

UTILIZATION FOCUSED PUBLIC HEALTH EVALUATION OF A HEALTH AND  
WELLNESS INTERVENTION FOR COLLEGE FRESHMEN

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## ABSTRACT

TITLE: Utilization Focused Public Health Evaluation of a Health and Wellness Intervention for College Freshmen

The transition from high school to college is a significant experience for many young adults which can potentially impact their fitness and wellness patterns. The purpose of this investigation was to quantify the efficacy of *Foundations of Fitness and Wellness (P105)* on the health and wellness behaviors of college freshmen. METHODS: A mixed-methods design was implemented to determine the overall effectiveness of the P105 course on improving the health behaviors of college freshmen residing within the Briscoe Fitness and Wellness Living-Learning Center (BFWLLC). A health behavior survey quantifiably examined students' general health, alcohol use/binge drinking, physical activity, condom use, and perceived stress. A qualitative survey was introduced at the end of the semester to determine the most useful health topics acquired as a result of taking the P105 course. Data was collected on subjects (n=155) at the beginning of the intervention (pre-test) and again at the conclusion of the intervention (post-test). The non-parametric statistical Friedman's test was used to determine differences in ordinal data from pre- to post-tests. Repeated Measures Analysis of Variance (ANOVA) was used to detect differences in interval data from pre- to post-test. RESULTS: Results for self-reported general health, binge drinking, and resistance exercise showed significant positive differences from pre- to post-test ( $p < 0.05$ ). Results for number of drinks consumed, moderate-intensity physical activity, and perceived stress revealed significant negative differences from pre- to post-test ( $p < 0.05$ ). CONCLUSIONS: Findings from this pilot study suggest improvements in health behaviors can be accomplished through an academic course comprised of health education and physical activity components offered within a residence hall. However, confounding factors (i.e. transitional time period, dormitory environment, and academic rigor) may have compromised the

overall effectiveness of the course as revealed by the observed significant increase in the number of drinks consumed while socializing, decrease in self-reported moderate intensity physical activity, and increase in perceived stress. Future randomized controlled trials are needed to elucidate the impact of a combined health education and physical activity course on global health and wellness behaviors.

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## CHAPTER 1

### INTRODUCTION

According to the United States Department of Education, there are over 4,000 colleges and universities in the US totaling over 18 million students (United States Department of Education [USDE], 2009). On Indiana University Bloomington's campus, there are 30,983 full time undergraduate students. Freshmen account for 7,917 of those students while approximately 255 of those freshmen reside in the Briscoe Fitness and Wellness Living-Learning Center (Official Enrollment Report, 2009-2010).

Living-learning centers (LLCs) were developed to encourage and promote student learning within residential hall communities. LLCs are defined as certain floors or sections of university residence halls where students with common interests live together. Each community has a particular theme and its residents have the opportunity to participate in various educational, social, and cultural activities (Roy, 2005). Research demonstrates that students who live in LLCs perform better in the classroom, have higher graduation rates, report more academic and educational opportunities, and experience a greater sense of belonging (Stassen, 2003).

There are eight LLCs offered on Indiana University-Bloomington's campus, including the Briscoe Fitness and Wellness Living-Learning Center (BFWLLC). The BFWLLC was created in 1993 to focus on the six dimensions of wellness: emotional, environmental, intellectual, physical, social, and spiritual. The BFWLLC is representative of an ecological model because it includes an on-site fitness facility, a required health education course, and an overall wellness theme promoted by Residential Programs and Services (RPS).

Public health officials have begun to implement ecological approaches to examine the contributing factors that influence healthy lifestyle behaviors (Sallis, Cervero, Ascher,

Henderson, Kraft, & Kerr, 2006). Many health educators believe that healthy behaviors are the result of interactions between individuals and the social and physical environments. There is evidence that indicates that reductions in physical activity and increases in weight that occur during a student's college tenure may be related to social and physical environmental factors (Sallis et al, 2006). The identification of targeted interventions and prevention strategies may lead to an enhanced understanding of wellness courses and other types of ecological approaches that could be available to college students on a national level (Wallace, Buckworth, Kerby, & Sherman, 2000).

Foundations of Fitness and Wellness (P105) is an introductory wellness course offered by the School of Health, Physical Education, and Recreation (HPER). The P105 course is required for all BFWLLC residents in conjunction with the wellness goals of the community. Initially, P105 began as an eight weeks course instructed by peer educators living within the community. It has since evolved into a semester long course instructed by peer educators and graduate students from the Departments of Applied Health Science and/or Kinesiology. The traditional course consisted of a lecture only format concentrating on health education. The course now includes both a lecture and lab component that strives to promote wellness through content based health curriculum and physical activity instruction. The premise behind the evolution of P105 stemmed from the reported percentage of either overweight (67%) or obese (34%) adults in the US (National Center for Health Statistics, 2005-2006) and the percentage of those not meeting the current recommendations for physical activity (60%) (CDC, 2009). Furthermore, a recent report from the American College Health Association (ACHA) reported that 36.7% of college students are overweight or obese based on self-reported height and weight values (Wengreen & Moncur, 2009). Health educators have begun making strides towards promoting wellness and

physical activity as a means to improve the quality of life and overall well-being of college students.

For this study, a representative committee was formed with HPER faculty members from the Departments of Applied Health Science and Kinesiology to realign the course to effectively address student health needs. The advisory board worked together to create course goals and student learning objectives in order to evaluate the course's overall effectiveness. The course content and the methods of delivery were aligned with the learning objectives in order to improve the evaluation process. The course learning objectives included: (1) integrating physical activity into daily living; (2) planning and maintaining a personal fitness program; (3) building and enhancing social relationships; (4) assessing personal health behaviors (i.e. fitness, alcohol, nutrition, stress); (5) minimizing unnecessary risks (i.e. binge drinking, eating disorders, unprotected sex); and (6) managing the negative effects of stress. The P105 course aimed to provide health education in the classroom setting while promoting physical activity in the Briscoe fitness facility.

#### **Statement of Problem**

Wellness courses combining both health education and physical activity components are underrepresented in the literature. Thus, there is a clear need to investigate the efficacy of the Foundations of Fitness and Wellness (P105) course on the health and wellness behaviors of college freshmen.

#### **Purpose of the Study**

Evaluate the effectiveness of a unique approach within an academic course, Foundations of Fitness and Wellness (P105), on the health and wellness behaviors of college freshmen living within the Briscoe Fitness and Wellness Living-Learning Center.

### **Need for the Study**

The impact of wellness courses on the health behaviors and physical activity patterns of college students has not been thoroughly investigated and is understudied in the literature. Typically, there are two strategies utilized by public health educators for increasing physical activity patterns among the general population. These interventions include: (1) changing the surrounding physical environment to integrate physical activity into daily living by mixing the use of residential with commercial or occupational environments; and (2) providing complimentary sophisticated services, such as: free health appraisals, fitness assessments, individualized exercise prescriptions, or supervision via the internet as an amenity of the surrounding environment (Keating, Guan, Pinero, & Bridges, 2005). These traditional approaches have been unsuccessful because they fail to address college students' physical activity patterns (Keating et al., 2005). Hence, it is critical to implement interventions targeted towards college students to increase physical activity levels in college and beyond.

The health and wellness behaviors of college students, particularly college freshmen, decline swiftly upon graduation from high school (Bray, 2004). Adolescents (ages 15-19) and young adults (ages 20-25 years) become increasingly less active as grade in school increases (Gyurcski, Spink, Bray, Chad, & Kwan, 2006). The most recent Centers for Disease Control (CDC) National College Risk Behavior Survey found that college students are failing to practice simple health and wellness behaviors (Hey, Calderon, & Carroll, 2006). Currently, college students are failing to exercise regularly, eat according to the recommended nutritional guidelines, and protect themselves from unnecessary risks (i.e. binge drinking, unprotected sex, recreational drug use) (Hey et al, 2006). Thus, students transitioning from high school to college are an ideal population to target since they are establishing new lifestyle behaviors.

For this study, a utilization focused evaluation was implemented to determine the effects of the P105 course on students' health behaviors. A utilization focused evaluation begins with the idea that evaluations should be judged by their utility and actual use; therefore, evaluators should facilitate the evaluation process and design any evaluation with careful consideration of how everything that is done, from beginning to end, will affect overall use (Patton, 2008). Further, utilization focused evaluations emphasize how real people in the real world will apply the findings and experience the evaluation process. A utilization focused evaluation answers the question of whose values will frame the evaluation by working with clearly identified, primary intended users who have responsibility to apply the evaluation findings and implement future recommendations (Patton, 2008). Thus, the overall purpose of this study is to utilize the results in order to determine the effectiveness of the P105 course and develop recommendations for future research. These recommendations could be employed by the P105 course coordinator, HPER faculty, and RPS staff to improve the course content, enhance the methods of delivery, and increase the evaluation process. This research will also aim to further the body of knowledge relating to health interventions designed to improve the health and wellness behaviors of college students.

### **Assumptions**

The study was based on the following assumptions:

1. The subjects answered questions on the American College Health Association – National College Health Assessment II to the best of their abilities.
2. The subjects complied with the assessment instructions and followed directions while completing the survey.
3. The subjects truthfully marked their responses while completing the survey.

### **Delimitations**

1. Approximately 155 subjects between the ages of 18-19 years.
2. Subjects were identified as college freshmen.
3. All subjects resided in the same residence hall.
4. Subjects were residents of the BFWLLC and had access to an on-site fitness facility.
5. Changes in health and wellness behaviors may have been due to participation in the course and not directly related to the course.

### **Limitations**

1. There was no control group in the study.
2. Data cannot be generalized to all freshmen with similar characteristics.
3. The sample size included a predominately Caucasian population.
4. The complete survey was not approved by the IRB, and therefore, the survey was modified to cover specific content areas taught within the P105 course.

### **Research Hypotheses:**

The study was designed to test the following hypotheses:

H<sub>1</sub>: Participation in P105 will significantly increase students' self-reported general health descriptions.

H<sub>2</sub>: Participation in P105 will significantly decrease students' self-reported levels of alcohol consumption associated with binge drinking.

H<sub>3</sub>: Participation in P105 will significantly increase students' self-reported condom use as a protective mechanism.

H<sub>4</sub>: Participation in P105 will significantly increase students' self-reported levels of physical activity.

H<sub>5</sub>: Participation in P105 will significantly decrease students' self-reported stress levels.

### ***Qualitative Survey***

Semester-end qualitative surveys will allow feedback pertaining to the students' perceptions of important health concepts acquired as a result of taking P105.

### **Definition of Terms**

**Binge Drinking:** Drinking 5 or more drinks during a single occasion for men or 4 or more drinks during a single occasion for women (Centers for Disease Control [CDC], 2009).

**Body Composition:** A health-related component of physical fitness that relates to the relative amounts of muscle, fat, bone, and other vital parts of the body (Caspersen, Powell, & Christenson, 1985).

**Body Mass Index:** (BMI) is calculated from a person's weight and height. BMI provides a reliable indicator of percent fat for most people and is used to screen for weight categories that may lead to health problems (CDC, 2009).

**Contraception:** Birth control methods implemented to prevent unintended pregnancy (CDC, 2009).

**Ecological Model:** In public health, ecological models refer to people's interactions with their physical and social surroundings; ecological models are distinguished by their explicit inclusion of environmental and social variables that are expected to influence health behavior (Sallis, Cervero, Ascher, Henderson, Kraft, & Kerr, 2006).

**Excessive Drinking:** Consuming more than two drinks per day on average for men or more than one drink per day on average for women (CDC, 2009).

**Exercise:** An activity that is planned, structured, and involves repetitive bodily movements done to improve or maintain one or more components of physical fitness (Caspersen et al., 1985).

**Health:** A human condition with physical, social, and psychological dimensions, each characterized on a continuum, and including positive and negative values (United States Department of Health and Human Services [USDHHS], 1996).



Healthy Campus 2010: A set of national health objectives used by colleges and universities to set goals for improving college students' health (American College Health Association [ACHA], 2007).

Healthy People 2010: A statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats ([www.HealthyPeople.gov](http://www.HealthyPeople.gov)).

Hypokinetic Diseases: Diseases associated with physical inactivity (i.e. heart disease, obesity, diabetes, hypertension, etc) (CDC, 2009).

Leisure - Time Physical Activity: Broad descriptor of activities one participates in during free time based on personal interests and needs (Corbin, 2006).

Moderate-Intensity Physical Activity: Refers to any activity resulting in an energy expenditure of 3.5 to 7 calories per minutes ( $\text{kcal}\cdot\text{min}^{-1}$ ) (Ainsworth, Haskell, Whitt, Irwin, Swartz, & Strath, 2000).

Obesity: An adult with a BMI of 30 or higher is considered obese (CDC, 2009).

Overweight: An adult with a BMI between 25 and 29.9 is considered overweight (CDC, 2009).

Physical Activity: Bodily movement produced by the contraction of skeletal muscles resulting in energy expenditure above a basal level (Caspersen et al., 1985).

Physical Fitness: A set of attributes that people have or achieve that relates to the ability to perform physical activity (USDHHS, 1996; Caspersen et al., 1985).

Regular Physical Activity: A pattern of physical activity is regular if it is of moderate intensity and performed for an accumulated 30 minutes on most, preferably all days of the week. In addition, a pattern of physical activity is regular if it is of vigorous-intensity and performed for

20 minutes at least 3 days per week. (American College Sports Medicine [ACSM], 2006; USDHHS, 1996).

Quality of Life: An individual perception that their needs are being satisfied and that they are not being denied opportunities to achieve happiness and fulfillment (Brown, Thomas, & Kotecki, 2002).

Risk Factor: A variable associated with an increased risk of disease or infection (American Heart Association, 2007).

Self-Efficacy: The degree of confidence an individual possesses in his/her ability to perform a designated behavior (Sallis, Haskell, Fortmann, Vranizan, Taylor, & Solomon, 1986).

Stress: A nonspecific response of the body to a demand made upon it (Seyle, 1974).

Sexual Health: A state of physical, emotional, mental, and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction, or infirmity (CDC, 2009).

Vigorous-Intensity Physical Activity: Represents a level of effort in which a person should experience: increase in breathing or heart rate; execute effort of greater than 6 MET; expend more than  $7 \text{ kcal}\cdot\text{min}^{-1}$  (USDHHS, 1996)

Wellness: A dimension of health beyond the absence of disease or infirmity including spiritual, emotional, social, intellectual, environmental, and physical components (Corbin, 2006).

## CHAPTER 2

### REVIEW OF LITERATURE

For organizational purposes, the literature is presented under the following topics: (a) General Health and Physical Activity; (b) Risky Health Behaviors; (c) Healthy People 2010; (d) Transitioning to College; (e) Past and Current Health Interventions for College Students; (f) American College Health Association-National College Health Assessment; and (g) Summary.

#### **General Health and Physical Activity**

In 1995, the Centers for Disease Control and Prevention (CDC) and the American College of Sports Medicine (ACSM) published physical activity recommendations for public health promotion (US Department of Health and Human Services [USDHHS], 2008). This report stated that adults should accumulate at least 30 minutes of moderate-intensity physical activity on most, preferably all, days per week. In 1996, *Physical Activity and Health: A Report of the Surgeon General* supported this same recommendation (USDHHS, 2008). This report emphasized the importance of regular physical activity with respect to overall health and well-being. It also indicated that a moderate amount of regular physical activity significantly reduces an individual's risk for cardiovascular disease (the nation's leading cause of death), stroke, diabetes, hypertension, and some forms of cancer (Warburton, Cledhill, & Quinney, 2001).

The USDHHS's *Physical Activity Guidelines for Americans* affirms the current CDC/ACSM recommendations. For substantial health benefits, the *2008 Guidelines* recommend at least 150 minutes of moderate-intensity physical activity, 75 minutes of vigorous-intensity physical activity a week, or an equivalent combination of moderate- and vigorous- intensity physical activity (USDHHS, 2009). Furthermore, the new *2008 Guidelines* also recommend that a person can accumulate 150 minutes a week of physical activity in non-continuous bouts (ten

minute episodes) while receiving the same health benefits (USDHHS, 2008). According to Ainsworth, Haskell, Whitt, Irwin, Swartz, & Strath (2000), moderate-intensity physical activity refers to any activity that expends 3.5 to 7 kcal·min<sup>-1</sup>; this is equivalent to the effort a healthy individual might expend while walking briskly. Vigorous-intensity physical activity refers to any activity that expends 7 or more kcal·min<sup>-1</sup>; this is equivalent to the effort a healthy individual might expend while jogging, swimming, or bicycling uphill (Ainsworth et al., 2000). Many health professionals recommend a minimum energy expenditure of 1000 kcal per week while acknowledging the additive benefits of higher levels of energy expenditure; expending 1000 kcal per week is equivalent to 1 hour of moderate walking 5 days per week (Warburton, Nicol, & Bredin, 2006). The American College of Sports Medicine (2006) also confirms that health benefits can occur with an energy expenditure as low as 700 kcal per week with additive benefits at higher levels of energy expenditure.

Disease outcomes impacted by regular physical activity participation include: hypertension, cardiovascular disease, thromboembolic stroke, type-2 diabetes mellitus, osteoporosis, obesity, colon cancer, breast cancer, anxiety, and depression (Kesaniemi, Danforth, Jensen, Kopelman, Lefebvre, & Reeder, 2001; Warburton et al., 2006; Blair, Kohl, & Barlow, 1999; Wannamethee, Shaper, & Walker, 2000; Blair, Cheng, Holder, 2001). There is incontrovertible evidence from observational and randomized trials that regular physical activity contributes to the primary and secondary prevention of lifestyle related diseases (Warburton et al., 2006). An active lifestyle is associated with a greater than 50% reduction in these risk factors (Myers, Kaykha, & George, 2004; Blair et al., 2001). Furthermore, being moderately physically active is important to the prevention and control of high blood pressure (USDHHS, 2008). Physical activity has also been shown to be effective in attenuating the progression of coronary

artery disease. An energy expenditure of 2200 kcal per week has been associated with plaque reduction in patients with heart disease (Franklin, Swain, & Shephard, 2003).

Physical activity is also associated with the primary and secondary prevention of Type-2 diabetes mellitus. In a large prospective study, an increase of 500 kcal in energy expenditure per week was associated with a 6% decreased incidence rate of type-2 diabetes (Helmrich, Ragland, & Paffenbarger, 1991). Physically active men and women exhibited a 30-40% reduction in the risk of colon cancer. Physically active women exhibited a 20-30% reduction in the risk of breast cancer compared to their inactive counterparts (Lee, 2003). Weight-bearing exercises, specifically resistance exercises, appear to have the greatest effects on bone mineral density (Warburton, Cledhill, & Quinney, 2001). Physical activity programs were found to prevent or reverse almost 1% of bone loss per year in the lumbar spine and femoral neck in both pre and postmenopausal women (Wolff, van Croonenborg, Kemper, Kostense, & Twisk, 1999). Physical activity aids in weight management and contributes to healthy bones, muscles, and joints. Physical activity reduces falls among older adults, relieves the pain of arthritis, reduces symptoms of anxiety and depression and is associated with fewer hospitalizations, physician visits, and medications (USDHHS, 1996).

Statistics regarding the declining health of the nation have prompted researchers to examine the costs associated with inactivity and obesity. Costs attributable to overweight and obesity are approximately \$93 billion per year (Finkelstein, Fiebelkorn, Wang, 2003; Thorpe, Forence, Howard, & Joski, 2004). When comparing those of healthy weight (BMI between 18.5 and 25), the health care costs are 25% higher for those with a BMI of 30 to 35, 50% higher for those with a BMI of 35 to 40, and 100% higher for those with a BMI greater than 40 (Andreyeva, Sturm, & Ringel, 2004).

Taken together, the data presented above demonstrates the necessity to examine existing approaches to increasing physical activity due to the apparent health-related benefits.

Furthermore, the evidence also suggests the need to evaluate different approaches to improving physical activity behaviors. Thus, it seems appropriate to examine how promoting physical activity during a transitional time period may impact present health behaviors in an attempt to establish lifelong healthy behaviors. This is of critical importance considering the concurrent co-morbidities that are associated with physically inactive lifestyles later in life. Therefore, the goal of the P105 course is to influence and establish optimal health behaviors for students in order to prevent cardiovascular disease, diabetes, obesity, and other hypokinetic diseases in the future.

Previous research conducted within this population demonstrated that most college students do not currently experience health-related problems such as: hypertension, hyperlipidemia, and hyperglycemia. However, trends in the data indicated increases in weight, BMI, and percent body fat with decreases in self-reported physical activity (Kennedy-Armbruster, Johnston, Ona, DiIullo, Hornsby, & Schrag, 2008). With that said, the long-term consequences of weight gain and physical inactivity may eventually lead to furthering the disease continuum. The P105 course provides health education and physical activity opportunities for students as a preventative measure to decrease the adverse effects of a sedentary lifestyle.

### **Risky Health Behaviors**

#### ***Alcohol Consumption***

Alcohol is the most commonly used and abused drug among youth in the United States, more than tobacco and illicit drugs (CDC, 2009). It has been reported that by late adolescence, most youth have experimented with alcohol. In terms of current alcohol consumption, 33.2% of

the nation's tenth graders and 47.0% percent of twelfth graders report using alcohol in the past 30 days. Alcohol consumption continues to escalate after high school. In fact, 18- to 24- year olds have the highest level of alcohol consumption and alcohol dependence of any age group. In the first 2 years after high school, lifetime prevalence of alcohol use is 81.8%, 30-day use is 59%, and binge drinking prevalence is 36.3% (Brown, McGue, Maggs, Schulenberg, Hingson, Swartzwelder, et al., 2009). Thirty day use is defined as consuming alcohol in the past 30 days. Binge drinking is defined as consuming five or more drinks in one sitting for men and four or more drinks in one sitting for women (CDC, 2009).

Alcohol use by individuals under 21 years is a major public health problem. College students on average drink more than their non-college peers, even though they drank less during high school than those students who did not go onto college. The transition to college is marked by many significant cognitive, biological, social, and affective changes. It is also a time when alcohol consumption may escalate, and in many adolescents, can include binge and heavy drinking. In fact, the prevalence of onset of alcohol use disorders (AUDs) is higher in 18- to 20-year olds than any other time across the life span (Brown et al., 2009). As a result, a number of young adults are beginning to experience serious problems related to their alcohol use. Alcohol use and abuse negatively affects an individual's self-regulation and decision making abilities. Underage drinking is also associated with mental health problems, such as depression and suicidality (Spath, Greenberg, & Turrisi, 2009). In addition, alcohol use and abuse often co-occur with other risky behaviors, including tobacco and illicit drug use, violence, poor academic performance, and unsafe sexual behavior (Brown et al., 2009). Furthermore, adolescents who drink heavily are at increased risk of short- and long-term physical health problems, such as sexually transmitted infections resulting from unprotected sexual activity (Spath et al., 2009).

### ***Sexual Experimentation***

The majority of young people (75% of boys and 60% of girls) have had sex by the time they graduate from high school, and the majority of those who have not will have their first sexual experience while in college. Sexual experiences during these developmental time periods tend to be spontaneous, furtive, and poorly managed. Learning to manage one's sexuality provides opportunities for maturity and growth, but also poses risk for emotional trauma, pain, and physical health consequences (i.e. unplanned pregnancy, sexually transmitted diseases [STDs], and HIV/AIDS) (Cooper, 2002).

Compared to older adults, sexually-active adolescents (15 to 19 years of age) and young adults (20 to 24 years of age) are at higher risk for acquiring STDs. The increased risk is due to a combination of behavioral, biological, and cultural reasons. The higher prevalence of STDs among adolescents may reflect multiple barriers to accessing quality STD prevention services, including: lack of insurance or other ability to pay, lack of transportation, discomfort with facilities and services designed for adults, and concerns about confidentiality. Estimates suggest that while representing 25% of the sexually experienced population, 15- to 24-year-olds acquire nearly half of all new STDs (CDC, 2009).

Chlamydia rates for individuals 15- to 19- and 20- to 24- years of age continue to increase. Between 2007 and 2008, the increase for those 15- to 19- years of age was 10.7% and for those 20- to 24- years of age was 8.9%. Gonorrhea rates continue to be the highest among adolescents and young adults. Among females in 2008, 15- to 19- and 20- to 24-year-old women had the highest rates of gonorrhea. Among males, the highest rate occurred in 20- to 24- year olds. Additionally, syphilis rates among 15- to 19-year old women have increased annually since 2004. HPV infections are also highly prevalent, especially among young sexually-active women;



prevalence is 35% in individuals ranging from 14- to 19- years of age. While the great majority of HPV infections in women resolve within one year, they are a major health concern because persistent infection with specific types are causally related to cervical cancer; these types also cause genital warts and Pap smear abnormalities. Furthermore, the HIV rate among young adults is rising and the presence of an STD increases the likelihood of acquiring or transmitting HIV (CDC, 2009). In conclusion, the data suggests that the aggregate rates of HIV infections are relatively low; however, the rates of sexually transmitted diseases are considerably high among college students (CDC, 2009).

### **Healthy People 2010**

Healthy People 2010 is a set of national health objectives to achieve over the first decade of the new century. It can be implemented by different people, states, communities, and professional organizations to help develop programs to improve health. Healthy People 2010 builds on two other initiatives pursued over the past two decades. The 1979 Surgeon General's Report, *Healthy People*, and *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* both established national health objectives and served as the basis for the development of state and community plans. Like its predecessors, Healthy People 2010 was developed through a broad consultation process, built on the best scientific knowledge, and designed to measure programs over time (CDC, 2009). Healthy People 2010 has two overarching goals: (1) To increase quality and years of healthy life; and (2) To eliminate health disparities. Although some progress has been made in reaching these national health goals, the process is ongoing and faced with many difficult obstacles. These various challenges include high economic costs, population growth, an aging population, healthcare shortages, and an emphasis on treatment rather than preventative healthcare (USDHHS, 2006).

Healthy Campus 2010 mirrors Healthy People 2010 by establishing national college health objectives while advocating for student health (American College Health Association [ACHA], 2009). Healthy Campus 2010 includes planning guidelines with over 200 health objectives and goals for the nation's colleges and universities to achieve over the next decade. The leading health indicators for college students are: (1) Physical Activity; (2) Overweight and Obesity; (3) Tobacco Use; (4) Substance Abuse; (5) Responsible Sexual Behavior; (6) Mental Health; (7) Injury and Violence; (8) Environmental Quality; (9) Immunization; and (10) Access to Health Care (ACHA, 2009). The leading health indicators (related to this study) also align with the overarching health goals for college students presented in Healthy Campus 2010:

- Increase the proportion of college students who have received information on physical activity and fitness.
- Increase the proportion of college students who engage in physical activity at least 3 days/wk at moderate intensity for at least 30 minutes, or vigorous physical activity for 20 minutes or more minutes.
- Increase the proportion of college students who have received information on dietary behaviors and nutrition.
- Reduce the proportion of adolescents and college student who are overweight and obese.
- Increase the proportion of college students who have received information on alcohol and drug abuse prevention.
- Increase the proportion of college students who have received information on pregnancy prevention.
- Increase the proportion of females at risk of unintended pregnancy (and their partners) who use contraception.

Every 10 years, the USDHHS leverages scientific insights and lessons learned from the past decade along with new knowledge of current data, trends, and innovations. With the arrival of 2010, the 2020 National Health Objectives are currently being developed. Healthy People 2020 will reflect assessments of major risks to health and wellness, changing public health priorities, and emerging issues related to our nation's health preparedness and prevention (USDHHS, 2009). Some of the current modifications in Healthy People 2020 related to this study include:

(1) Preventing inappropriate weight gain in youth and young adults; (2) Increasing the proportion of adults that meet current federal physical activity guidelines for aerobic physical activity and for strength training; and (3) Decreasing the proportion of adults who drank excessively in the previous 30 days. Furthermore, the ACHA is strategically gathering statistics from the National College Health Assessment II (NCHA) to purpose new guidelines for Healthy Campus 2020 (ACHA, 2009).

### **Transitioning to College**

The transition from high school to college or university is a complex phenomenon represented by change, ambiguity, and adjustment across a number of previously salient domains in life. Research findings describe the transition to college or university as a process rather than a single event, which is unique for each individual (Bray & Born, 2004). During this transition, routines and habits that were established within the relatively structured environment of high school and home are disrupted, as are the security, predictability, and sense of control they once provided. The disruption of established behavior patterns, coupled with the added dimension of living away from home for the first time, often results in ambiguity and loss of reference points in areas previously considered central to one's identity. The changes that first year students encounter may be academic, social, physical, emotional, or cultural in nature (Bray et al., 2004).

Regular physical activity by youth and young adults can positively influence public health. However, adolescents (ages 15-19 years) become increasingly less active as grade in school increases with the most dramatic declines occurring during adolescence and young adulthood (ages 20-25 years) (Gyuresik, Spink, Bray, Chad, & Kwan, 2006). More specifically, the transitions from elementary school to high school and from high school to the freshmen year of university represent critical life changes that are associated with increased stress, threats to

self-esteem, lowered social support, and an abundance of increased health risk factors associated with a decline in physical activity patterns (Gyuresik et. al., 2006).

The transition from youth to adulthood is also associated with significant decreases in leisure-time physical activity participation. Moving from adolescence to adulthood is a time when physical activity levels decline and patterns of adult behaviors are being formed (Leslie, Fotheringham, Veitch, & Owen, 2000). As young adults attend university, many gain increased control over their lifestyles and may develop behaviors that become habitual, such as physical inactivity. Programs that specifically prepare young adults to maintain physical activity in the transition from high school or university to their working lives may help arrest the age-related decline in time spent being physically active throughout life (Leslie, Fotheringham, Veitch, & Owen, 2000).

#### **Past and Current College Health Interventions**

According to the USDHHS nationally recommended standards, two thirds (66.2%) of students report adequate levels of vigorous activity in high school, whereas, significantly fewer (44.1%) meet these standards during the first year of college. The literature demonstrates that regular, vigorous physical activity is associated with beneficial health factors, such as weight control, decreased risk of disease, and lower incidence of illness. Physical activity is also related to psychological well-being with established links to lower anxiety, depression, stress, and negative mood (Bray & Born, 2004). Bray and colleagues (2004) sought to investigate students' vigorous physical activity patterns and psychological well-being during the transition from high school to first-year university. The sample consisted of 145 Canadian undergraduates (18-19 years old) who completed retrospective measurements recalling their vigorous physical activity patterns during the first two months at university and the last two months at high school as well

as measurements assessing their psychological well-being. The results of the study revealed that one third of students were active in high school but became insufficiently active once at a university. Thirty-three percent were active in both settings, 23% consistently fell short of recommended levels, and 11% became active once at a university. Students who had become insufficiently active reported higher levels of fatigue and lower levels of vigor compared with those who continued to be active (Bray & Born, 2004). Although long-term (i.e. up to 1 year) recall of physical activity has been shown to be fairly accurate, there is still a likely possibility that physical activity levels were subject to distortion and memory decay to some degree. Therefore, future research should incorporate a longitudinal design to focus on obtaining these measurements throughout the transition to college and beyond.

Gyurcsik and colleagues (2006) sought to identify barriers to physical activity identified by students in grade seven through first-year at a university. This study also classified barriers using an ecological framework to examine the pattern of barrier categories (i.e. intrapersonal, interpersonal, institutional, community, public policy, and physical environment). Participants in grades 7-8 (n=35), 9-10 (n=67), 11-12 (n=80), and freshmen in first-year university (n=109) listed barriers to physical activity on an open ended measurement. The results revealed a trend for the average number of barriers reported by students to increase as grade in school increased. First-year university students reported significantly more barriers than all other grade groupings. The most common barriers listed for first year university students included: health issues (i.e. illness, injury, or medical condition), lack of sleep, and preference for relaxation. The frequency of barriers reported within the ecological categories was dependent on the specific grade groupings (i.e. grades 7-8, 9-10, 11-12, and freshmen in university). Furthermore, within each ecological category, distinct barriers were reported across the different grade groupings

(Gyuresik et al, 2006). Findings highlight the importance of using an ecological model to categorize barriers versus a classification system of internal or external to an individual. Limitations of this study must also be addressed; first, due to the cross-sectional analysis, information on the stability or variability of barrier categories and specific barrier types over time was not obtained. Second, the study was not generalizable because the results pertained to a select group of youth and young adult participants. Lastly, due to the open-ended nature of the barriers measure, participants may not have remembered to list all of the salient barriers. Future studies should incorporate a longitudinal study to assess the impact of barriers on physical activity patterns and other health behaviors over time.

Physical inactivity, overweight, and obesity are major public health concerns yet the potential impact of college physical education for promoting physical activity has remained largely unrecognized. DeVahl and colleagues (2006) sought to evaluate whether a greater academic incentive would improve the effectiveness and student adherence to a 12-week voluntary exercise program designed to decrease students' percentage of body fat (Devahl, Spink, Bray, Chad, & Kwan, 2006). Students (n=210) were randomly assigned to one of two groups with a different academic reward structure. The group with the greater reward structure showed better exercise adherence and lost more body fat than those without the additional academic incentive. These findings suggest that an academic incentive can increase overall student adherence to a voluntary exercise program and can boost the effectiveness of the program within a university environment (DeVahl et al., 2005). However, this study was performed within a relatively controlled academic setting with healthy physical therapy students. These students tend to be more motivated by greater academic incentives than students in other fields of study due to their already established interest in health promotion and rehabilitation.

These factors served as limitations and future research should strive to be more generalizable to a diverse group of students. Another limitation included a lack of focus on other health behaviors including: smoking, stress, sexual health, and nutrition. Thus, future interventions focusing on examining physical activity patterns as well as other risky health behaviors are warranted in this population cohort.

Students in higher education may be involved in other risky health behaviors that begin at an early age and continue into adulthood. Zahran, Zack, Vernon-Smiley, & Hertz (2007) examined demographic characteristics and risky health behaviors contributing to health-related quality of life (HRQOL). The study involved students (n=12,835) aged 18-24 years from the aggregated Behavioral Risk Factor Surveillance System survey (BRFSS) across all 50 states and the District of Columbia. Various HRQOL measurements were assessed including: health care access, cigarette smoking, physical activity/exercise, and binge drinking to determine the prevalence of risky health behaviors and their association with HRQOL. The results concluded that students reported more mentally unhealthy days (4 days) than physically unhealthy days (2 days) in the past 30 days. The research promotes incorporating risk-reduction and cessation skills to students engaged in risky behaviors. It also recognizes the importance of including mental health topics into health intervention programs (Zahran et al., 2007). The findings of this study cannot be generalizable to students younger than 18 years or older than 24 years old. Another limitation involves the cross-sectional nature of the BRFSS, which cannot distinguish whether the HRQOL affects the behaviors risky to health or vice versa. Future studies should incorporate individual characteristics (i.e. personal health behaviors, academic achievement, physical environment, and social support) which may account for additional differences among student subgroups. Although, this study examined risky behaviors for students between 18-24 years old,

it does not account for overall differences between age groups. The P105 course will utilize the American College Health Association's-National College Health Assessment II (ACHA-NCHA II) as a tool to determine the health and wellness behaviors of college freshmen. This survey will provide pertinent information while determining the impact of the P105 course on students' health and physical activity patterns.

### **National College Health Assessment**

Since its inception in 1920, the ACHA has been dedicated to the health needs of students at colleges and universities. It is the principal leadership organization for the field of college health and provides services, communications, and advocacy to help its members advance the health of their campus communities (ACHA, 2007).

In 1998, the ACHA initiated a work group to develop the ACHA-National College Health Assessment (ACHA-NCHA). The original survey instrument was designed to collect information on a broad range of students' health behaviors, health indicators, and perceptions. The ACHA-NCHA contained approximately 300 questions assessing student health status and health problems, risk and protective behaviors, and impediments to academic performance (ACHA, 2007). The ACHA-NCHA was first pilot tested in 1998-1999 and systematically evaluated with reliability and validity analyses comparing common survey items with national studies such as the National College Health Risk Behavior Survey (CDC, 2009).

These analyses include:

- Comparing relevant percentages with nationally representative databases.
- Performing item reliability analyses comparing overlapping items with a nationally representative database.
- Conducting construct validity analyses comparing ACHA-NCHA results with a nationally representative database.
- Conducting measurement validity comparing results of the ACHA-NCHA with a nationally representative database.



The data sets used for evaluation of reliability and validity are:

- National College Health Risk Behavior Survey CDC 1995
- Harvard School of Public Health 1999 College Alcohol Study (CAS)
- United States Department of Justice: The National College Women Sexual Victimization Study 2000 (NCWSV)
- ACHA-National College Health Assessment 1998, Spring 1999 and Fall 1999 Pilots, ACHA-NCHA Spring 2000

The series of comparisons and statistical analyses used triangulation, in that information from various resources were independently used to achieve the goal of demonstrating the reliability and validity of the ACHA-NCHA, and thus, its utilization and its ability to represent the population of college students. The analyses employed different national databases, covered different approaches, and utilized different statistical procedures to accomplish the evaluation. All in all, the original ACHA-NCHA appeared to be both reliable, valid, and of empirical value for representing the nation's college students (ACHA, 2007).

From its inception in spring 2000 through the spring 2006 survey implementation, the ACHA-NCHA was used to collect data from 255,974 college students at 332 institutions of higher education. The ACHA-NCHA has ties to two other important documents regarding college health: (1) Standards of Practice for Health Promotion in Higher Education; and (2) Healthy Campus 2010: *Making It Happen*. The ACHA-NCHA supports the health of the campus community by fulfilling the academic mission, supporting short- and long-term healthy behaviors, and gaining a current profile of health trends within the campus community (ACHA, 2009). In the spring of 2008, the original survey was revised and modified to include updated health trends and current health behaviors. The updated survey, ACHA-NCHA II, replaced the original survey in the fall of 2008.

**Comment [WH1]:** You need to restate that you won't be using the whole thing but that it is will still provide sufficient information. You are also using a qualitative survey. What information will this provide that has never been provided before.

The complete ACHA-NCHA II was not approved by the Internal Review Board (IRB), and therefore, the survey was modified to include pertinent information presented within the

P105 course. Thus, the survey included questions relating to general health, alcohol use/binge drinking, physical activity, condom use, and perceived stress. (see Health Behavior Survey [ACHA-NCHA II], Appendix A). The students also completed a qualitative survey to determine the most useful health and wellness topics presented throughout P105 (see Qualitative Survey, Appendix B). Ultimately, the goal of the P105 course is to provide health education in order to reduce risky behaviors (i.e. physical inactivity, binge drinking, unprotected sex, etc.) and improve students' overall health and wellness.

### **Summary**

The impact of a wellness course focusing on both health education and physical activity patterns has yet to be investigated. The implementation of the ACHA-NCHA II will determine if the P105 course makes a significant impact on the health and wellness behaviors of college freshmen.

## CHAPTER 3

### METHODOLOGY

The implementation of the study included the following steps: (a) Participants; (b) Instrument; (c) Design and Procedures; (d) Treatment of Data; and (e) Analysis of Data.

#### **Participants**

The population of interest consisted of college freshmen enrolled in the P105 course and living within the BFWLLC. Although other students (Fitness Specialist majors & Fitness Instruction minors) were enrolled in the course, the study was restricted to the freshmen subgroup only. All subjects were recruited by the principal investigator to participate in the research study during the first week of P105 lecture. Of the 254 students who were recruited to participate, 196 (77%) participants completed the pre-test survey (September 2009) and 184 (72%) completed the post-test survey (December 2009). For measurements from pre- to post-test, 155 subjects participated in the research study.

The intervention group (n=155) was comprised of freshmen, predominantly Caucasian (n=129) males (n=67) and females (n=86), living within the BFWLLC. The study cohort was also comprised of African Americans (n=6), Hispanics (n=4), Asians (n=7), an American Indian (n=1), and biracial students (n=4).

#### **Instrument**

The ACHA-NCHA II is a nationally recognized research survey to assist health service providers, health educators, counselors, and administrators in collecting data on college students' health habits, behaviors, and perceptions on the most prevalent health topics. The ACHA initiated the original ACHA-NCHA in 2000 and the instrument was used nationwide through the spring 2008 collection period. The ACHA-NCHA provides the largest known comprehensive

data set on the health of college students, providing the college health and higher education fields with a vast spectrum of information on students' health (ACHA, 2009).

The original survey, ACHA-NCHA, was revised in the spring of 2008 following a thorough pilot testing process. Although the general categories of information for which data are collected remain the same between the original survey and the revised survey (ACHA-NCHA II), a number of questions have been modified and new questions have been added to monitor a variety of health constructs (ACHA, 2009). Specific revisions include updated lists of illegal drugs, contraceptive methods, and vaccines. Other new items were also added to capture sleep behaviors, self-injury, the use/abuse of prescription drugs, and additional mental health issues (ACHA, 2009). For this study, the ACHA-NCHA II served as the survey instrumentation tool.

To this date, more than 575,000 students at 450+ colleges and universities across the country have already taken the survey. The ACHA-NCHA II has been used by two- and four-year public and private institutions from varied geographical regions, Carnegie Foundation Classifications, and campus settings. National media, government policymakers, and prominent public health and higher education organizations have repeatedly cited ACHA-NCHA II data in articles, proposals, and presentations. The ACHA-NCHA II is an established and well-regarded tool that presents a rich picture of college students' health (ACHA, 2009).

For this study, the ACHA-NCHA II was modified to include specific questions pertaining to the health topics covered within the P105 course. The IRB did not approve the implementation of the complete ACHA-NCHA II survey due to privacy concerns; therefore, the survey topics related to self-reported general health, alcohol use/binge drinking, physical activity, condom use, and perceived stress (see Health Behavior Survey, Appendix A). The qualitative survey was implemented to determine the most useful health topics presented within the P105 course (see

Qualitative Survey, Appendix B). The survey was comprised of weekly course topics and required students to identify the three most effective health topics and the three least effective health topics. The survey also required students to report if they would choose to live in the BFWLLC again based on its wellness amenities (i.e. the P105 course and proximity to a fitness facility).

### **Design and Procedures**

A pre- to post-test design was employed for this study. Participants were assessed during the first week of the fall semester (pre-test) and again during the final week of the fall semester (post-test). At each time point, the survey took approximately 10 minutes to complete. Every student enrolled in P105 completed the modified ACHA-NCHA II survey at the end of the lecture period. At each time point, the survey had an attached informed consent statement (see Informed Consent Statement, Appendix C). If the student signed the informed consent, the survey was placed in Box 1; however, if the student did not sign the informed consent, the survey was placed in Box 2. Before inclusion in the research study, all informed consent documents were examined to ensure subjects' willingness to participate in the research study. Students printed and signed their name at each time point, which enabled the data to be matched from pre- to post-test. The P105 qualitative survey was administered after students completed the modified ACHA-NCHA II post-test survey. The qualitative survey took approximately 5 minutes to complete at the end of the lecture period. There was no incentive provided to the students for participating nor was a grade affiliated with participating in the research study.

P105 is a one credit hour wellness course offered by the Department of Kinesiology within the School of HPER. The course emphasized health education, physical activity promotion, and community building opportunities within the classroom and residence hall

settings. The course covered a wide variety of health topics including: physical activity, quality of life and disease, nutrition, stress management, sexual health, mental health, and alcohol awareness. The content of P105 represented a typical health and wellness course; however, skill application was heavily emphasized to promote the initiation and maintenance of optimal health and wellness behaviors. Students are required to complete various assignments, self-reflective assessments, journaling, and exams throughout the semester long course (see Course Syllabus, Appendix D). The course also included a lab component to conveniently promote physical activity within the residence hall setting.

The P105 course was delivered within a 15-week time period during the fall semester 2009. Each lecture session met once a week for 50 minutes in a classroom located within the students' residence hall (Briscoe). Each lab session also met once a week for 50 minutes and was held in the Briscoe fitness facility. The students were required to purchase a textbook and a pedometer for the P105 course. The assigned readings, handouts, and assignments reinforced the content covered during each weekly class session.

#### **Treatment of Data**

For data analysis, the categorical variables were coded and entered into Microsoft Excel and SPSS (Predictive Analytics SoftWare [PAW] 17.0). All statistical analyses were performed using SPSS (Predictive Analytics SoftWare [PAW] 17.0).

Question 1 pertained to students' self-reported general health and was coded according to a rank order scale. Question 2 required students to recall the number of drinks consumed while partying/socializing and Question 3 focused on the number of times they engaged in binge drinking (i.e. 5 or more drinks in one sitting) during the past two weeks. The data was entered based on the number of drinks consumed and incidences of binge drinking reported. Question 4

pertained to students' self-reported condom use during oral, vaginal, and anal intercourse within the past 30 days. The data was entered based on students' self-reported condom use during the past 30 days. Question 5 asked the students' to recall participation in moderate- and vigorous-intensity physical activity and resistance training during the past 7 days. Data was coded based on the number of times participation was reported within the past 7 days. Question 6 required the students to report their self-perceived stress levels during the past 12 months. Data was coded according to a rank order scale. Question 7 required the students to report the average number of hours spent studying per night. Data was entered based on the number of hours students reported studying per night.

#### **Analysis of Data**

All statistical analyses were performed using SPSS (Predictive Analytics SoftWare [PAW] 17.0). Descriptive statistics (mean, SD, and frequencies) were utilized to describe the characteristics of the student population from pre- to post-test. The non-parametric statistical Friedman's test was used to detect differences in ordinal data between pre- to post-test. Repeated Measures Analysis of Variance (ANOVA) was used to detect differences in interval data from pre- to post-test. The alpha level was set at  $p < 0.05$ .

## CHAPTER 4

### RESULTS

General health, alcohol use/binge drinking, condom use, physical activity, and perceived stress were examined to quantify the efficaciousness of P105 on the health and wellness behaviors of college freshmen. The analysis of data presented in this chapter depicts the intervention effects from pre- to post-test and results from the qualitative survey.

#### *Intervention Effects*

Question 1 of the modified ACHA-NCHA II survey required students to report their self-perceived general health. Table 1 depicts students' self-reported general health frequencies from pre- to post-test.

<b>Table 1</b>				
<b>Self-Reported General Health</b>				
<b>Category</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>Chi Square</b>	<b>p</b>
<b>Excellent</b>	10	19	5.88	0.015**
<b>Very Good</b>	62	66		
<b>Good</b>	73	59		
<b>Fair</b>	6	9		
<b>Poor</b>	3	0		
<b>Don't Know</b>	0	1		

Note: Data depicts reported frequencies from pre- to post-test

\*\*Demonstrates a significant increase for self-reported general health.



Further, Figure 1 reflects the changes in students' self-reported general health from pre- to post-test.



The results from the non-parametric statistical Friedman's Test revealed a significant difference in self-reported general health from pre- to post-test ( $p = 0.015$ ).

Question 2 required students to identify the number of drinks consumed during the last time they socialized/partied. Question 3 required students to identify the number of times they engaged in binge drinking (i.e. 5 or more drinks in one sitting) during the past two weeks. Table 2 depicts the means and standard deviations for drinks consumed and binge drinking incidences from pre- to post-test.

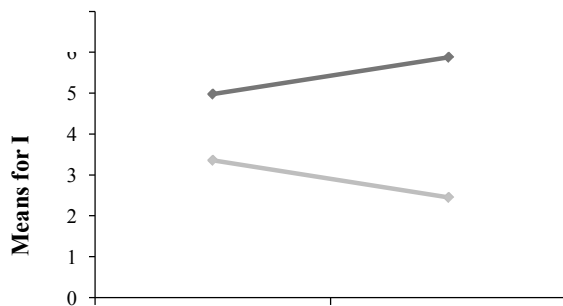
<b>Table 2</b>				
<b>Mean and Standard Deviation for Drinking Behaviors</b>				
<b>Outcome Measure</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>F</b>	<b>p</b>
<b>Drinks Consumed</b>	4.98 ± 4.28	5.88 ± 4.59	6.7	0.011*
<b>Binge Drinking</b>	3.36 ± 2.83	2.45 ± 2.02	23.33	<0.001**

Note: Number of drinks consumed while socializing/partying (drinks consumed); The number of times consuming 5+ drinks during the past 2 weeks (binge drinking).

\*Demonstrates a significant increase in the number of drinks consumed

\*\*Demonstrates a significant decrease in binge drinking

Figure 2 depicts the means of the self-reported number of drinks and binge drinking incidences from pre- to post-test.



The results from the Repeated Measures ANOVA demonstrated a significant increase in drinks consumed from pre- to post-test ( $p = 0.011$ ). The results from the Repeated Measures ANOVA demonstrated a significant decrease in binge drinking incidences from pre- to post-test ( $p < 0.001$ ).

Question 4 related to condom use during the past 30 days and was comprised of three parts, which included: (1) oral intercourse; (2) vaginal intercourse; and (3) anal intercourse.

Table 3 depicts the means and standard deviations for condom use during oral, vaginal, and anal intercourse from pre- to post-test.

<b>Table 3</b>				
<b>Mean and Standard Deviation for Condom Use</b>				
<b>Outcome Measure</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>F</b>	<b>p</b>
<b>Oral Intercourse</b>	1.51 ± 1.56	1.54 ± 1.63	0.65	0.799
<b>Vaginal Intercourse</b>	2.62 ± 2.54	2.38 ± 2.47	1.59	0.209
<b>Anal Intercourse</b>	.229 ± .623	.340 ± .954	1.81	0.181

Note: No significant differences in condom use from pre- to post-test

The results from the Repeated Measures ANOVA demonstrated no significant differences in condom use during anal ( $p = 0.799$ ), vaginal ( $p = 0.209$ ), or anal ( $p = 0.181$ ) intercourse.

Question 5 required students to identify the number of days they were physically active during the past 7 days (i.e. moderate- and vigorous- intensity physical activity). Students also reported the number of days they participated in resistance training during the past 7 days. Table 4 depicts the means and standard deviations for self-reported physical activity participation from pre- to post-test.

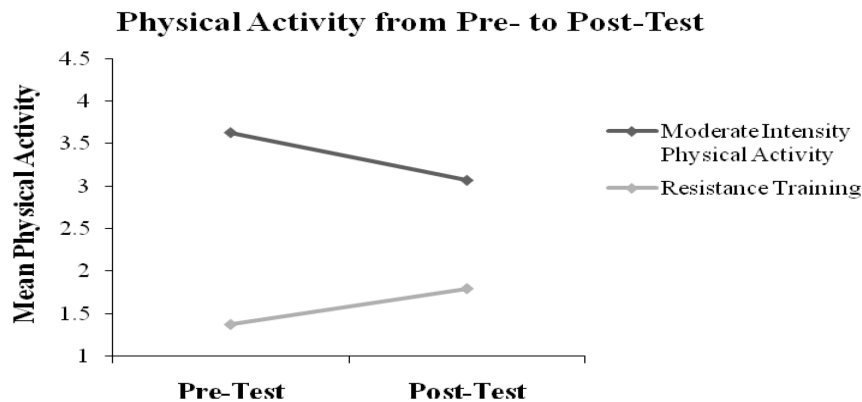
<b>Table 4</b>				
<b>Mean and Standard Deviation for Physical Activity</b>				
<b>Outcome Measure</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>F</b>	<b>p</b>
<b>Moderate-Intensity Physical Activity</b>	3.63 ± 2.07	3.07 ± 1.96	10.25	0.002*
<b>Vigorous-Intensity Physical Activity</b>	2.15 ± 1.92	2.14 ± 1.75	0.007	0.932
<b>Resistance Training</b>	1.37 ± 1.84	1.79 ± 1.75	7.22	0.008**

Note: Number of times engaged in physical activity behaviors during the past 7 days.

\*Demonstrates a significant decrease in self-reported moderate-intensity physical activity.

\*\*Demonstrates a significant increase in self-reported resistance training.

Figure 3 depicts the means of self-reported moderate-intensity physical activity and resistance training participation from pre- to post-test.



The results from the Repeated Measures ANOVA demonstrated a significant decrease in moderate-intensity physical activity ( $p = 0.002$ ). The results from the Repeated Measures ANOVA demonstrated no significant difference for vigorous-intensity physical activity from pre- to post-test ( $p = 0.932$ ). The results from the Repeated Measures ANOVA demonstrated a significant increase in resistance training from pre- to post-test ( $p = 0.008$ ).

Question 6 required students to report self-perceived stress levels over the last 12 months.

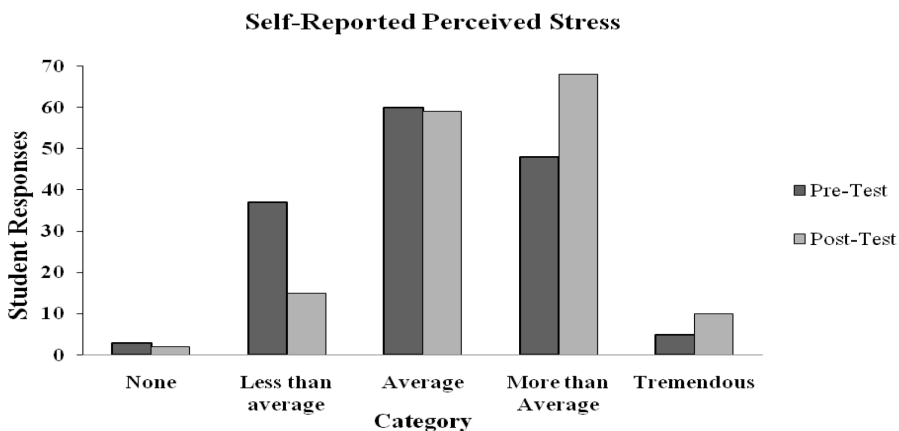
Table 5 depicts students' self-reported perceived stress frequencies from pre- to post-test.

<b>Table 5</b>				
<b>Self-Reported Perceived Stress</b>				
<b>Category</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>Chi Square</b>	<b>p</b>
<b>Tremendous Stress</b>	5	10	18.61	< 0.001*
<b>More than Average Stress</b>	48	68		
<b>Average Stress</b>	60	59		
<b>Less than Average Stress</b>	37	15		
<b>No Stress</b>	3	2		

Note: Data depicts reported frequencies from pre- to post-test

\*Demonstrates a significant increase in self-reported perceived stress in the past 12 months

Further, Figure 4 reflects the changes in self-reported perceived stress from pre- to post-test.



The non-parametric statistical Friedman’s test was used to detect differences between students’ self-perceived stress from pre- to post-test. The results revealed a significant increase in self-perceived stress from pre- to post-test ( $p < 0.001$ ).

Question 7 required students to report the average number of hours spent studying per night. Table 6 depicts the means and standard deviations for hours spent studying from pre- to post-test.

<b>Table 6</b>				
<b>Mean and Standard Deviation for Studying per Night</b>				
<b>Outcome Measure</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>F</b>	<b>p</b>
<b>Hours Studied</b>	2.93 ± .895	3.14 ± 1.10	5.87	0.017**

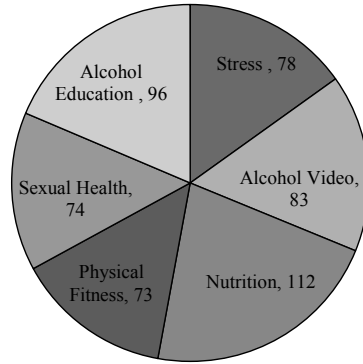
\*\*Demonstrates a significant increase in hours studied per night

The results from the Repeated Measures ANOVA demonstrated a significant increase in the average hours students spent studying per night ( $p = 0.017$ ).

***Qualitative Survey***

A qualitative survey comprised of four questions was delivered to students at the end of the semester. The survey was implemented to determine the most effective health topics presented within the P105 course (i.e. disease and quality of life, physical fitness, mental health, sexual health, alcohol, lifestyle physical activity, etc.) (see P105 Course Outline, Appendix D). Students identified the most useful health topics acquired as a result of taking the P105 course. The most frequently circled responses are identified below. Figure 5 reveals the students’ top three responses on the P105 qualitative survey (see Appendix B).

### FFW Course Components



The results identified alcohol education, an alcohol video, nutrition, physical fitness, sexual health, and stress management as the most effective course components based on student feedback. The results identified introduction to wellness, goal setting, lifestyle physical activity, disease/quality of life, and mental health as the least effective course components based on student feedback. Furthermore, students were asked to choose if they would live within the BFWLLC again based on its wellness amenities (i.e. the P105 course and proximity to a fitness facility); nearly 88% (n=137) of the students responded “yes” while only 12% (n=18) responded “no.”

## CHAPTER 5

### DISCUSSION OF RESULTS

The purpose of the study was to assess the efficacy of a health and wellness course (P105) on the health behaviors of college freshmen. It was hypothesized that the P105 course would significantly increase students' self-reported general health, decrease students' self-reported levels of alcohol consumption, increase students' self-reported condom use, increase students' self-reported levels of physical activity, and decrease students' self-reported stress levels. It was also predicted that the qualitative survey would allow insight on the most important health topics identified by students throughout the P105 course.

It was hypothesized that there would be a significant increase in students' general health descriptions. The data from the P105 intervention supports this hypothesis. The pre-test data revealed that 46.8% of the P105 students surveyed described their health as very good (40.3%) or excellent (6.5%). Further, 94.2% of the P105 students surveyed described their health as good (47.4%), very good, or excellent. The post-test data revealed that 55.2% of the P105 students surveyed described their health as very good (42.9%) or excellent (12.3%). Further, 93.5% of the P105 students surveyed described their health as good (38.3%), very good, or excellent. The percentages indicate that more students perceived their general health to be very good or excellent post intervention. Data from the ACHA-NCHA II survey reported that 59.5% of college students surveyed described their health as very good and excellent, which is consistent with the post-test results reported in this study. Data from the ACHA-NCHA II survey reported that 92.1% of college students surveyed their health as good, very good, or excellent, which was also consistent with the post-test results reported in this study. The purpose of the P105 course was to provide information regarding general health topics with the intent of improving students'

overall perception of health. The results from this study indicate the P105 course was an efficacious way to improve students' self-perceived general health.

It was hypothesized that participation in P105 would significantly decrease students' self-reported levels of alcohol consumption associated with binge drinking. The data from the current investigation does not support this hypothesis. The results indicated that student alcohol consumption increased from pre- to post-test. However, the results also indicated a decrease in the number of times students have had 5 or more drinks (i.e. binge drinking) during the past two weeks. Research demonstrates that the prevalence of college students engaging in binge drinking has continued to increase since 1998. Currently, approximately 2 of every 5 American college students can be defined as binge drinkers (Hingson et al., 2005). O'Malley & Johnston (2002) confirm the extraordinarily high prevalence of binge drinking among college students. Their research revealed that 70% of college students report having engaged in heavy drinking in the past 30 days while 40% report heavy drinking during the last 2 weeks (O'Malley & Johnston, 2002). Furthermore, Franca and Colares (2008) evaluated student health behaviors at the completion of various health courses. The results revealed that alcohol consumption significantly increased for students at the end of these courses. Both tobacco and alcohol consumption were high among students, particularly at the end of the courses (Franca & Colares, 2008). The results of this study are consistent with those presented in the literature. There remains an ongoing need to evaluate health courses as effective interventions for student alcohol trends. Other future intervention techniques should focus on discouraging alcohol experimentation because once the habit has begun, the vice is expected to be long lasting (Franca & Colares, 2008).

It was hypothesized that participation in P105 would significantly increase students' self-reported condom use during sexual intercourse. The data from the current investigation does not



support this hypothesis. The results indicated that there were no significant differences for condom use during oral, vaginal, and anal intercourse from pre- to post-test. Cooper (2002) states that most college students are sexually experienced and that many engage in multiple forms of risky sexual behavior. According to the National College Health Risk Behavior Survey (1995), 8 of 10 college students have had intercourse while 62% have had recent (past 3 months) intercourse. More importantly, 25% of students have had 6 or more lifetime partners and only a minority takes adequate precautions to prevent pregnancy or sexual infection (Cooper, 2002). For example, approximately 4 in 10 students used a condom during the last time they engaged in sexual intercourse. Fewer than 4 in 10 reported that they or their partner had always used a condom in the past 30 days. Finally, only 17% reported having ever had anal sex but fewer than 25% reported always using a condom (Cooper, 2002). The results of this investigation are consistent with the literature. Future studies should continue to examine why protection is not commonplace among college students. Furthermore, health educators should continue to encourage condom use as a means to decrease the risk of unintended pregnancy and infection while promoting college students' overall health and well-being.

It was hypothesized that participation in P105 would significantly increase students' self-reported levels of physical activity. The data from the current investigation does not support this hypothesis. The results indicated that moderate-intensity physical activity decreased from pre- to post-test. The average days students reported participating in moderate-intensity physical activity decreased from 2-4 days per week to 1-4 days per week. Also, those exercising 7 days per week at a moderate intensity decreased from 20 to 9 students. Further, the results indicated no significant difference for vigorous-intensity physical activity from pre- to post-test. However, the results revealed a significant increase for resistance training in the past 7 days from pre- to post-

test. The average days students participated in resistance training increased on average from 0-3 days to 0-4 days. Keating et al. (2005) found that 46% of first-year college students lead an insufficiently active lifestyle while also reporting that nearly 40-50% of all college students do not meet the national physical activity recommendations (Irwin, 2004). Therefore, research indicates that most college students are not active enough to accrue the health benefits associated with moderate intensity physical activity. Moreover, Bray and Kwan (2006) found the transition from high school to university to negatively affect students' physical activity levels (i.e. prevalence of inactivity increased). Students' activity levels were also affected more during the early stages (pre: 2 months) versus the later stages (post: 7 months) of the transitional time period (Bray & Kwan 2006). Bray & Born (2004) also found a stark and significant decline in vigorous intensity physical activity during the transition from high school to college. In high school, 61% of students participated in sufficient amounts of vigorous physical activity while only 44% met the requirements during the first two months at college or university (Bray & Born, 2004). The findings of this study are consistent with the literature. Future studies should promote moderate- and vigorous-intensity physical activity to transitioning college students. Further, achieving the maintenance of regular physical activity over students' post-secondary experience should be an important target for public health research.

It was hypothesized that participation in P105 would significantly decrease students' self-reported stress levels. The data from the current investigation does not support this hypothesis. The results revealed that the students' self-reported stress increased from pre- to post-test. Bray and Kwan (2006) found that the transition to college or university life is consistently identified as a chronic stressor among college students. The transition is associated with decreased physical and psychological well-being (Bray & Kwan, 2006). Furthermore, Lipka (2008) conducted a

stress survey to 2,000 college students at 40 colleges and universities and found that nearly 8 in 10 students experienced stress in their daily lives. Further, more than 6 in 10 students struggled to motivate themselves to complete everyday tasks (i.e. attend class, complete homework, engage in physical activity). Schoolwork, grades, family issues, and relationships were among the most common stressors identified by college students during this transitional time period (Lipka, 2008). The results of this study are consistent with those presented in the literature. The transition to college represents a major life stressor for most students. Leaving home and moving into a dormitory is a major disruption to existing family and friendship relations. First year students also have to deal with changing societal roles involving greater independence (Bray & Kwan, 2006). For the majority, the post-test survey was administered prior to finals week which could have contributed to students' increased stress levels. Future investigations should account for the transitional adjustment to college or university as a chronic life stressor for students.

Hours spent studying was not included within the study's overall hypotheses but the results indicated a significant difference from pre- to post-test ( $p = 0.017$ ). The number of hours students spent studying remained fairly consistent; however, there was a significant increase in the average hours students spent studying (2.93 to 3.14 hours). Furthermore, the post-test survey was administered prior to finals week which could have been associated with the increase in studying noted above.

It was predicted that semester-end qualitative surveys would allow feedback pertaining to the students' perceptions of important health concepts acquired as a result of taking P105. A summary of student responses revealed that alcohol education, an alcohol video, nutrition, physical fitness, sexual health, and stress management were the most important course components.

### **Conclusions**

Findings from this pilot study suggest improvements in health behaviors can be accomplished through an academic course comprised of a combination of health education and physical activity opportunities offered within a residence hall. However, other confounding factors (i.e. transitional time period, dormitory environment, and academic rigor) may have compromised the overall effectiveness of the course due to the observed significant increase in self-reported alcohol consumption, decrease in self-reported moderate intensity physical activity, and increase in perceived stress. Future randomized controlled trials are needed to elucidate the impact of a combined health education and physical activity course on global health and wellness behaviors.

### **Limitations**

The main limitation for this study was the lack of a control group which did not allow for comparisons between groups. A control group would have enabled the investigator to determine that the changes were in fact due to the P105 course. Further, the complete ACHA-NCHA II was not approved by the IRB, and therefore, could not be utilized in its entirety for this study. The health behavior survey was limited to include specific health topics presented within the P105 course and did not address other health behaviors (i.e. tobacco and drug use, mental health, nutrition, disease, and injury prevention, etc). This prevented an overall comparison between this study and the national ACHA-NCHA II database. Finally, there are several other factors (i.e. social and environmental) within the BFWLLC that could have positively or negatively affected students' health behaviors.

### **Recommendations for Future Research**

Due to the utilization focused nature of this study, there are several ways this data could be utilized for future research. First, the results of this study justify the need to distribute the entire ACHA-NCHA II survey. The results of this study were significant; however, there are more questions needed to be asked in order to receive more information regarding students' health behaviors. These findings would be particularly useful in developing course content, enhancing the delivery of course material, and identifying future targeted interventions. Employing future interventions is important given the changes that students appear to experience from the beginning to the end of the course as evidenced by the results for: alcohol consumption/binge drinking, physical activity, and perceived stress. Furthermore, this study emphasizes the importance of the P105 course within the residence hall setting and encourages future funding for the course and the professional staff. Finally, this research could serve as a pilot study to develop further hypotheses for future, randomized controlled studies within health and wellness courses.

**APPENDIX A**

Health Behavior Survey (Modified ACHA-NCHA II)

### Health Behavior Survey

**Instructions:** The following questions ask about various aspects of your health. To answer the questions, fill in the circle that best matches your response. Use a pencil or pen [with black or blue ink only].

*This survey is completely voluntary. You may skip any question that you do not feel comfortable answering.*

#### HEALTH

1. How would you describe your general health?

- Excellent
- Very good
- Good
- Fair
- Poor
- Don't know

**ALCOHOL**

2. The last time you “partied”/socialized how many drinks of alcohol did you have? (If you did not drink alcohol, please enter 00. For other numbers mark: 01, 02, 03, etc.)

**DRINKS**

<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9

3. Over the **last two weeks**, how many times have you had five or more drinks of alcohol at a sitting?

<input type="radio"/> N/A–don’t drink	<input type="radio"/> 2 times	<input type="radio"/> 5 times	<input type="radio"/> 8 times
<input type="radio"/> None	<input type="radio"/> 3 times	<input type="radio"/> 6 times	<input type="radio"/> 9 times
<input type="radio"/> 1 time	<input type="radio"/> 4 times	<input type="radio"/> 7 times	<input type="radio"/> 10 or more times



**SEX BEHAVIORS AND CONTRACEPTION**

4. Within the **last 30 days**, how often did you or your partner(s) use a condom or other protective barrier (e.g. male condom, female condom, dental dam) during:

Oral Sex?

N/A – never did this sexual activity	Have not done during last 30 days	Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vaginal intercourse?

N/A – never did this sexual activity	Have not done during last 30 days	Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Anal intercourse?

N/A – never did this sexual activity	Have not done during last 30 days	Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**EXERCISE**

5. On how many of the **past 7 days** did you:

Do <b>moderate-intensity</b> cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least <b>30 minutes</b> ?	<input type="radio"/> 0 days	<input type="radio"/> 1 day	<input type="radio"/> 2 days	<input type="radio"/> 3 days	<input type="radio"/> 4 days	<input type="radio"/> 5 days	<input type="radio"/> 6 days	<input type="radio"/> 7 days
Do <b>vigorous-intensity</b> cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least <b>20 minutes</b> ?	<input type="radio"/> 0 days	<input type="radio"/> 1 day	<input type="radio"/> 2 days	<input type="radio"/> 3 days	<input type="radio"/> 4 days	<input type="radio"/> 5 days	<input type="radio"/> 6 days	<input type="radio"/> 7 days
Do 8-10 strength training exercises (such as resistance weight machines) for 8-12 repetitions each?	<input type="radio"/> 0 days	<input type="radio"/> 1 day	<input type="radio"/> 2 days	<input type="radio"/> 3 days	<input type="radio"/> 4 days	<input type="radio"/> 5 days	<input type="radio"/> 6 days	<input type="radio"/> 7 days

**MENTAL HEALTH**

6. Within the last 12 months, how would you rate the overall level of stress you have experienced?

- No stress
- Less than average stress
- Average stress
- More than average stress
- Tremendous stress

## DEMOGRAPHIC CHARACTERISTICS

*This survey is completely voluntary. You may skip any question that you do not feel comfortable answering.*

1. What is your gender?

- Male
- Female

2. How do you usually describe yourself?

*(Mark all the apply)*

- White, non Hispanic (includes Middle Eastern)
- Black, non Hispanic
- Hispanic or Latino/a
- Asian or Pacific Islander
- American Indian, Alaskan Native, or Native Hawaiian
- Biracial or Multiracial
- Other

3. On average, how many hours do you spend studying per night?

- Less than 1 hour
- 1 hour
- 2 hours
- 3 hours
- 4 or more hours

**Thank you for completing this survey!**

**APPENDIX B**

P105 Qualitative Survey

1. Circle the top 3 health concepts that made the **most impact** for you as a student?

Introduction to Wellness	Lifestyle Physical Activity	Physical Fitness
Stress Management	Nutrition	Sexual Health Education
Posture/Back Health	Goal Setting	Alcohol Awareness
Alcohol Video: Sam Spady Story	Lab: Physical Activity Component	Mental Health
Other: please record →		

2. Circle the three health concepts that made the **least impact** for you as a student?

Introduction to Wellness	Lifestyle Physical Activity	Physical Fitness
Stress Management	Nutrition	Sexual Health Education
Posture/Back Health	Goal Setting	Alcohol Awareness
Alcohol Video: Sam Spady Story	Lab: Physical Activity Component	Mental Health
Other: please record →		

3. For your **top 3** health concepts, explain in one sentence why each concept was particularly important to you as a student.

- 
- 
- 

4. After living in the BFWLLC and considering its amenities (fitness facility, P105 wellness course, community involvement opportunities), would you choose to live here again?

Circle One:

<b>YES</b>	<b>NO</b>
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**APPENDIX C**

Informed Consent Statement

**INDIANA UNIVERSITY BLOOMINGTON**

**INFORMED CONSENT STATEMENT**

**Utilization Focused Public Health Evaluation of a Health and Wellness Intervention for College Freshmen**

You are invited to participate in a research study evaluating the impact of a wellness course on the health habits, behaviors, and perceptions of college students. You were selected as a possible participant because you are enrolled in P105: Foundations of Fitness and Wellness during the fall semester of 2009. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

The study is being conducted by Meagan Shipley and Indiana University, School of HPER-Department of Kinesiology. The study is sponsored by Dr. John Shea in the Department of Kinesiology, Dr. Fernando Ona in the Department of Applied Health Science, and Carol Kennedy-Armbruster in the Department of Kinesiology.

**STUDY PURPOSE**

The purpose of this study is to determine the health behaviors of college students enrolled in P105 in order to evaluate the effectiveness of the wellness course for pedagogical purposes.

**NUMBER OF PEOPLE TAKING PART IN THE STUDY:**

If you agree to participate, you will be one of 300 subjects who will be participating in this research. All students enrolled in P105 will be assigned to the intervention group.

**PROCEDURES FOR THE STUDY:**

If you agree to be in the study, you will do the following things:

As part of your normal classroom curriculum you will be completing a survey with questions derived from the American College Health Association-National College Health Assessment (ACHA-NCHA) at the beginning of the semester and at the end of the semester. I would like your permission to use your pre and post survey as well as the qualitative survey (evaluating the course) for research; nothing more is required of you for participation in this study.

If you agree to participate, the informed consent is stapled to the top of the assessment survey. If you agree to allow me to use your survey please sign the informed consent form. If you choose not to participate, please return the complete the survey with the informed consent form blank. There will be 2 boxes at the front of the classroom. Students who have signed the informed consent [survey will be used for research purposes] will place their survey in Box 1 while

students who do not wish to participate [did not sign the informed consent and do not want their survey to be used towards research] will place their survey in Box 2.

Copies will be made and the original will be returned to your instructor, your instructor will not know if you agreed to participate or not.

**RISKS OF TAKING PART IN THE STUDY:**

There is the possibility of loss of confidentiality

**BENEFITS OF TAKING PART IN THE STUDY:**

Contributing to future course improvements

Aiding in pedagogical improvements towards enhancing student learning within the course

Helping in the examination of the effectiveness of the current program located within the residence hall

Providing important and relevant information regarding student health behaviors to faculty, the School of HPER, and RPS.

**ALTERNATIVES TO TAKING PART IN THE STUDY:**

An alternative to participating in the study is to choose not to participate.

**CONFIDENTIALITY**

Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published. All subjects will be assigned an identification number, which will be used when recording and analyzing data. A code list containing the subjects name and subject number will be stored separately in a locked file cabinet [and a secure database] and will only be available to the primary investigator. The reports generated as a result of this investigation will in no way identify individual subjects. The code list of participants will be destroyed upon the completion of this investigation in December 2010.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the IUB Institutional Review Board or its designees, the study sponsor, Dr. John Shea, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP) and who may need to access your medical and/or research records.

**PAYMENT**

You will not receive payment for taking part in this study.

**CONTACTS FOR QUESTIONS OR PROBLEMS**



For questions about the study or a research-related injury, contact the researcher Meagan Shipley at 812-855-8520.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IUB Human Subjects office, 530 E Kirkwood Ave, Carmichael Center, 203, Bloomington IN 47408, 812-855-3067 or by email at iub\_hsc@indiana.edu

**VOLUNTARY NATURE OF STUDY**

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with the investigator(s).

**SUBJECT'S CONSENT**

In consideration of all of the above, I give my consent to participate in this research study.

I will be given a copy of this informed consent document to keep for my records. I agree to take part in this study.

**Subject's Printed Name:** \_\_\_\_\_

**Subject's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name of Person Obtaining Consent** \_\_\_\_\_

**Signature of Person Obtaining Consent:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Form Date: June 3, 2009

**APPENDIX D**

P105 Course Outline

**P105: FOUNDATIONS OF FITNESS AND WELLNESS • FALL 2009 • LECTURE SERIES**

**\*All assignments must be turned in at the beginning of class\***

<b>Week/Date:</b>	<b>Topic:</b>	<b>In Class:</b>	<b>Out of Class/Homework:</b>
Week 1: August 31-Sept. 4th	Course Introduction	- Review Syllabus - Course Policies - Health Behavior Survey - Journal 1	- <b>Purchase textbook</b> - <u>Purchase pedometer from HPER 296</u> - Read Ch 1 - "What is Wellness"
Week 2: Sept. 7 <sup>th</sup> – 11 <sup>th</sup>	What Is Wellness?	- Wellness Lecture Notes - Activity 1.1 - Assign Assignment 1	- <b>Assignment 1 – SMART Goal Setting</b> - Read Ch. 2 – "Disease & Life Expectancy" - Prepare for Quiz 1 - <u>Purchase pedometer from HPER 296</u>
Week 3: Sept. 14 <sup>th</sup> -18 <sup>th</sup>	Disease and Life Expectancy	- <b>Assignment 1 due</b> - <b>Quiz 1</b> - Assign Assignment 2 (Pg. 77) - Journal 2	- <b>Assignment 2 – "Assessing your Risk"</b> - Prepare for Quiz 2 - <u>Purchase pedometer from HPER 296</u>
Week 4: Sept. 21 <sup>st</sup> -25 <sup>th</sup>	Lifestyle Physical Activity	- <b>Assignment 2 due</b> - <b>Quiz 2</b> - Lifestyle Physical Activity Notes - Journal 3	- Prepare for Quiz 3 - <b>**PEDOMETER MUST BE PURCHASED BY THIS WEEK OF LAB**</b>
Week 5: Sept. 28 <sup>th</sup> – October 2 <sup>nd</sup>	Physical Fitness	- <b>Quiz 3</b> - Fitness Lecture notes - Activity 4.1 (Pg. 141)	- Prepare for Quiz 4 - No assigned homework - <b>Reminder: Assignment 3 due in LAB</b>
Week 6: October 5-9 <sup>th</sup>	Posture & Stability	- <b>Quiz 4</b> - Lecture Notes - Guest Speaker - Assign Assignment 4	- <b>Assignment 4 – "Mypyramid.gov"</b> - Read Ch. 5 – "Nutrition & Weight Management"
Week 7: October 12-16 <sup>th</sup>	Nutrition	- <b>Assignment 4 due</b> - Nutrition PP - Guest Speaker(s) - Journal 4	- Prepare for Midterm Exam
Week 8: October 19 <sup>th</sup> – 23 <sup>rd</sup>	Midterm Exam	- <b>Midterm Exam</b>	- No Assigned Readings/Homework

Week 9: October 26-30 <sup>th</sup>	Alcohol Awareness	- Sam Spady Video - Assign Assignment 5 - Journal 5	- <b>Assignment 5 (E-Chug Survey &amp; Reflection)</b>
Week 10: November 2 <sup>nd</sup> -6 <sup>th</sup>	Alcohol Seminar	- <b>Assignment 5 due</b> - Guest Speaker - Journal 6	- Read Ch. 3 – “Stress”
Week 11: November 9 – 13 <sup>th</sup>	Stress	- Stress Lecture Notes - Journal 7	- Read 1 of the 2 Mental Health Articles on Oncourse [provided by CAPS]
Week 12: November 16-20 <sup>th</sup>	Mental Health	- CAPS Presentation - Guest Speaker(s) - Journal 8	- Read Ch 6 – “STDs & Substance Abuse”
Week 13: November 23 <sup>rd</sup> – 27 <sup>th</sup>	NO CLASSES MEET	Thanksgiving Break	NO CLASSES MEET ☺
Week 14: November 30- December 4 <sup>th</sup>	Sexual Health	- Assign Final Paper - Guest Speaker(s) - Sex Bingo - Journal 9	- <b>Final Reflection Paper (50 pts)</b>
Week 15: December 7-11 <sup>th</sup>	☺ Final Class Session ☺	- <b>Final Paper Due!</b> - Health Behavior Survey - Qualitative Survey - Course Evaluations	- Good luck with Finals ☺

**P105: FOUNDATIONS OF FITNESS AND WELLNESS • FALL 2009 • LAB SERIES**

<b>Week/Date</b>	<b>In-class Activities</b>	<b>Homework/Reminders</b>
Week 1: August 31-Sept. 4th	- FWC Orientation & Center Policies - Bring student ID	- I.D Cards - Emergency & Policy Waivers - Equipment Introduction
Week 2: Sept. 7 <sup>th</sup> – 11 <sup>th</sup>	- Body Works Workshop #1 - Assign Body Works Reflection	- Body Works Reflection Paper -Don't forget to purchase your pedometer ☺ HPER 296 (cost is \$10)
Week 3: Sept. 14 <sup>th</sup> -18 <sup>th</sup>	- <b>Body Works Reflection due</b> - Personal Workout Plans/Cards - Equipment Introduction	- <u>Bring your pedometer to lab next week!</u>
Week 4: Sept. 21 <sup>st</sup> -25 <sup>th</sup>	- Pedometer Activity - <b>Assign Assignment 3</b>	- <b>Assignment 3 (Pedometer log and reflection)</b> - Pedometer should be purchased by this week! (HPER 296)
Week 5: Sept. 28 <sup>th</sup> – October 2 <sup>nd</sup>	- <b>Assignment 3 due [in LAB]</b> - Create fitness log - Components of Fitness	
Week 6: October 5-9 <sup>th</sup>	- Stations	
Week 7: October 12-16 <sup>th</sup>	- Fast Food Facts - Workout Day - Fitness log check up	
Week 8: October 19 <sup>th</sup> – 23 <sup>rd</sup>	-Dorm Workout Ideas -Fitness log check up	
Week 9: October 26-30 <sup>th</sup>	- Group Ex Ideas	
Week 10: November 2 <sup>nd</sup> -6 <sup>th</sup>	- Core Focus Routine	
Week 11: November 9 – 13 <sup>th</sup>	- Power Yoga/Pilates Video	
Week 12: November 16-20 <sup>th</sup>	- Stations	
Week 13: November 23 <sup>rd</sup> – 27 <sup>th</sup>	NO LABS MEET ☺	THANKSGIVING BREAK
Week 14: Nov.- December 4 <sup>th</sup>	- Body Works Workshop #2	- Use results for the final reflection paper
Week 15: December 7-11 <sup>th</sup>	- Last Lab Meeting - Course Evaluations	- No Homework

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**APPENDIX E**

Professional Resume

**Meagan Shipley**  
**University Address:**  
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Bloomington, IN 47401  
[mshiple@indiana.edu](mailto:mshiple@indiana.edu)

## **EDUCATION**

**MS Applied Sport Science** **Anticipated May 2010**  
Indiana University, Bloomington, Indiana  
Cumulative GPA 3.9/4.0  
Research Topic: Utilization Focused Public Health Evaluation of a Health and Wellness  
Intervention for College Freshmen  
Advisors: Dr. John Shea, Ph.D. and Carol Kennedy-Armbruster, M.S.

**BS Health Education and Physical Education** **May 2008**  
Indiana University, Bloomington, Indiana  
Overall GPA of 3.8/4.0

## **PROFESSIONAL EXPERIENCE AND TEACHING**

**Graduate Teaching Assistant** **8/2008-current**  
Indiana University, Bloomington, Indiana

- Academic Course Coordinator, Department of Kinesiology
- Associate Instructor, Department of Kinesiology

## **TEACHING RESPONSIBILITIES**

### **Undergraduate Teaching**

- Foundations of Fitness and Wellness Academic Course Coordinator **8/2008-current**
  - Aid in the interview and hiring processes of P105 instructors
  - Facilitate and cultivate a positive teaching environment
  - Refine P105 curriculum in collaboration with kinesiology representatives
  - Select textbook for course and organize course packet material
  - Construct weekly instructor meetings to review upcoming class material
  - Monitor and evaluate class teaching throughout and at the duration of semester
  - Assist with various research projects
- Methods of Personal Fitness Instruction (HPER P218) **8/2008-12/2008**
  - Introduce material and provide clarification on course topics
  - Aid students in the understanding of course material
  - Grade papers, projects, and quizzes

- Foundations of Fitness and Wellness (HPER P105) 8/2005-12/2007
  - Prepare and deliver lecture material
  - Aid students in the understanding of course material
  - Grade papers, quizzes, and exams

### **High School Teaching**

**1/2008-4/2008**

Bloomington High School South, Monroe County Community School Corporation,  
Bloomington, IN

- Health Education and Physical Education Teacher (student teaching experience)
  - Designed and implemented 10<sup>th</sup> grade health curriculum
  - Created weekly lesson plans focusing on various health topics
  - Monitored students with Individualized Education Plans (IEP's)
  - Instructed weight training class for physical education requirement

### **TEACHING CERTIFICATIONS**

- Indiana Teacher's License -- Secondary Health and Physical Education
- American Heart Association -- CPR and First Aid Certification

### **PUBLICATIONS**

#### **Abstracts**

1. **Shipley, M.**, Kennedy-Armbruster, C., Ona, F., Lohrmann, D., Schrag, M., Hornsby, W. (2009). The impact of a participatory learning approach within a health and wellness course for college freshmen. APHA Annual Meeting & Exposition. Philadelphia, PA.
2. Kennedy-Armbruster, C., **Shipley, M.**, Hornsby, W., Ona, F., & Schrag, M. (2009). Improving college wellness classes through integrating physical activity and health concepts. APHA Annual Meeting & Exposition. Philadelphia, PA.

### **ORAL PRESENTATION**

1. **Shipley, M.**, Kennedy-Armbruster, C., Ona, F., Lohrmann, D., Schrag, M., Hornsby, W. (2009). The impact of a participatory learning approach within a health and wellness course for college freshmen. APHA Annual Meeting & Exposition. Philadelphia, PA, November 7-11, 2009 (Oral Presentation).
2. Iruoje, T., & **Shipley M.** (2009). Get fit and stay well within a living-learning community. ACUHO-I LLP Conference. Columbus, OH, October 16-18, 2009 (Oral Presentation).

**COMMUNITY ACTIVITIES**

**Administrative Assistant** 6/2006-7/2009  
Indiana Men’s Soccer Camp, Bloomington, Indiana

**Parks & Recreation Sport Supervisor** 4/2005-current  
Bloomington, Indiana

**ACADEMIC AWARDS**

- Dean’s List (Fall 2003 – Fall 2007)
- Graduated with “Highest Distinction” (magna cum laude)
- Golden Key International Honor Society
- National Society of Collegiate Scholars

**REFERENCES**

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