4), 166-174.

APPENDIX A: Institutional Review Board Approval

A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH
OFFICE OF COMPLIANCE

DATE:	March 8, 2012
TO:	Christopher Schmidt, EdD
FROM:	Western Kentucky University (WKU) IRB
PROJECT TITLE:	[313370-2] An Investigation Of Relationships Between Body Mass Index And Factors Of Wellness Among Full-time Employees At Private Kentucky Colleges and Universities
REFERENCE #:	IRB12-219
SUBMISSION TYPE:	Revision
ACTION:	APPROVED
APPROVAL DATE:	March 8, 2012
EXPIRATION DATE:	March 30, 2012
REVIEW TYPE:	Expedited Review

Thank you for your submission of Revision materials for this project. The Western Kentucky University (WKU) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by an *implied* consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of March 30, 2012.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Paul Mooney at (270) 745-2129 or paul.mooney@wku.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Western Kentucky University (WKU) IRB's records.

APPENDIX B: Aikcu Support Letter

AIKCU

Association of Independent Kentucky Colleges & Universities
484 Chenault Road, Frankfort, Kentucky 40601
V 502-695-5007 F 502-695-5057
www.aikcu.org

March 7, 2012

Dear Presidents,

President Cox is out of the office dealing with the General Assembly this week and asked me to write you to solicit your support for the doctoral research project of Chris Schmidt, Lindsey Wilson College's Dean of Students. AIKCU is pleased to support Chris's doctoral research into employee wellness at AIKCU member institutions. He has developed an anonymous employee wellness survey that he is requesting your HR departments circulate to your employees.

We all can agree that the health and wellness of your more than 6,000 combined faculty and staff are a major concern, as they are the lifeblood of your institutions. We also all realize that it is not sustainable to simply pass along increasing healthcare costs to students and families in the form of higher tuition. Many of you have already implemented wellness programs to encourage healthy lifestyles among your employees. One of AIKCU's most successful programs has been the AIKCU Benefit Trust, our self-funded employee health insurance program that we offer to all 20 of our member institutions (about half of you participate).

We value Chris's leadership at Lindsey Wilson College and to the broader AIKCU community through his participation in our Deans of Students group. We hope his work will benefit the entire association by helping us better understand the wellness issues facing your employees and ultimately lead to the enhancement of our collaborative efforts to continue to hold down costs while building human capital.

AIKCU supports Chris Schmidt's dissertation research and we hope you will encourage your employees to participate in his survey.

Sincerely,

Mason Dyer
VP for External Relations & Information

Alice Lloyd College
Asbury University
Bellarmine University
Berea College
Brescia University
Campbellsville University
Centre College
Georgetown College
Kentucky Christian University
Kentucky Wesleyan College
Lindsey Wilson College
Mid-Continent University
Midway College
Saint Catharine College
Spalding University
Thomas More College
Transylvania University
Union College
University of the Cumberlands
University of Pikeville

APPENDIX C: Informed Consent

Informed Consent and Directions for Completion of 5F-Wel Inventory.

Dear Participant,

You are being asked to participate in An Investigation of Relationships between Body Mass Index and Factors of Wellness among Full-time Employees at Private Kentucky Colleges and Universities survey. The survey is part of a doctoral dissertation. All full time employees at Association of Independent Kentucky Colleges and Universities (AIKCU) are asked to voluntarily participate. This important survey is available online starting Monday, March 12, 2012 and will end on Friday, March 30, 2012.

Participation in this survey is anonymous. The survey will take approximately 10-20 minutes to complete. The survey was reviewed by the Western Kentucky University Institutional Research Board (IRB) and is approved for use. Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

The following link will take you directly to the survey so that you may begin. Following the link constitutes your implied consent to complete the survey:

5F-Wel inventory link:

Your responses are protected and are anonymous. Questions regarding this study may be directed to the principle investigator, Chris Schmidt, Doctoral Candidate, Western Kentucky University at 270-250-1805. Your contribution and support is appreciated.

THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-6733

WKU IRB# 12-219
Approval - 3/8/2012
End Date - 3/30/2012
Expedited
Original - 3/8/2012

APPENDIX D: Letter Of Support And Directions

LINDSEY WILSON COLLEGE

March 7, 2012

President [redacted]

[redacted]

Dear President [redacted]

I am a doctoral student at Western Kentucky University, and I am asking for permission to contact the full-time employees at your institution to take part in an online survey. The title of my dissertation is An Investigation Of Relationships Between Body Mass Index And Factors Of Wellness Among Full-time Employees At Private Kentucky Colleges And Universities. I am hopeful, that upon completion, my research will provide valuable data concerning employee wellness at AIKCU institutions. All participating employees will receive the one-time inventory via email which will provide a link that directs them to a secure off-site data research center. Data gleaned from the survey will remain anonymous.

If you choose for your institution to participate, please reply with the contact information of the individual that will help facilitate the inventory on your campus. All contributing institutions will receive a copy of the dissertation. If you have any questions, please contact me at (270) 250-1805 or schmidtc@lindsey.edu. Thank you in advance for your support.

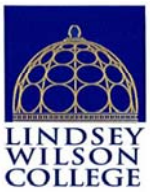
Sincerely,

Chris Schmidt
Dean of Student

CS/ns

210 Lindsey Wilson Street
Columbia, Kentucky 42728
Office: 270-384-2126 Fax: 270-384-8200
www.lindsey.edu

APPENDIX E: Cover Letter To AIKCU Presidents



March 7, 2012

Dear [redacted],

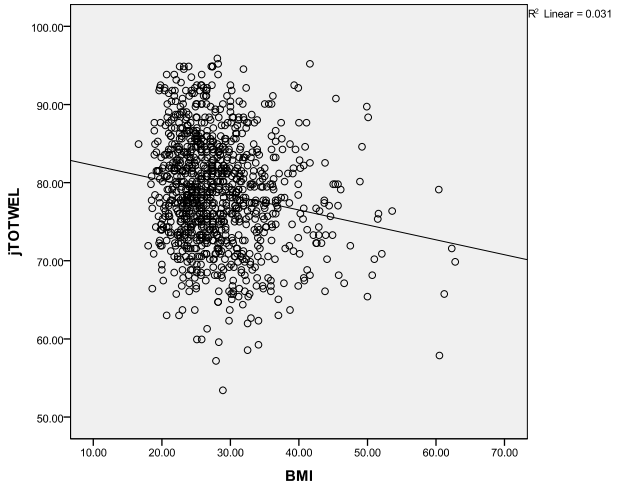
Developing the leadership within our organizations is critical to the continued growth of the institutions we lead. I am seeking your support and cooperation for Chris Schmidt, the Dean of Students at Lindsey Wilson College. Chris is completing his doctoral studies at Western Kentucky University and the focus of his dissertation is employee wellness. I am asking you to support his research by allowing the full-time employees at your respective institutions to participate in an online survey related to employee wellness. Our institution's employees are our greatest assets and I know each of us is concerned with their health and welfare along with the rising cost of health insurance, sick days and medical premium costs. I believe the data gleaned from Chris' study will be valuable to all AIKCU members.

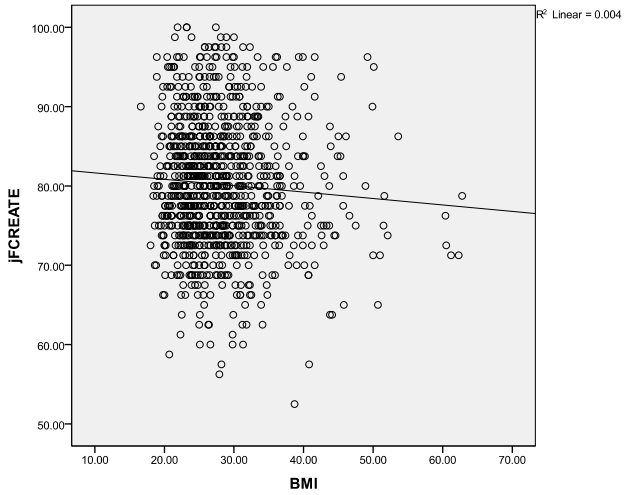
Attached is a letter from Chris that outlines a simple request of support and directions. I want to thank you in advance for your consideration in helping Chris with his dissertation research. Please contact me if you have questions or need additional information.

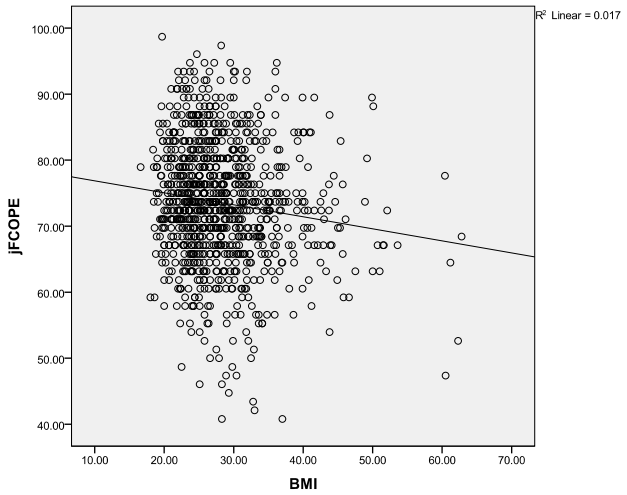
Sincerely,

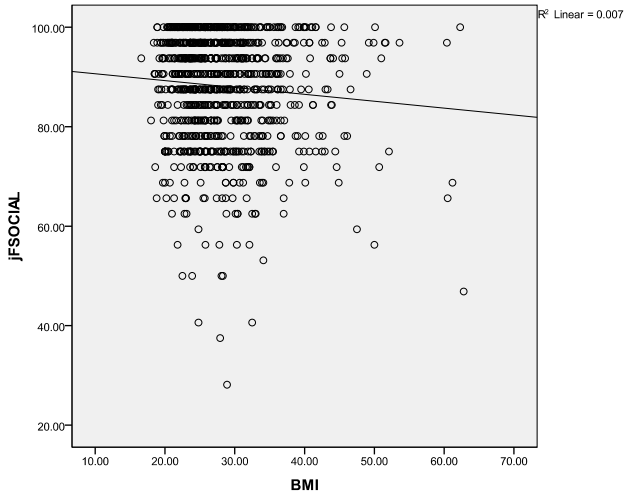
Dr. William T. Luckey, Jr.
President
Lindsey Wilson College

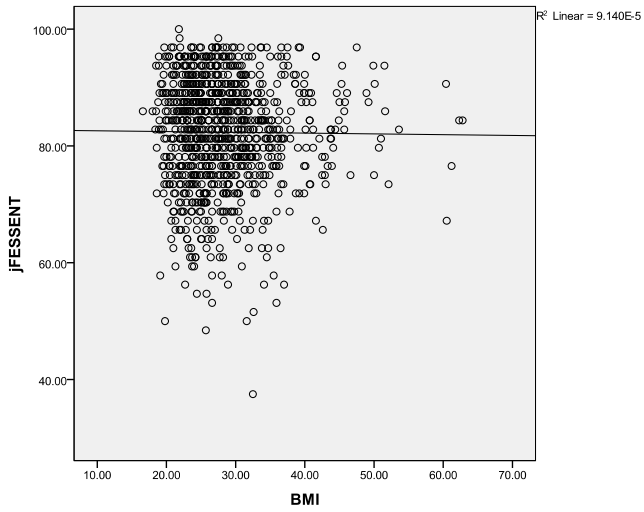
APPENDIX F: Scatter Plots For BMI And Factors Of Wellness

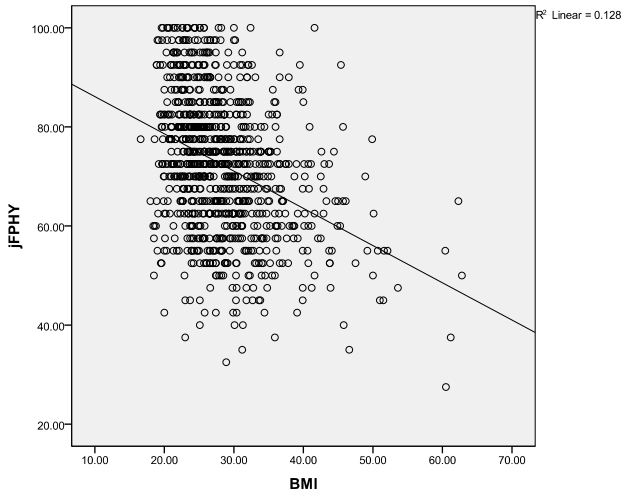







R² Linear = 0.007
jFSOCIAL
100.00
80.00
60.00
40.00
20.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
BMI


R² Linear = 9.140E-5
jFESSENT
100.00
80.00
60.00
40.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
BMI


R² Linear = 0.128
jFPHY
100.00
80.00
60.00
40.00
20.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
BMI