

**ROLE-MODELING PERCEPTIONS AND HEALTH BEHAVIOR PATTERNS
OF COLLEGE STUDENTS IN HEALTH-RELATED MAJORS**

by

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A Thesis Submitted to the Graduate Faculty

In Partial Fulfillment

Of the Requirements for the Degree

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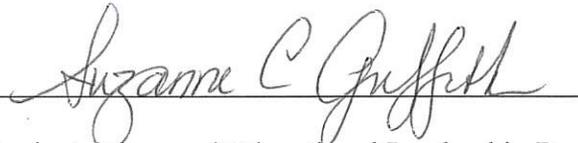
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May 16, 2015

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Graduate Faculty in Partial Fulfillment
of
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MASTERS OF SCIENCE IN EDUCATION



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Abstract

Students seeking degrees in Health and Human Performance (HHP) at the University of Wisconsin-Superior (UWS) are provided a curriculum which focuses on health, fitness, and disease prevention. There is an expectation for those in health-related professions to role model the positive health behaviors that they promote. The purpose of this study was to assess if HHP majors at UWS perceive themselves as future role-models and if so were they engaging in the health behaviors that they are being taught in their college curriculum. This study also examined if this perception changed over time. This study used a survey containing three different content areas: socio-demographics, health behaviors, and role-modeling to gain understanding of student health behavior practices and role-modeling attitudes. Results of this study indicate that HHP majors are aware of the importance of role modeling, more so at the junior and senior grade level, and they are practicing the positive health behaviors that they feel are important to role-model.

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Chapter 1. Introduction

Health professionals play an important role in building a foundation for the lifelong practice of health and fitness behaviors. Their audience spans from early childhood to the elderly. Their responsibilities range from teaching children the importance of physical activity and nutrition to educating, advising, and supporting those who are looking to make changes to their health later in life. Research shows that there is an expectation for those in the health profession to role model the positive health behaviors that they promote (Fraser, Leveritt, and Ball, 2013). To meet this expectation it is encouraged that students seeking careers in health fields adopt the healthy behaviors they are learning about in their studies (Frank, Breyan, and Elon, 2000). The level of engagement in health behaviors by college students has been studied extensively but one common finding has been the recommendation for a stronger health education curriculum and better access to health promotion information at the collegiate level.

Problem Statement

As aforementioned, research shows that there is an expectation for health professionals to role model a healthy lifestyle (Fraser et al., 2013). According to earlier studies (Ferrara, Nobrega, and Dulfan, 2013; Huang, Harris, Lee, Nazir, & Born, 2003; Racette, Deusinger, Strube, Highstein, & Deusinger, 2005) physical activity guidelines and daily nutrition recommendations are not being met by many college students leading to overweight and obesity. Obesity leads to an increased risk of future chronic health problems. Changes in lifestyle behaviors can greatly reduce the risk of obesity. “These results have important implications for future health professionals to be role models for their patients and further emphasize the importance for programs addressing healthy

lifestyle habits on college campuses, including maintenance of optimal body weight, healthy eating, and daily physical activity” (Ferrara et al., 2013, p. 563).

Rationale for the Study

The mission of the Health and Human Performance Department (HHP) at the University of Wisconsin-Superior (UWS) is “to provide students with a knowledge base, creating a positive attitude and lifelong skills in the seven dimensions of wellness: physical, intellectual, emotional, spiritual, career, social and environmental (i.e. personal health) as part of the liberal arts educational foundation” (University of Wisconsin-Superior, n.d.). The department prepares students seeking health related careers in the fields of Physical Education, Community Health Promotion, and Exercise Science by offering curriculum that focuses on health, fitness, and disease prevention.

In 2010 the Affordable Care Act (ACA) was signed. With the implementation of this act in 2014 the job opportunities for students seeking careers in health related fields have the potential to increase. One of the focus areas of the ACA is prevention. This includes the promotion of wellness and public health including disease prevention, nutrition, and increased physical activity to reduce the costs and other health related complications caused by obesity (United States Department of Health & Human Services, 2011). The HHP curriculum provides the knowledge base to prepare students for careers in the area of disease prevention. Melville and Cardinal (1997), suggest that students who engage in the healthy behaviors that they are taught in their curriculum might be more marketable when applying for these future positions.

This study expanded on previous research studies which examined health behavior patterns and role modeling attitudes of both students and health professionals.

These studies build a case for further exploration into health promotion education and its effectiveness on college campuses, more specifically in the areas of weight, nutrition, and physical activity (Ferrara et al., 2013). Given that UWS has 200 students majoring in the areas of health and wellness it seemed valuable to test out these behaviors and perceptions with these students across all grade levels to see if the health curriculum is working.

Research Question(s)

- 1) The primary question is: Do HHP majors at UWS perceive that they are or should be role models as professionals?
 - a. If so, are they maintaining a healthy Body Mass Index (BMI) through regular physical activity and proper nutrition?
 - b. Does this perception change over time?

It was hypothesized that the majority of HHP majors would engage in some sort of regular physical activity, however, it was not known the affect this would have on their BMI. The second hypothesis was that the majority of HHP majors would view themselves as being future role-models. Additionally, it was hypothesized that junior and senior level students would be more likely than freshman and sophomore level students to have this perception.

Nature of the Study

The objective of this study was to evaluate the reported personal health behaviors of college students pursuing health related degrees and compare them to their beliefs on role-modeling to see if they felt it important to “practice what they preach”. Their body mass index was also calculated looking for patterns between their reported health

behaviors and their weight. Their responses were compared to the standard norms for physical activity, recommendations for daily intake of fruits and vegetables, and BMI charts as according to the Centers for Disease Control and Prevention (CDC). The gathering and interpreting of this information helped to assess if students were applying what they were learning in their academic preparation about health, fitness, and disease prevention to their own lives.

Referenced Definition of Terms

Body Mass Index (BMI): a measure of body weight relative to height. BMI can be used to assess whether people are at a healthy weight, overweight, or obese. BMI is determined by dividing a person's body weight in kilograms by their height in meters squared (<http://definitionofwellness.com/wellness-dictionary/>).

Centers for Disease Control and Prevention (CDC): an agency of the federal Department of Health and Human Services. The CDC develops disease prevention and control, environmental health and health promotion, and educational activities designed to improve the health of people of the United States (<http://definitionofwellness.com/wellness-dictionary/>).

Credibility: the quality of being believed or accepted as true, real, or honest (<http://www.merriam-webster.com/dictionary/credibility>).

Health behavior: any activity undertaken by an individual for the purpose of promoting, protecting, or maintaining health (<http://definitionofwellness.com/wellness-dictionary/>).

Health professional: a person who helps in identifying or preventing or treating illness or disability (www.dictionary.com/healthprofessional).

Normal Weight: Normal Weight is having a BMI between 18.5 and 24.9. (<http://definitionofwellness.com/wellness-dictionary/>).

Obese: Obese is having a high amount of body fat; having a BMI of 30 or higher. (<http://definitionofwellness.com/wellness-dictionary/>).

Overweight: Overweight is being too heavy for one's height; having a BMI between 25 and 29. (<http://definitionofwellness.com/wellness-dictionary/>).

Perception: the way you think about or understand someone or something (<http://www.merriam-webster.com/dictionary/perception>).

Role model: a person whose behavior in a particular role is imitated by others (<http://www.merriam-webster.com/dictionary/rolemodel>).

Stadiometer: a device for measuring height that typically consists of a vertical ruler with a sliding horizontal rod or paddle which is adjusted to rest on the top of the head (<http://www.merriam-webster.com/medical/stadiometer>).

Transtheoretical Model of Health Behavior Change: theorizes that health behavior change involves progress through six stages of change: precontemplation, contemplation, preparation, action, maintenance, and termination (Prochaska and Velicer, 1997).

Assumptions, Limitations, and Delimitations

It was assumed that students would answer the survey questions truthfully and accurately based upon their personal experience. If students were enrolled in multiple

courses surveyed it was assumed that they would only complete the survey once. It was also assumed that they would complete the survey in its entirety.

One limitation of this study was the size of the population surveyed. There are only approximately 200 HHP majors at UWS and some chose not to participate in the study.

Delimitations of the study included participant population. The study was only being conducted with UWS students and did not include students from other universities seeking similar degrees. Finally, the study did not compare behaviors and attitudes of other populations such as professionals in the health field or other non-HHP majors.

This study surveyed students on personal health behaviors including physical activity, nutrition, cigarette smoking, and weight management. Other health risk factors such as drug use, alcohol consumption, stress, and risk taking behaviors could also be examined but were beyond the scope of the study.

Summary

This study was conducted for the purpose of evaluating HHP majors at UWS to see if their lifestyle behaviors matched their role modeling expectations as future health professionals. Their BMI was calculated to assess if they were aligning their health behaviors with their chosen profession. It assessed if students in this field were developing the health behaviors they were being taught in the HHP curriculum building on previous research which has shown that healthy health professionals are seen as being more credible role models.

Chapter 2. Review of Literature

Previous research studies have examined the affect that participation in healthy lifestyle behaviors (such as eating a well-balanced diet and daily exercise) has on overall personal health. Students majoring in health fields are taught a curriculum that aims to prepare them to be knowledgeable health professionals. The following chapter will guide the reader through a review of related literature beginning with an examination of the health behaviors of college students. In addition, the influence of health behaviors on BMI will be reviewed. Following this section, the relationship between perception of health and credibility will be discussed. This chapter will end with a review of what is understood about the importance of role modeling positive health behaviors by health professionals as well as students seeking careers in health fields.

Health-Related Behaviors of College Students

Many studies have been conducted on the health behaviors of college students. This section of the literature review will look specifically at studies that focused on health behaviors pertaining to the assessment of weight, dietary habits, and exercise levels of college students. Each study was unique in the population that it examined, however, similar results were found amongst the studies.

Research conducted by Huang et al. (2003) aimed to assess overweight and obesity rates among college students and contributing factors such as diet and exercise. The purpose of their study was to learn more about their health behavior patterns to assist in future disease prevention. To determine weight status, BMI levels were calculated using two different method based on participant age using self-reported height and weight. In their study the survey method was used. To assess diet, the survey measured

frequency of fruit, vegetable, and fiber intake. Physical activity was assessed by measuring frequency of exercise and strength training. Their study found 24% of college students surveyed to be overweight or obese. Findings also indicated that a high percentage of college students (69.4%) consumed fewer than five servings of fruits and vegetables per day. This suggested to the authors “an alarming trend of unhealthy diet that may play a significant role in future risk of disease” (p.85). Low numbers for physical activity were also reported with 16.1% of students reporting that they did not engage in any physical activity within a seven day span. According to the authors, the results of their study indicated that many college students do not engage in healthy lifestyle behaviors which put them at risk of developing future health problems. Given these findings the authors suggest that changes be made at the collegiate level when students are still learning about the importance of positive lifestyle choices.

In their study, Racette et al. (2005) looked more specifically into patterns of weight gain in college students during their freshman and sophomore years. Students were surveyed twice, once at the beginning of their freshman year and then again at the end of their sophomore year. To determine weight status, BMI levels were calculated based on height and weight measurements using a stadiometer and a balance scale. BMIs were then categorized based on the CDC’s growth charts. A survey method was used in their study. Exercise participation was assessed based on the five stages of the transtheoretical model of behavior change (precontemplation, contemplation, preparation, action, and maintenance). To assess diet, the authors measured frequency of fruit and vegetable intake as well as intake of fried and fast foods. The findings of this study indicated a weight gain in 70% of the students by the end of their sophomore year,

however, no correlations were found between changes in body weight and changes in exercise or dietary habits. According to the authors, the results of this show that dietary and exercise recommendations are not being met by freshman and sophomore college students which may contribute to future weight issues. Based on these findings the authors advise the implementation of stronger health promotion practices on college campuses.

Ferrara et al. (2013) also conducted research which looked into the lifestyle patterns of college students. Their research focused more specifically on the dietary and physical activity patterns of students in health-related majors compared to students declaring non-health related majors. They hypothesized that students in health-related majors would be healthier in general. Overall body composition was measured using height, weight, body fat, and waist and hip measurements. To determine weight status, BMI levels were calculated based on height and weight. Dietary and physical activity patterns were assessed by a questionnaire. Their findings indicated no significant differences in body composition, BMI levels, or physical activity levels between health majors and non-health majors, however students in health-related majors had better dietary habits than non-majors. Overall numbers indicated that 31% of total student participants were considered overweight or obese and only 23% ate the recommended daily servings of fruits and vegetables. The authors of this study conclude that health majors need to recognize the importance of role-modeling healthy behaviors. They also identify the need for better health education and promotion for all students.

In summary, the authors of all three of the studies discussed in this section found similar results which identified poor diet and low physical activity levels in college

students. It was also determined in all three studies that many college students are overweight or obese. The recommendations from these studies were similar in that they expressed the need for further education in the areas of health promotion, prevention, and intervention strategies at the college level.

Weight and Body Mass Index (BMI)

The CDC defines BMI as a number calculated from a person's weight and height. BMI is calculated by dividing weight in pounds by height in inches squared and multiplying by a conversion factor of 703. Once BMI is calculated it can then be interpreted into one of four categories (underweight, normal, overweight, obese). The following studies examine BMI levels in college students and the factors that may have an influence on it.

Research conducted by Brunt, Rhee, and Zhong (2008) looked for patterns in the types of foods consumed by college students within each BMI category. Participants were divided into one of four weight categories according to their BMI (underweight, healthy weight, overweight, obese). To determine weight status, BMI levels were calculated based on self-reported height and weight. Food consumption was identified by a diet variety questionnaire containing 42 items grouped into the following categories: all dairy, all meat, all meat alternatives, all vegetables, all fruits, all grains, and all snacks. Students indicated either yes they had eaten the item within the past three days or no they had not. Overall numbers indicated that 35% of total student participants were considered overweight or obese. Ninety-five percent of students reported consuming unhealthy snack foods. Findings indicated significant differences between BMI categories finding those who had a higher BMI to eat more meats and saturated fats and

those who had a lower BMI to eat more vegetables. Given these findings the authors suggest college students should be taught proper nutrition during their freshman year when they are learning about lifestyle changes and adjusting to life away from home.

When looking for predicting factors of BMI change among college students, Adams and Rini (2007) analyzed a number variables including diet, exercise, medication use, chronic conditions, and coping skills. Data used in their research had been previously gathered over the academic years of 1992-93 and 1993-94. Participants had their BMI calculated using height and weight measurements. Health behavior data was collected by completion of a health risk appraisal. The authors combined BMI data from each year and divided participants into three groups: BMI gain, no change, and BMI loss. Next they used the data from the health risk appraisal to determine if there were common variables within each of the BMI groups. There were no significant predictors identified for men. The authors found that there were several factors that influence the BMI of women including diet, stress, and ineffective coping strategies. The authors discussed the importance of weight loss interventions as students begin college since weight is more likely to increase with age.

Perception of Health and Credibility

Research shows that the personal health behaviors of health professionals have an effect on their credibility and motivational abilities. This section of the literature review will examine physical appearance and its influence on perception, motivation, and learning.

To examine the affect perceived health has on credibility, Fraser et al. (2013) solicited feedback from patients about their general practitioner's (GP) health status and

how they responded to the advice that they had received from them. The authors used a qualitative study method. Data was collected through phone interviews. Participants included patients who had previously received health advice from a GP. Interview questions inquired about their GP's physical appearance, state of health, personal health behaviors, and the advice the patient had received from them. Data collected was grouped into categories. The majority of participants perceived their GP to be generally healthy based on the following: appearance, absence of ill health, and discussions that they had with their GP about their health behaviors. Participants had a difference in opinion about whether or not their GP's weight would change how they responded to the advice they were given. One participant suggested that to her weight did not matter:

Well I actually thought he [the GP] was overweight but then I thought I'm here about my own weight not his weight. So whatever advice he did give me I took it on board because I was there for myself. (#12; Female, 48 years, BMI 30.1 kg/m²) (Fraser et al., p. 304)

Another participant stated that she would question the advice she was given by an overweight GP:

If the GP was grossly overweight you would be reluctant to follow their advice because you would think "if their advice was so good why hasn't it worked for you?" So that would make a big difference. (#13; Female, 49 years, BMI 29.8 kg/m²) (Fraser et al., p. 304)

According to the authors, patients appeared to be more confident in the advice they received from a healthy GP.

Frank et al. (2000) found similar results in their study which found physicians to be more credible when they are open with their patients about their own healthy habits. The setting for this study was the waiting room within a clinic. The study used a two-part questionnaire and a video. Prior to watching the video participants answered questions about their own health. Next they were shown one of two videos about health education. Both videos followed the same script; however, in the second video the physician was shown with both a bike helmet and an apple on her desk and at the end she disclosed for thirty seconds her personal health information. After watching the video participants completed the second part of the questionnaire which asked questions about the physician's health and credibility. According to the authors, "Viewers of the physician-disclosure video considered the physician to be generally healthier, somewhat more believable, and more motivating, both generally and specifically, regarding both exercise and diet" (p. 289). This response suggests that message delivery is just as important as the message itself. Given these findings, the authors recommend that educators promote the practice of engaging in healthy behaviors to their students so they in turn can share their personal health stories as professionals.

Dean, Adams, and Comeau (2005) explored the affect that physical appearance had on attitude and academic performance. Participants of their study included junior high physical education students aged 12-16 years. The study used an experimental research design and consisted of one physical education instructor who taught a six-week lesson about health-related fitness to two different groups of students. While teaching the first group the physical education instructor made no alterations to her body, appearing to be physically fit. For the second group of students the physical education instructor

altered her appearance by wearing a fat suit which made her look obese. The content was the same for both groups and included a physical activity lab. Students were tested on their fitness knowledge at the beginning of the six-week unit and again at the end. Following the unit they were also asked to complete a questionnaire about how they felt about their instructor. Results showed that students performed better on tests when their physical education teacher was physically fit. The authors suggest, “it is possible students have trouble valuing knowledge when they visually perceive that the instructor does not model the information presented” (p. 24). In contrast, the instructor’s physical appearance did not seem to have an influence on the students’ attitude toward the instructor.

Gold, Petrella, Angel, Ennis, and Woolley (2012) conducted a similar study which examined perceived physical appearance and knowledge of a physical educator. The study used an experimental research design. Participants were junior high physical education students aged 11-14 years. A survey was used to assess how the students viewed the physical appearance and knowledge of their physical educator. The survey consisted of four images. Each image consisted of a person with a different body type ranging from physically fit to obese. The students were then asked eight questions about physical educators and were told to circle the image that they believe best answered the question. Questions ranged from physical appearance and lifestyle to knowledge and role modeling. Findings of the study indicated that 93.8% of students thought that physical educators should be physically fit. A majority of students also believed that physically fit physical educators were better motivators and more knowledgeable about physical education than those who were overweight or obese. The authors concluded “it is

unlikely that students can be motivated to value fitness, an active lifestyle, and skillful performance when the message is delivered by a physical education teacher who is neither fit, active, nor highly skilled” (p. 101). It is encouraged by the authors that, given these findings, physical educators engage in positive lifestyle behaviors so they can be the role-models children expect them to be.

According to Melville and Cardinal (1997), being overweight can also put a person at a disadvantage when looking for a job. The purpose of their study was to assess if the physical appearance of a physical educator would influence the decision of hiring personnel. Participants included a group of people who were responsible for hiring physical education teachers. Participants were asked to review two hiring scenarios. The first scenario questioned if the participant would screen an overweight or obese individual from their finalist list. The second scenario questioned if the participant would hire someone with average grades who was physically fit over someone with above average grades who was slightly overweight. Results indicated that being overweight did have an influence on the participants of this survey. Nearly half (45.8%) of participants responded that they would screen an individual who was significantly overweight. Results also concluded that the majority of these participants would hire a candidate based on their physical fitness rather than on their academics. The authors suggest that students be made aware of these findings and also be encouraged to make changes in their lifestyles while they are still in school and prior to starting their job searching as it does appear to affect their chances of being hired.

Role-Modeling

The final section of this literature review will examine studies related to role modeling. Research indicates that role modeling positive health behaviors is recognized as being important by those in health professions.

Cardinal and Cardinal (2001) conducted a study to determine the value of role modeling amongst health, physical education, recreation, and dance (HPERD) professionals as well as college students enrolled in fitness related courses. Study participants were asked to rank 16 statements related to the role modeling expectations of those in HPERD professions according to their level of agreement using a Likert scale. Response categories ranged from strongly agree to strongly disagree. According to the authors, the statements receiving the highest rankings indicated that role modeling was seen as a “powerful teaching tool” for HPERD professionals followed by the indication that HPERD professionals should “practice what they preach” (p. 35). Statements receiving the lowest rankings indicated that neither students seeking HPERD degrees nor HPERD professionals should be required to pass an annual health-related physical fitness test. According to the authors there is “strong support for the concept of modeling physical-activity and fitness behaviors” but it was also noted that “when role modeling was defined in terms of actual participation in appropriate physical activity and fitness behaviors it received less support” (p. 38). Their research also found that a majority of participants (85.8%) agreed or strongly agreed that HPERD professionals who were role-models of health and fitness increase their employability. The authors noted a disconnect between participant attitudes on role-modeling behaviors and their attitudes towards actual engagement in those same behaviors.

Black, Marcoux, Stiller, Xianggui, and Gellish (2012) examined health promotion behaviors of both students and professionals. In their study they evaluated personal health behaviors of physical therapy professionals to those of physical therapy students and compared them their beliefs on role modeling. Their study followed a descriptive cross-sectional survey research design. Participants completed three questionnaires in the content areas of socio-demographics, personal health behaviors, and role modeling. The health behaviors assessed in their survey included physical activity levels, fruit and vegetable consumption, smoking, and weight management. Participants responded to health behavior questions based on the length of time that they had been doing an activity or when they intended to start. Role modeling attitudes were measured using a scale from 1 to 5 based on the participant level of agreement with a given statement with 1 indicating that the participant strongly disagreed with the statement provided and 5 indicating that the participant strongly agreed with the statement provided. Data collected was analyzed using SPSS looking for frequencies in health behaviors and agreement with role-modeling statements.

Black et al. (2012) used the transtheoretical model of behavior change to group the responses to the health behavior questions. The five stages include: precontemplation, contemplation, preparation, action, and maintenance. Results indicated that a majority of participants, both physical therapy professionals and physical therapy students, were in either the action or maintenance stage engaging in healthy lifestyle behaviors such as maintaining a healthy weight, eating healthy, and staying physically active. A total of 99.4% of participants in their study had never smoked or had

recently quit. According to the authors there was no significant difference between physical therapy professionals and physical therapy students in these areas.

In the area of role-modeling, Black et al. (2012) found that both physical therapy professionals and physical therapy students valued this practice with a majority of participants agreeing with all ten role-modeling statements. Physical therapy students appeared to have a better understanding of the importance of role-modeling as their percentage of agreement was higher than that of physical therapy professionals. It was suggested by the authors that this may be due to enhancements in college curriculum.

Summary

This literature review has looked at research that examined the effects of health behavior choices on weight and BMI. It has also provided evidence that perceived physical appearance has an effect on credibility as well as employability. Finally, it was shown in these studies that role modeling positive health behaviors was seen as being an important factor for those in health related fields. These findings provide support for the questions being asked in this environment: Do HHP majors at UWS perceive that they are or should be role models as professionals? If so, are they maintaining a healthy BMI through regular physical activity and proper nutrition? Does this perception change over time?

Chapter 3: Methodology

Research shows that there is an expectation for those in the health profession to role model the positive health behaviors that they promote (Fraser et al., 2013). This study assessed the health behaviors and role-modeling attitudes of students majoring in the area health and human performance at the University of Wisconsin-Superior (UWS). It looked into whether or not these students perceived themselves as future role models within their profession. It also examined if students in this field were developing the health behaviors they were being taught in the HHP curriculum by assessing if they were maintaining a healthy BMI through regular physical activity and proper nutrition.

It was hypothesized that the majority of HHP majors would view themselves as being future role models. Additionally, it was hypothesized that the majority of HHP majors would engage in some sort of regular physical activity; however, it was not known what affect this will have on their BMI. Finally, it was hypothesized that junior and senior level students would be more likely than freshman and sophomore level students to meet daily recommendations for exercise and nutrition intake.

Research Design

This study utilized a descriptive, quantitative, cross-sectional, survey research design. According to Leedy and Ormond (2013) using a survey tool allows the researcher to gather information about a group of people by asking them questions and tabulating their answers to learn more about a specific population. By using a cross-sectional study the researcher was able collect all of the data needed for the study at one time.

This research design was used in a similar study where Black et al. (2012) compared the personal health behaviors and role modeling attitudes of physical therapy professionals to those of physical therapy students.

Participants

Participants for this study were drawn from the UW-Superior student population. The demographic makeup of the campus for the 2014-2015 year is as follows: 83% White, 6% International, with the remainder of the student population being of American Indian/Alaskan Native, Asian, African American/Black, Hispanic, and Native Hawaiian or Other Pacific Islander ethnicity. Gender overall is skewed with 61% of the student population consisting of women and only 39% consisting of men. Half of the students (50%) come from Wisconsin, 44% from other states and Territories, and 6% are International. The average age of the undergraduate population is 23 and 31% are age 25 or older. Forty-one percent of students are low-income (University of Wisconsin-Superior, n.d.).

Participants in this study included college students aged 17 years old and older who were enrolled in HHP courses at UWS. The HHP Department has approximately 200 majors. A convenience sampling was used. The researcher collected data from students in HHP 110, HLTH 264, HLTH 366, and HLTH 469 to reach the greatest number of students at different stages in the curriculum. Their participation was voluntary. Surveys completed by non-HHP majors were excluded. Surveys that were not completed in their entirety were also excluded.

Instrumentation

Participants were informed of their rights as a research subject prior to data collection (Appendix A). Voluntary participants were then administered a survey containing three different content areas: socio-demographics (which asked participants to indicate their age, weight, height, gender, major, and year in school); level of engagement in specific health behaviors; and attitudes role-modeling (Appendix B). The survey was adapted from one used in previous research done by Black et al. (2012). Their survey was reviewed by content experts and pilot tested for face validity and test-retest reliability.

Health Behavior Questionnaire. The health behavior section of the survey consisted of four questions. Participants were asked one question in each of the following content areas: physical activity, fruit and vegetable consumption, weight management, and smoking. A sample question included “Do you engage in regular physical activity?” Participants then selected their answers based on the length of time that they had been doing that activity or when they intended to start. These questions aimed to measure the participants’ overall health status as compared to the standard norms for physical activity, the recommendations for daily intake of fruits and vegetables, and the BMI scale as according to the CDC.

Role-Modeling Attitude Questionnaire. The role-modeling section of the survey consisted of ten statements which aimed to measure participants’ attitudes towards role modeling. A sample question included “Maintaining a healthy weight is a desirable and recommended behavior for health professionals.” Participants indicated their level of agreement with each statement using the following scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Terminology in this section of

the survey was modified to address the attitudes of HHP majors specifically as future health professionals. For example, “physical therapy professionals” was changed to “health professionals.”

Procedure

Prior to data collection IRB approval was granted for the study (Appendix C). Participants were contacted in their classes where each instructor had agreed to allow class time to conduct this research. The researcher explained the purpose of the study and distributed a written handout of Informed Consent (Appendix A). The researcher read the information on the form to the participants. The form included a statement of voluntary participation which explained that participants were not required to sign the form but by their completion of the survey they were giving their consent. Each voluntary participant was then given a survey (Appendix B). Participants were told not to write their names or any other identifying information on the questionnaires so all information would remain confidential. The researcher explained how to complete the survey and participants were informed that they may ask questions at any time. Once the surveys had been completed participants placed them in a designated envelope at the front of the classroom. The envelope was sealed by the last participant to complete the survey who then handed it to the researcher once it had been sealed.

Analysis

Data obtained from the survey was analyzed using both Microsoft Excel and Statistical Package for the Social Sciences (SPSS) statistic software. Data sets were reviewed for frequency of responses to role-modeling questions as well as health behavior questions. Results from the responses of the lower level students (freshman and

sophomores) were then compared to those of the upper level students (juniors and seniors). Information gathered from the data was used to enhance understanding of how students viewed role-modeling and if they were “practicing what they preach” by making their own healthy behavior choices.

Student BMIs were calculated based on their height, weight, and age and placed into BMI categories according to CDC charts. The CDC BMI calculator for adults was used for students aged 20 years old and older. For students aged 17-19 the CDC BMI calculator for children and teens was used.

Summary

A survey was developed to assess if undergraduate HHP students recognized the importance of role-modeling within the health profession. It also examined if students in this field were developing the health behaviors they were being taught in the HHP curriculum.

Chapter 4: Results

The purpose of this study was to assess if HHP majors at UWS perceive that role modeling is an important quality for health professionals to have and if so were they applying what they are taught about health, fitness, and disease prevention in their academic curriculum to their own lives. In addition, this study aimed to examine if overall student BMI levels were consistent with overall reported student health behaviors. This study also investigated whether or not student perception of role modeling as health professionals changes over time. This chapter will present the data and key findings obtained through a survey of undergraduate HHP majors at UWS.

The survey used was adapted from one used in previous research done by Black et al. (2012). (See Appendix B) Their survey was reviewed by content experts and pilot tested for face validity and test-retest reliability. It asked questions which focused on three content areas: socio-demographics, health behaviors, and role-modeling. The survey was given IRB approval (see Appendix C) and consent forms were provided to each participant prior to survey distribution (see Appendix A).

A total of 157 students participated in the survey. Out of the 157 surveys, 106 were used as part of the study. The 51 surveys not included in the study consisted of 38 non-majors, eight undecided majors, and five surveys that were incomplete. Out of the 106 surveys that were used respondents included 43 freshman and sophomore students (41%) and 63 junior and senior students (59%).

Survey Results

Research question one aimed to assess the extent that HHP majors at UWS perceive the importance of role modeling as health professionals. The third section of the survey addressed this question.

Table 1 represents the level of agreement or disagreement students had to statements about health professionals and role-modeling. Response categories ranged from 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. A total of ten role-modeling questions were asked. The majority of respondents stated that they strongly agree to each of the 10 questions.

A total of 62.3% percent of students strongly agreed that role-modeling is a powerful teaching tool for health professionals and 63.2% strongly agreed that health professionals should practice what they preach.

Survey questions three and seven aimed to assess student attitudes concerning physical activity. A total of 52.8% of students strongly agreed that involvement in CDC-recommended levels of regular physical activity is a desirable and recommended behavior for health professionals and 67.0% strongly agreed that it is important for health professionals to role-model CDC-recommended levels of regular physical activity.

Survey questions four and nine aimed to assess student attitudes concerning fruit and vegetable consumption. A total of 41.5% of students strongly agreed that eating five or more servings of fruits and vegetables a day is a desirable and recommended behavior for health professionals and 43.4% strongly agreed that it is important for health professionals to be role models for eating five or more servings of fruits and vegetables a day.

Survey questions five and ten aimed to assess student attitudes on weight management. A total of 59.4% of students strongly agreed that maintaining a healthy weight is a desirable and recommended behavior for health professionals and 63.2% strongly agreed that it is important for health professionals to role model maintaining a healthy weight.

Survey questions six and eight aimed to assess student attitudes on smoking. A total of 76.4% of students strongly agreed that abstaining from smoking is a desirable and recommended behavior for health professionals and 78.3% strongly agreed that it is important for health professionals to role model non-smoking behavior.

Table 1

Attitudes on Role Modeling

Role-Modeling Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1. Role modeling is a powerful teaching tool for health professionals.	1	0	6	33	66	62.3%
2. It is not enough to simply stay current in the field; health professionals must also “practice what they preach.”	0	2	4	33	67	63.2%
3. Involvement in CDC-recommended levels of regular physical activity is a desirable and recommended behavior for health professionals.	0	2	7	41	56	52.8%
4. Eating 5 or more servings of fruits and vegetables a day is a desirable and recommended behavior for health professionals.	2	1	15	44	44	41.5%
5. Maintaining a healthy weight is a desirable and recommended behavior for health professionals.	2	0	5	36	63	59.4%
6. Abstaining from smoking is a desirable and recommended behavior for health professionals.	2	0	7	16	81	76.4%
7. It is important for health professional to role model CDC-recommended levels of regular physical activity.	1	1	7	26	71	67.0%
8. It is important for health professionals to role model non-smoking behavior.	1	1	4	17	83	78.3%
9. It is important for health professionals to be role models for eating 5 or more servings of fruits and vegetables a day.	1	1	16	42	46	43.4%
10. It is important for health professionals to role model maintaining a healthy weight.	1	1	8	29	67	63.2%

Research question two looked into the extent that HHP majors at UWS practiced healthy behaviors and if these health behaviors had an effect on BMI levels. The second section of the survey addressed the first part of this question.

Table 2 represents the level at which students engaged in healthy behaviors including physical activity, fruit and vegetable consumption, smoking, and weight management. A total 89.6% of students responded that they engaged in regular physical activity and that they had been for more than six months. Student responses were divided on fruit and vegetable consumption. A total 35.8% of students responded that they do eat five or more servings of vegetables a day and have done so for longer than six months. The majority of students (39.6%) reported that they do not eat five or more servings of fruits and vegetables a day but intend to start within the next 30 days. Of the 106 respondents, 102 (96.2%) responded that they have never smoked or that they have quit smoking for more than six months. A total of 81.1% of students responded that they believe that they maintain a healthy weight and have done so for more than six months.

Table 2

Health Behaviors

Physical Activity	Frequency	Percent
Yes, and I have been for more than 6 months.	95	89.6
Yes, and I have been for less than 6 months.	8	7.5
No, but I intend to start within the next 30 days.	2	1.9
No, but I intend to start within the next 6 months.	0	0
No, and I do not intend to start within the next 6 months.	1	.9
Fruit and Vegetable Consumption	Frequency	Percent
Yes, and I have done so for longer than 6 months.	38	35.8
Yes, and I have done so for less than 6 months.	5	4.7

No, but I intend to start within the next 30 days.	42	39.6
No, but I am seriously considering to start within the next 6 months.	18	17.0
No, and I am not seriously considering to start within the next 6 months.	3	2.8
Smoking	Frequency	Percent
I have never smoked, or I have quit smoking for more than 6 months.	102	96.2
Yes, but I am in the process of giving up smoking.	1	.9
Yes, but I intend to quit smoking within the next 30 days.	0	0
Yes, but I intend to quit smoking within the next 6 months.	3	2.8
Yes, and I do not intend to quit smoking in the next 6 months.	0	0
Weight Management	Frequency	Percent
Yes, and I have done so for more than 6 months.	86	81.1
Yes, and I have done so for less than 6 months.	5	4.7
No, but I intend to take action within the next 30 days.	14	13.2
No, but I intend to take action within the next 6 months.	1	.9
No, and I am not seriously considering to take action within the next 6 months.	0	0

To answer the second part of research question number two student BMIs were calculated based on their height, weight, and age and placed into BMI categories according to CDC charts. The CDC BMI calculator for adults was used for students aged 20 years old and older. For students aged 17-19 the CDC BMI calculator for children and teens was used. The difference in calculation between the two charts included age. Since birthdate was not part of the survey the dates of April 1st was used. The date of October 1st was used as the date of measurement.

Table 3 shows the four categories of body mass index types: underweight, normal, overweight, and obese. The majority of students (70.8%) fell into the normal weight category. A total of 25 students (23.6%) fell into the overweight category. Six students

(5.7%) fell into the obese category. There were no students who fell into the underweight category.

Table 3

Body Mass Index (BMI)

BMI Category	Frequency	Percent
Underweight	0	0
Normal	75	70.8
Overweight	25	23.6
Obese	6	5.7

The third research question sought to explore if student perception of role modeling changes over time. To answer this question two different areas were reviewed: changes in health behaviors and changes in role modeling attitudes over time. Table 4 represents level of student engagement in health behaviors based on year in school. Group 1 represents lower level students (freshman and sophomores). Group 2 represents upper level students (juniors and seniors). All 43 students from Group 1 (100%) and 82.5% of students from Group 2 responded that they engaged in regular physical activity and that they had been doing so for more than 6 months. A majority of students, 34.9% from Group 1 and 42.9% from Group 2, responded that they do not eat 5 or more servings of vegetables a day but intend to start within the next 30 days. Overall, 97.7% of students from Group 1 and 95.2% of students from Group 2 responded that they have never smoked or that they have quit smoking for more than 6 months. A total of 81.4% of students from Group 1 and 81.0% of students from Group 2 responded that they believe that they maintain a healthy weight and have done so for more than 6 months.

Table 4

Health Behaviors by Year in School

Physical Activity	Group	Frequency	Percent
Yes, and I have been for more than 6 months.	Group 1	43	100
	Group 2	52	82.5
Yes, and I have been for less than 6 months.	Group 1	0	0
	Group 2	8	12.7
No, but I intend to start within the next 30 days.	Group 1	0	0
	Group 2	2	3.2
No, but I intend to start within the next 6 months.	Group 1	0	0
	Group 2	0	0
No, and I do not intend to start within the next 6 months.	Group 1	0	0
	Group 2	1	1.6
Fruit and Vegetable Consumption	Group	Frequency	Percent
Yes, and I have done so for longer than 6 months.	Group 1	14	32.6
	Group 2	24	38.1
Yes, and I have done so for less than 6 months.	Group 1	1	2.3
	Group 2	4	6.3
No, but I intend to start within the next 30 days.	Group 1	15	34.9
	Group 2	27	42.9
No, but I am seriously considering to start within the next 6 months.	Group 1	11	25.6
	Group 2	7	11.1
No, and I am not seriously considering to start within the next 6 months.	Group 1	2	4.7
	Group 2	1	1.6
Smoking	Group	Frequency	Percent
I have never smoked, or I have quit smoking for more than 6 months.	Group 1	42	97.7
	Group 2	60	95.2
Yes, but I am in the process of giving up smoking.	Group 1	0	0
	Group 2	1	1.6
Yes, but I intend to quit smoking within the next 30 days.	Group 1	0	0
	Group 2	0	0
Yes, but I intend to quit smoking within the next 6 months.	Group 1	1	2.3
	Group 2	2	3.2
Yes, and I do not intend to quit smoking in the next 6 months.	Group 1	0	0
	Group 2	0	0
Weight Management	Group	Frequency	Percent
Yes, and I have done so for more than 6 months.	Group 1	35	81.4
	Group 2	51	81.0
Yes, and I have done so for less than 6 months.	Group 1	3	7.0
	Group 2	2	3.2
No, but I intend to take action within the next 30 days.	Group 1	3	11.6
	Group 2	9	14.3
No, but I intend to take action within the next 6 months.	Group 1	0	0
	Group 2	1	1.6
No, and I am not seriously considering taking action within the next 6 months	Group 1	0	0
	Group 2	0	0

Table 5 shows the level of agreement or disagreement students had to statements about health professionals and role-modeling. Responses are divided into two groups based on year in school. Group 1 represents lower level students (freshman and sophomores). Group 2 represents upper level students (juniors and seniors). Overall, Group 2 percentages were higher than Group 1 percentages for each of the ten questions asked. The majority of both Group 1 and Group 2 responded that they either agree or strongly agree to each of the 10 questions. Questions 1, 5, and 8 were ranked highest by Group 1 with 90.7% of students responding that they either agreed or strongly agreed to each of the three questions. Question 2 was ranked highest by Group 2 with 98.4% of students responding that they either agree or strongly agree that it is not enough to simply stay current in the field; health professional must also “practice what they preach.”

Table 5

Role Modeling Attitudes by Year in School

Role-Modeling Statement	Group	Agree or Strongly Agree	
		Frequency	Percent
1. Role modeling is a powerful teaching tool for health professionals.	Group 1	39	90.7
	Group 2	60	95.2
2. It is not enough to simply stay current in the field; health professionals must also “practice what they preach.”	Group 1	38	88.4
	Group 2	62	98.4
3. Involvement in CDC-recommended levels of regular physical activity is a desirable and recommended behavior for health professionals.	Group 1	36	83.7
	Group 2	61	96.8
4. Eating 5 or more servings of fruits and vegetables a day is a desirable and recommended behavior for health professionals.	Group 1	33	76.7
	Group 2	55	87.3
5. Maintaining a healthy weight is a desirable and recommended behavior for health professionals.	Group 1	39	90.7
	Group 2	60	95.2
6. Abstaining from smoking is a desirable and recommended behavior for health professionals.	Group 1	36	83.7
	Group 2	61	96.8
7. It is important for health professional to role model CDC-recommended levels of regular physical activity.	Group 1	37	86.0
	Group 2	60	95.2
8. It is important for health professionals to role model non-smoking behavior.	Group 1	39	90.7
	Group 2	61	96.8
9. It is important for health professionals to be role models for eating 5 or more servings of fruits and vegetables a day.	Group 1	34	79.1
	Group 2	54	85.7
10. It is important for health professionals to role model maintaining a healthy weight.	Group 1	37	86.0
	Group 2	59	93.7

Chapter 5. Discussion

The “practice what you preach” belief has been researched in a variety of different ways from the study of students to professionals in their given field. Previous research has found role-modeling to be an important factor in terms of credibility (Dean et al., 2005; Frank et al., 2000; Fraser et al., 2013; Gold et al., 2012). When research has been focused on college students in general it has been discovered that students in both health and non-health related majors are not necessarily practicing positive health behaviors. These studies have suggested that health curriculum at the collegiate level be strengthened to address this concern. This study questioned Health and Human Performance majors at the University of Wisconsin-Superior to assess if they, as future health professionals, found it important to “practice what they preach” in terms of role-modeling and if so, were they engaging in the positive health behaviors as their college curriculum suggests. The research questions were:

- 2) The primary question is: Do HHP majors at UWS perceive that they are or should be role models as professionals?
 - a. If so, are they maintaining a healthy Body Mass Index (BMI) through regular physical activity and proper nutrition?
 - b. Does this perception change over time?

A survey was distributed to students in six different HHP courses half of which were lower level (100-200) courses and the other half of which were upper level (300-400) courses. One hundred six HHP students participated in the survey, representing majors in the areas of Physical Education, Community Health, and Exercise Science.

Participants included freshmen, sophomores, juniors, and seniors. The survey consisted of questions related to three content areas: socio-demographics, health behaviors, and role-modeling.

The sample in this study was limited due to the small size of the school and inability to reach a larger number of majors. It should not be used to generalize a whole population.

Discussion

The overall findings of this study support previous research conducted in the health field (Black et al., 2012; Cardinal & Cardinal, 2001) that both health professionals and future health professionals do recognize the importance of role-modeling positive health behaviors. However beliefs on actual engagement in health behaviors varied within these studies.

1. Do HHP majors at UWS perceive that they are or should be role models as professionals?

Students were asked to rate their level of agreement or disagreement to 10 statements about health professionals and role-modeling. Figure 1 below represents student responses to each of the ten questions. Responses of “strongly agree” and “agree” were combined into one category “agree or strongly agree”. The majority of respondents stated that they agree or strongly agree to each of the 10 questions. Similar studies have been conducted asking health professionals to rank role-modeling statements (Black et al., 2012; Cardinal & Cardinal, 2001). Black et al. (2012) found that physical therapists and physical therapy students share the similar beliefs on role-modeling. In their study they used the same 10 role-modeling statements but used the term “physical

therapy professionals” instead of “health professionals” and also found that the majority of respondents agreed to all 10 role-modeling statements. Cardinal and Cardinal (2001) conducted a survey similar to the one used in this study but it focused more on physical activity and compared HPERD professionals to college students majoring in those health related areas (health, physical education, recreation, and dance). Cardinal and Cardinal concluded that the role-modeling attitudes and beliefs of the respondents did not seem to match their attitudes and beliefs on that actual engagement in these health behaviors. This seems to raise the question again about whether or not health professionals actually do practice what they preach.

In this study students appeared to agree that role-modeling a non-smoking behavior was most important to them. Questions six and eight aimed to assess student attitudes on this particular health behavior. A total of 91.5% of students agreed or strongly agreed that abstaining from smoking is a desirable and recommended behavior for health professionals and 94.3% agreed or strongly agreed that it is important for health professionals to role model non-smoking behavior.

Similar results were found in research conducted by Black et al. (2012). In their study they found that a total of 92.1% of students agreed or strongly agreed that abstaining from smoking is a desirable and recommended behavior for health professionals.

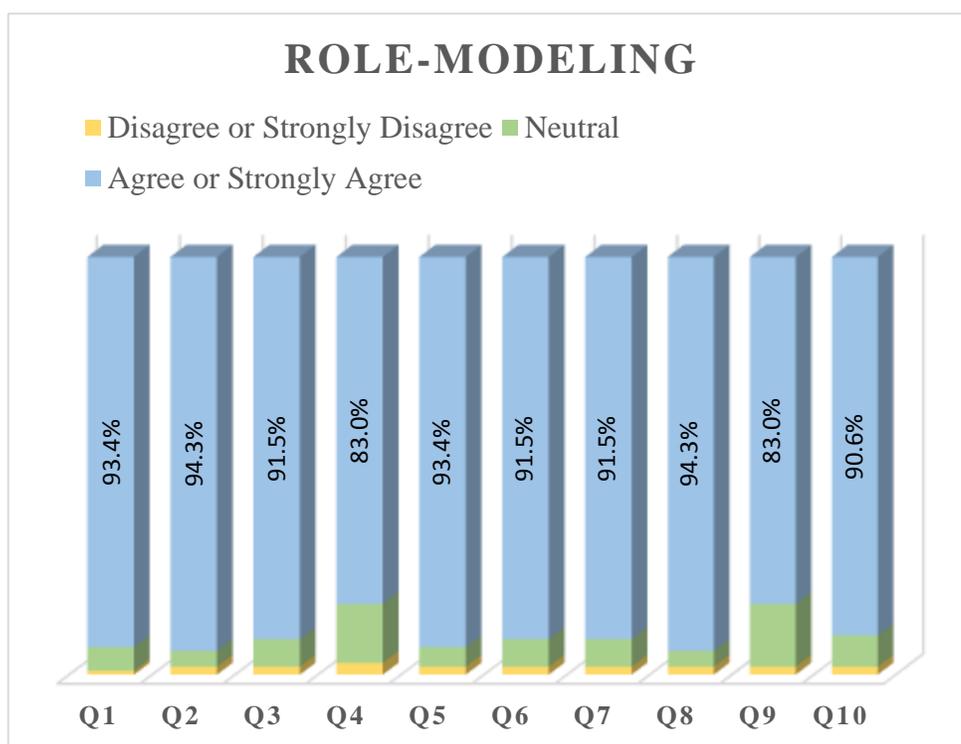
Black et al. (2012) suggested that those behaviors receiving the highest level of agreement appeared to be more visual characteristics and maybe that was why students felt that they were more important to role model. The results of this survey appear to agree with that idea as students felt consuming fruits and vegetables to be the least

important health behavior to role model and non-smoking to be the most important health behavior to role model.

This research suggests that HHP majors at UW-Superior do recognize the importance of role-modeling within the health profession.

Figure 1

Attitudes on Role Modeling



2. If so, are they maintaining a healthy Body Mass Index (BMI) through regular physical activity and proper nutrition?

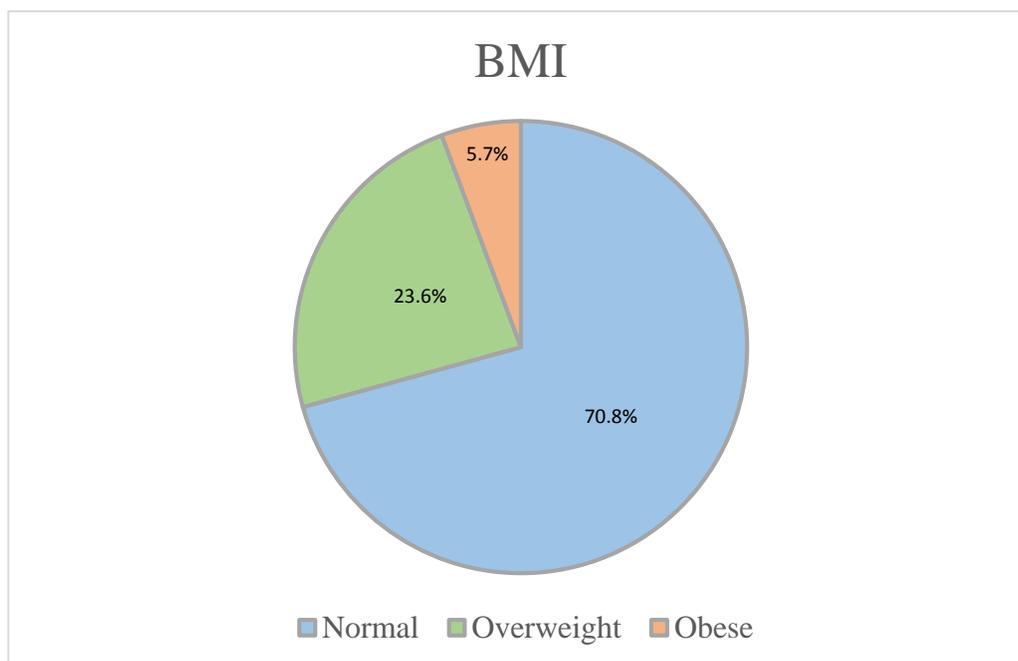
As shown in Figure 2 the majority of HHP students have a BMI that falls within the normal weight category. However, 29.3% are still considered overweight or obese.

Previous research conducted by Ferrara et al. (2013) found that 31% of college students in general were considered overweight or obese, however in their study students in health-related majors appeared to be less overweight or obese. They also appeared to eat more fruits and vegetables. This was not true with physical activity. Huang et al. (2003) also found similar results in their study of college students with 24% being considered overweight or obese. Both studies (Ferrara et al., 2013; Huang et al., 2003) suggested that these results may be contributed to diet and lack of physical activity.

This research suggests that the majority of HHP majors (70.8%) maintain a healthy weight; however there is still room for improvement.

Figure 2

Body Mass Index (BMI)



The act of role-modeling has been seen as an important part of the health profession, however research shows that actual engagement in positive health behaviors

does not appear to be as valued. This is concerning as heart disease continues to be the leading cause of death (Centers for Disease Control and Prevention, 2014). According to the CDC, obesity, poor diet, and physical inactivity are all contributing factors to heart disease.

One-hundred two out of 106 students (96.2%) responded that they have never smoked, or have quit smoking for more than six months. These results appear to agree with student responses to the role-modeling questionnaire where the majority of students agreed or strongly agreed that it is important for health professionals to role model a non-smoking behavior.

When assessing consumption of fruits and vegetables this research found that only 35.8% of students were currently meeting the daily recommendations of five or more servings a day. These results also appear to agree with students responses to the role-modeling questionnaire where students ranked questions four and nine, both having to do with role-modeling the daily consumption recommendations of fruit and vegetables, last on the list. These findings are consistent with those of Ferrara et al. (2013) who found that 23% of college students consumed less than five serving of fruits and vegetables a day and Huang et al. (2003) who discovered that a strong majority of college students in their study (69.4%) consumed less than five servings of fruits and vegetables a day.

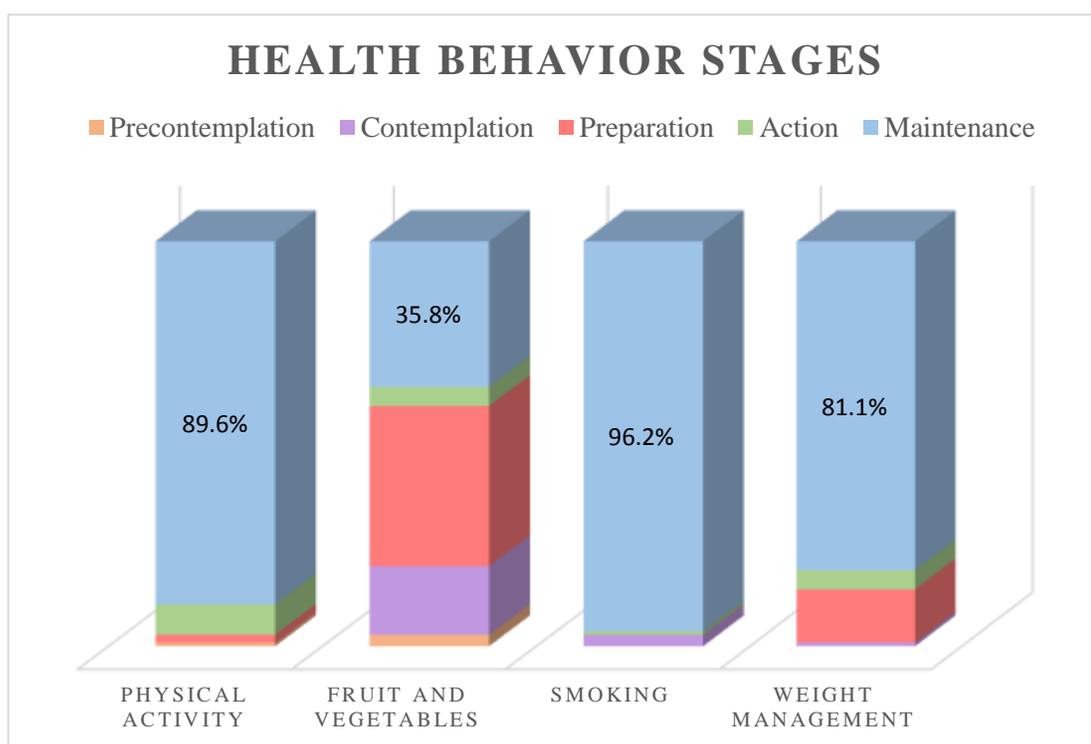
These findings appear to agree with the conclusions put forth by both Black et al. (2012) and Cardinal and Cardinal (2001). Black et al. suggested that students were more apt to engage in health behaviors that appear to be more visual such as smoking and maintaining a healthy weight versus non-visual health behaviors such as fruit and

vegetable consumption and physical activity. Cardinal and Cardinal suggested that health professionals and students in health fields appear to “talk the talk” but do not necessarily “walk the walk”.

This research suggests that the majority of HHP students do engage in the health behaviors that they feel are important to role model but do not necessarily engage in those they did not feel are as important to role-model at the recommended levels.

Figure 3

Health Behavior Stages



3. Does this perception change over time?

Data from this survey suggest students develop a stronger awareness of the importance of role-modeling during their junior and senior years. Black et al. (2012) found that differences in role-modeling attitudes between physical therapy students and

physical therapists were likely due to enhancements in curriculum. When comparing these two studies it could be that HHP students are also receiving a stronger, possibly more detailed curriculum in their upper level courses. Findings of this study do indicate, however, that although upper level students have a better understanding of the importance of role-modeling they are not necessarily engaging in those health behaviors more than lower level students.

Recommendations

The majority of research studies that have been conducted on college students to assess their health behaviors have had the same conclusion: something must be done at the collegiate level to enhance student awareness of the importance of positive health practices due to current obesity rates. In their college years, students appear to be more accepting of change and are more apt to make the necessary changes towards a more positive lifestyle. This study was conducted to see if the curriculum of the HHP department at UWS is preparing students to be future role-models by providing them with a foundation in health, fitness, and disease prevention. It was also assessed if these students are in turn applying this knowledge base to their own lives.

Given these findings it is recommended that more research be conducted in the area of college curriculum, specifically in the area of health promotion. This study used a small sample of HHP students from one university. To strengthen this research health majors from a variety of different universities could be studied to look for health behavior patterns and areas of concern. It is also suggested that, once identified, the curriculum pertaining to these areas of concern be studied. Curriculum assessment should include courses offered within a given degree as well as the learning goals and objectives

identified within each of those courses. Course assessment data should also be reviewed to see if the curriculum is working efficiently and effectively. Other departments, such as Health Services, which provide information or materials to students involving student health or health promotion could also be surveyed.

It was noticed in this study that health behaviors appearing to be less visual, such as fruit and vegetable consumption, were practiced the least by HHP students. Behaviors such as these play an important role in overall health and may need to be emphasized more within the curriculum. Another area that could be investigated is accessibility of fruits and vegetables to college students.

This research focused on four specific health behaviors: physical activity, fruit and vegetable consumption, smoking, and weight management. Different health behaviors could be assessed such as drug use, alcohol consumption, stress, and risk-taking activities as these are all behaviors that may have an influence on a health professional's perceived credibility.

Summary

The purpose of this study was to assess if HHP majors at UWS perceive themselves as future role-models and if so are they engaging in the health behaviors that they are being taught in their college curriculum. First a review of the literature built the case for this being an important area to study. Results of this study indicate that HHP majors are aware of the importance of role modeling, more so at the upper level, and they are practicing the positive health behaviors that they feel are important to role-model.

Based on these results this study recommends that faculty in the HHP department work to strengthen the health curriculum to make it even more effective. It appears that

HHP majors for the most part are “practicing what they preach” however there are areas that need improvement. The HHP curriculum should be further reviewed and assessed to make sure that learning objectives are being met and students are learning the value of practicing both visual and non-visual health behaviors.

It is also recommended that more opportunities be made available for upper level students to mentor lower level students. It is hypothesized that this will not only help improve knowledge and awareness at the lower level but it will also allow the upper level students the opportunity to apply what they are learning in their courses for better understanding and strengthen the practice of healthy behaviors.

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Appendix A: Informed Consent

1. Purpose:

The purpose of this survey is to study the personal health behaviors of college students and their attitudes on role-modeling. The results are intended to help assess if students are applying what they are learning in their courses about recommended health behaviors to their own lives.

2. Procedure:

You will be given a survey and asked to volunteer to answer the questions about your personal health behaviors and attitudes on role-modeling behaviors. If you have completed the survey in another class please do not complete a second one. Doing so will cause inaccuracies in the data and may negatively affect the outcome of the study. **Please do not write your names or any other identifying information on the survey.** You may ask questions at any time during the completion of the survey. Please complete the survey in its entirety. Surveys that are not answered completely will not be included in the study. After completing the survey, please place it in the designated envelope at the front of the room. The envelope should be sealed by the last participant to complete the survey. Once the envelope has been sealed I will collect it.

3. Time required:

Your participation will involve one session lasting approximately 10 minutes.

4. Risks:

It is not anticipated that this study will present any risk to you other than the inconvenience of the time taken to participate in it.

5. Your rights as a subject:

- (i) The information gathered will be recorded in anonymous form. Data or summarized results will not be released in any way that could identify you.
- (ii) Your participation is totally voluntary. If you want to withdraw from the study (completing the survey) at any time, you may do so without penalty. The information collected from you up to that point would be destroyed if you so desire.
- (iii) At the end of the study, you have the right to request a summary of the results. If you have questions afterward please ask me or contact:

Dr. Suzanne Griffith
Department of Educational Leadership, UW-SUPERIOR,
(715) 394-8316

6. If you have any concerns about your treatment as a subject in this study, please call or write:

Eleni Pinnow, IRB Chair

Telephone: (715) 394-8312

Email: [✉✉epinnow@uwsuper.edu](mailto:epinnow@uwsuper.edu)

This research project has been approved by the UW-Superior Institutional Review Board for the Protection of Human Subjects, protocol # 1080.

Statement of Voluntary Participation

I understand that I am not being asked to sign the informed consent so that there is no record of who did or did not participate in the survey. By participating in the survey I am saying “that I willingly participate, understand the low risk level, and know my answers will be anonymous and confidential.”

Appendix B: Survey

Personal Health Behaviors and Role-Modeling Attitudes of Health and Human Performance Students

Part I: Sociodemographics

- 1. How old were you on your last birthday? Age:
2. How much do you weigh in pounds? Weight:
3. What is your height in feet and inches? Height:
4. What is your gender? Circle one: Male/Female
5. What is your current major? Community Health Promotion, Exercise Science, Physical Education, Undecided, Other:
6. What year are you in school? Senior, Junior, Sophomore, Freshman
7. Do you have any dependents under the age of 18 living at home? Circle one: Yes/No
8. Do you have any major responsibilities that impact the time available for health-related behaviors? Circle one: Yes/No
If yes, explain:
9. Have you completed HHP 102 Health and Wellness? Circle one: Yes/No

Please continue on to the next page.

Part II: Health Behaviors

Please check the statement that best describes your current behavior.

Section I: Physical activity. The CDC defines regular physical activity as:

Moderate-intensity (such as walking briskly, water aerobics, bicycling, tennis doubles, ballroom dancing, general gardening, or anything else that causes some increase in breathing or heart rate) for at least 2 hours and 30 minutes (150 minutes) a week

or

Vigorous-intensity (such as running, swimming laps, tennis singles, aerobics, jumping rope, heavy gardening, hiking or anything else that causes large increases in breathing or heart rate) for at least 1 hour and 15 minutes (75 minutes) a week.

Using this definition, do you engage in regular physical activity? (Check the one best answer from the choices below)

- Yes, and I have been for more than 6 months.
- Yes, and I have been for less than 6 months.
- No, but I intend to start within the next 30 days.
- No, but I intend to start within the next 6 months.
- No, and I do not intend to start within the next 6 months.

Section 2: Consumption of fruits and vegetables

Do you eat 5 or more servings of fruits and vegetables a day? (Check the one best answer from the choices below)

- Yes, and I have done so for longer than 6 months.
- Yes, and I have done so for less than 6 months.
- No, but I intend to eat more servings of fruits and vegetables within the next month.
- No, but I am seriously considering eating more servings of fruits and vegetables in the next 6 months.
- No, and I am not seriously considering eating more servings of fruits and vegetables in the next 6 months.

Section 3: Smoking

Do you smoke cigarettes? (Check the one best answer from the choices below)

- I have never smoked, or I have quit smoking for more than 6 months.
- Yes, but I am in the process of giving up smoking.
- Yes, but I intend to quit smoking within the next 30 days.
- Yes, but I intend to quit smoking within the next 6 months.
- Yes, and I do not intend to quit smoking in the next 6 months.

Section 4: Weight management

Do you believe that you maintain a healthy weight? (Check the best answer from the choices below)

- Yes, and I have done so for more than 6 months.
- Yes, and I have done so for less than 6 months.
- No, but I intend to take action to address my weight within the next 30 days.
- No, but I intend to take action to address my weight within the next 6 months.
- No, and I am not seriously considering taking action to address my weight within the next 6 months.

Part III: Role-Modeling Attitudes

Please indicate your level of agreement with each of the following statements using the following scale:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

- | | 1 | 2 | 3 | 4 | 5 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Role modeling is a powerful teaching tool for health professionals. | <input type="checkbox"/> |
| 2. It is not enough to simply stay current in the field; health professionals must also "practice what they preach." | <input type="checkbox"/> |
| 3. Involvement in CDC-recommended levels of regular physical activity* is a desirable and recommended behavior for health professionals. | <input type="checkbox"/> |
| 4. Eating 5 or more servings of fruits and vegetables a day is a desirable and recommended behavior for health professionals. | <input type="checkbox"/> |
| 5. Maintaining a healthy weight is a desirable and recommended behavior for health professionals. | <input type="checkbox"/> |
| 6. Abstaining from smoking is a desirable and recommended behavior for health professionals. | <input type="checkbox"/> |
| 7. It is important for health professionals to role model CDC-recommended levels of regular physical activity. | <input type="checkbox"/> |
| 8. It is important for health professionals to role model non-smoking behavior. | <input type="checkbox"/> |
| 9. It is important for health professionals to be role models for eating 5 or more servings of fruits and vegetables a day. | <input type="checkbox"/> |
| 10. It is important for health professionals to role model maintaining a healthy weight. | <input type="checkbox"/> |

* The CDC defines regular physical activity as:

Moderate-intensity (such as walking briskly, water aerobics, bicycling, tennis doubles, ballroom dancing, general gardening, or anything else that causes some increase in breathing or heart rate) for at least 2 hours and 30 minutes (150 minutes) a week

or

Vigorous-intensity (such as running, swimming laps, tennis singles, aerobics, jumping rope, heavy gardening, hiking or anything else that causes large increases in breathing or heart rate) for at least 1 hour and 15 minutes (75 minutes) a week.

CDC=Centers for Disease Control and Prevention

Place the survey in the envelope at the front of the room. Thank you!

Statement of Voluntary Participation

I understand that I am not being asked to sign the informed consent so that there is no record of who did or did not participate in the survey. By participating in the survey I am saying "that I willingly participate, understand the low risk level, and know my answers will be anonymous and confidential."

*Adapted from a survey by Black, Marcoux, Stiller, Xiangui, and Gellish (2012)

Appendix C: IRB Approval Letter

September 17, 2014

TO: Robin Lisdahl
Student Researcher

FROM: Eleni Pinnow
Chair, Institutional Review Board for Human Subjects

Institutional Review Board (IRB) Expedited Status Determination for Research Involving Human Subjects: *This study will evaluate the reported personal health behaviors of college students pursuing health related careers, their attitudes on role-modeling, and their body mass index.*

Your research proposal, IRB protocol #1080 has been determined to meet the guidelines for expedited status. The reader was Eleni Pinnow. Data collection is approved for one year from yesterday. Should collection need to extend beyond that date, you will need to resubmit your protocol to the IRB for an extension.

The purpose of the Institutional Review Board is to review research projects conducted by UW-Superior students, faculty, and staff to ensure that ethical practices and protocols with regards to use of human subjects are followed. Retain this memorandum with your research protocols. Please note that you must follow the proposal submitted to and agreed upon by this committee. If you change protocols or practices, or if data collection is expected to extend beyond the approved date, you must return to the committee for review of the modifications or extension.

Good luck in your research endeavor.

Cc: Dean of Faculties
IRB Committee members
Eleni Pinnow
Peter Cook
James Geidner
Eric Edwards
Orvin Clark