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UNIVERSITY STUDENTS' INVOLVEMENT IN A HEALTH PROMOTING
LIFESTYLE: INFLUENCING FACTORS OF THE HEALTH PROMOTION MODEL

A Thesis Submitted to the Graduate School
In Partial Fulfillment of the Requirements
For the Degree of
Master of Science

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Pittsburg, Kansas

November, 2016

UNIVERSITY STUDENTS' INVOLVEMENT IN A HEALTH PROMOTING
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Acknowledgments

First and foremost, I would like to thank Dr. Janet Smith, my attentive and passionate thesis advisor. Dr. Smith, I am grateful you challenged me when I needed it, answered all of my questions thoroughly, and provided me with helpful direction and suggestions, while still allowing this project to be my own work. Thank you for always being available to assist me, and for making our time working together of the utmost quality. You have been such a blessing to me during my time spent on this undertaking.

I would also like to acknowledge and thank Dr. Chris Spera and Dr. Janice Jewett. Your input was exceptionally valuable, and your various perspectives and educational backgrounds helped me view my thesis in a different light during the times I felt stuck. You both were essential members on my thesis committee, and I appreciate your time and energy.

Additional gratitude must be extended to Dr. Steven Mayhew, Dr. David Hurford, Carol Oehme, and my Clinical Psychology cohort. Dr. Mayhew and Dr. Hurford, thank you both for your encouragement and support throughout this project. You both inspire me deeply, and I have been blessed by your wisdom and experience. Carol, you do a great deal for our department, and deserve acknowledgment for helping my data collection run so smoothly. Your hard work and dedication does not go unnoticed. To my cohort: Trent Becker, Heather Caldwell, Maggie Franiuk, Melissa Patrick, and Katie Rennie, I would not have wanted to go through this program with anyone else! Thank you all for your support, and for being such an enjoyable group of people to work with! I will miss each and every one of you, and wish you all nothing but the best. I am confident you will each go exceedingly far in your careers.

Finally, I must express my immense gratitude to my husband, Marcus Estrada, as well as to my Lord and Savior, Jesus Christ. Marcus, your support through the many semesters of my graduate training pushed me to remain dedicated and focused. You are the best partner I could ask for, and I could not have done this without you. Thank you for putting up with my many late nights at the computer, and for going above and beyond to ease my stress and encourage me. To my Heavenly Father, I am and have nothing without You. Thank You for giving me the motivation, drive, perseverance, and energy to accomplish all that I have. To You be all the glory, honor, praise, and credit. Thank you for all You have done, are doing, and are going to do in my life.

Madison Estrada

UNIVERSITY STUDENTS' INVOLVEMENT IN A HEALTH PROMOTING LIFESTYLE: INFLUENCING FACTORS OF THE HEALTH PROMOTION MODEL

An Abstract of the Thesis by
Madison Victoria Estrada

This is a correlational study utilizing Nola Pender's Health Promotion Model (HPM) for examining the key influential factors regarding involvement in a health promoting lifestyle (HPL) among undergraduate students at Pittsburg State University. Ninety-six (96) undergraduate students enrolled in general psychology courses at Pittsburg State University completed the Health Promoting Lifestyle Profile-II (HPLP-II; Walker, Sechrist, & Pender, 1987), the Exercise Benefits/Barriers Scale (EBBS; Pender, Walker, & Sechrist, 1987), the Self-Efficacy for Exercise Scale (SEE Scale; Resnick & Jenkins, 2000), and the Physical Activity Stages of Change Questionnaire (Marcus, Selby, Niaura, & Rossi, 1992). Spearman Correlation coefficients (one-tailed tests), were used to identify significant characteristics of those participating in an HPL. These analyses revealed the students in this sample who engaged to a greater degree in an HPL, were more physically active, and also had a heightened sense of perceived self-efficacy pertaining to exercise. The highly efficacious students also identified fewer barriers to engaging in health promoting behaviors, and more benefits, as compared to their less active peers, and were currently in a more progressed physical activity stage of change. Because obesity on college campuses today has become an epidemic, negatively impacting both the physical and mental health of students, these findings encourage dialogue among those in helping roles at a university setting to come up with ways to assist and encourage students to engage in an HPL by

addressing perceived barriers and strengthening perceived self-efficacy. Through discovering what increases the likelihood of students living an HPL, interventions to promote overall well-being and health in various domains can be designed and implemented across college campuses today. This could help universities produce more successful, motivated, and persistent young adults as they transition from academia to the workforce.

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CHAPTER I

INTRODUCTION

Health Promotion Model

The Health Promotion Model (HPM) was developed by Nola J. Pender in 1982, and was revised in 1996 (Sheehan, 2011). The model was designed as a way to aid nurses and others in the helping field in their conceptualization of clients' health behaviors and the various factors that contribute to a healthy lifestyle, as well as to help predict exercise behaviors (Pender, 2011). The HPM is theoretically based off of Bandura's Social Cognitive Theory, and the Expectancy Value Theory. Social Cognitive Theory is at the foundation of the HPM, as the notion is the thoughts an individual has, the behaviors an individual partakes in, and the environment in which an individual lives in, all interact with one another. Therefore, in order for behavioral changes to occur, cognitive restructuring must take place (Pender, 2011). Whether or not an individual refers to a change as being within means and within the realm of possibility influences one's goal-directed behaviors, which is the basis of the Expectancy Value Theory (Pender, 2011).

Although Pender originally developed the HPM to study exercise-related behaviors, the model has demonstrated its effectiveness and applicability in a wide range of situations. The HPM has been empirically applied to hearing protection for

construction workers, smoking cessation, medication compliance, cholesterol levels as pertaining to dietary goals, efficiency in occupational roles, stress reduction, addressing prenatal care, and diabetes preventative behaviors, plus other areas of clinical applications (Gonzalo, 2011). Not only is the HPM highly relevant to a wide range of topics, but it can also be applied to a variety of people regardless of gender, age, health status, culture, or environment (Gonzalo, 2011).

The model takes an especially holistic approach, taking into account social and cultural elements, psychological factors, and biological variables. The overarching goal of the model is to increase health promoting behaviors, while taking into account the many different variables that make up an individual (Gonzalo, 2011). The components of the HPM are as follows:

1. Individual characteristics and experiences, including an individual's background factors and previous related behavior
2. Behavior-specific cognitions and affects, as well as interpersonal and situational influences
3. Behavioral outcome, which includes: (a) one's commitment to behave in health promoting behaviors and (b) the presence of competing demands and preferences characterized by the potential to derail participation in health promoting behaviors (Pender, 2011)

A diagram of the HPM, as developed by Nola Pender and colleagues (1987), is included in Appendix A. The health behaviors of an individual are categorized into the three aforementioned components, and are looked upon to explain how various factors directly and indirectly influence one's involvement in a health promoting lifestyle (HPL).

By utilizing the HPM to explore an individual's specific context, it can be understood how best to create interventions that will lead to the desired behavioral outcome, eventually producing an HPL.

Within the first component of the HPM, factors such as an individual's gender, age, race, socioeconomic status, developmental stage, past health promoting behaviors, and personality characteristic traits are included (Pender, 2011). While these factors hold much importance within the framework, they are factors that generally cannot be changed, and so more emphasis is given to the latter two components of the model (Gonzalo, 2011). The second component includes one's perceived barriers to, and benefits of making health-conscious life choices, perceived self-efficacy, perceived current health status, and attitudes regarding physical activity (Pender, 2011). The second component of the model also encompasses the social influences over an individual, as well as his or her access to resources and facilities that would promote an HPL. The final component of the HPM includes the variables that make up the behavioral outcome (Pender, 2011). This component considers the competing demands and competing preferences that an individual faces, as well as the level of commitment he or she has in regards to modifying behaviors.

When utilizing the HPM as a way to promote behavioral change, the last two groupings of the model contain the areas that are targeted in order to produce positive lifestyle changes resulting in an HPL (Gonzalo, 2011). Particular emphasis is placed on the following four variables, as research suggests they are highly modifiable

1. Increasing one's perceived self-efficacy
2. Decreasing perceived barriers

3. Improving attitudes regarding physical activity
4. Strengthening positive interpersonal influences

Individuals in the helping field can target these variables while providing treatment or services to individuals wanting to improve their health related behaviors and overall quality of life.

Definition of Terms

Health promotion is an approach taken to guide individuals in obtaining physical health and overall well-being. This form of promotion seeks to direct individuals to become self-actualized in regards to their human health potential by increasing motivation for the engagement in health promoting behaviors (Walker, Sechrist, & Pender, 1987).

An HPL is defined as an intentional way of living characterized by actions which attend to the various domains of health and contribute to an individual's overall well-being, self-actualization, and fulfillment (Walker, Sechrist, & Pender, 1987). There are six general health-related domains to take into account when considering one's involvement in an HPL; those include:

1. Spiritual growth
2. Interpersonal relationships
3. Nutrition
4. Physical activity
5. Health responsibility
6. Stress management

Health promoting behaviors include behaviors that are intentionally carried out by an individual as a means to avoid illnesses; maintain functioning; improve balance, strength, agility, or aerobic capacity; or to achieve greater intellectual, emotional, psychological, physical, or spiritual health (Walker, Sechrist, & Pender, 1987).

An individual's personal characteristics and prior experiences influence his or her involvement in health promoting behaviors; these characteristics include biological, psychological, and socio-cultural factors. Biological factors include one's age, gender, strength, aerobic capacity, agility, balance, body mass index, and developmental stage (Pender, 2011). Psychological factors include an individual's self-esteem, motivation, perceived health status, and personal definition of a healthy lifestyle (Pender, 2011). Socio-cultural factors are comprised of an individual's culture, race, ethnicity, knowledge regarding health promoting behaviors and education in general, socioeconomic status, and acculturation (Walker, Sechrist, & Pender, 1987).

As pertaining to health promoting behaviors, an individual's behavior-specific cognitions and affect greatly influence involvement in an HPL. Within the HPM, the types of cognitions that are wholly attended to include an individual's perceived benefits of, and barriers to partaking in health promoting behaviors, an individual's perceived self-efficacy regarding his or her ability to partake in health promoting behaviors, and his or her thoughts regarding the interpersonal and situational influences that make up his or her environment (Pender, 2011).

In terms of behavior-specific affect, careful consideration is given to an individual's activity-related affect and interpersonal-related affect. Activity-related affect encompasses an individual's level of enjoyment or other positive emotions associated

with a given activity. The positive or negative feelings an individual identifies with prior to, during, or post the execution of health behaviors all make up activity-related affect. Interpersonal-related affect includes the emotions one experiences in regards to the level of support he or she believes is received from family members, significant others, peers, and healthcare providers while striving to participate in health promoting behaviors.

Activity-related cognitions or perspectives include perceived self-efficacy, and perceived benefits of, and barriers to action. Perceived self-efficacy is an individual's belief that he or she has the overall capability to implement health promoting behaviors into his or her daily living (Pender, 2011). Perceived benefits to partaking in health promoting behaviors are the positive outcomes an individual expects will be obtained via participation (Pender, 2011). Perceived barriers, on the other hand, are the potential, imagined, or legitimate obstacles an individual believes could get in the way of participating in health promoting behaviors. Additionally, perceived barriers to participation are influenced by an individual's anticipated personal cost of health behavior involvement.

Cognitions related to interpersonal and situational influences include the thoughts an individual has concerning the behaviors or opinions of other people, as well as the norms and expectations of one's culture, family members, or peers (Pender, 2011). Also included in this category of cognitions are thoughts pertaining to the amount of social support provided, thoughts pertaining to others modeling or engaging in health promoting behaviors, thoughts related to the availability of options for health behavior participation, and expectations regarding what a health promoting environment should offer (Pender, 2011).

The behavioral outcomes of the HPM are the achieved health promoting behaviors, the level of commitment made by an individual to a plan of action, and the direct competing demands and preferences an individual faces while striving to complete a health promoting plan of action (Pender, 2011). An individual's commitment to a plan of action is characterized by having a detailed plan and specific strategies, as well as by the level of intention and motivation to implement the strategies and desired behavioral changes (Pender, 2011).

Competing demands encompass alternative behaviors that may take precedence over the implementation of health promoting behaviors (Pender, 2011). Examples of such demands would be: work-related demands or family responsibilities. Competing preferences arise when an individual is striving to implement a plan, but other alternative behaviors in which an individual has high control over, but finds to be appealing, compete with the implementation of health promoting behaviors (Pender, 2011). For example, choosing to watch television instead of going on a walk in the neighborhood, or choosing to drink a can of soda, rather than drinking a bottle of water, may be regarded as instances of competing preferences.

Assumptions of the Health Promotion Model

According to the HPM, individuals seek to actively regulate their behaviors, including health promoting behaviors such as exercise participation or the maintenance of a nutritional eating regimen (Gonzalo, 2011). A continual interaction exists between individuals and their environment, in which individuals seek to manipulate their environment, but are also transformed themselves by their biopsychosocial factors. Part of an individual's environment includes professionals in the health field who can act as

an influencing factor regarding an individual's participation in health promoting behaviors. The HPM makes the assumption that in order for adaptive behavioral changes to take place, there must be an intentional reconfiguration of the patterns in which an individual interacts with the environment (Gonzalo, 2011; Pender, 2011).

While an individual has past experiences, learned prior behaviors, and personal characteristics that may be difficult or impossible to change, altering the way an individual perceives and interacts with the environment can be achieved by targeting the five changeable components of the HPM:

1. Perceived benefits of health behavior participation
2. Perceived barriers to health behavior participation
3. Perceived self-efficacy regarding his or her ability to participate in health behaviors
4. Level of commitment to a plan of action
5. Activity-related affect (Pender, 2011)

The HPM proposes when individuals anticipate greater benefits from health behavior participation, they are more likely to commit to engaging in such behaviors (Pender, 2011). Furthermore, when individuals perceive excessive barriers to participation, their commitment to action can be derailed and competing demands and preferences are likely to take precedence (Taymoori et al., 2009). An individual who perceives fewer barriers to participation, greater benefits of participation, and has an increased self-perception of competence and self-efficacy is more likely to implement health promoting behaviors, and perform those behaviors more successfully (Pender, Bar-Or, Wilk, & Mitchell, 2002).

When alternative behaviors are more attractive than the health promoting behaviors, commitment of an individual can dwindle. Identifying perceived barriers, competing demands, and competing preferences and then addressing possible solutions for those is a key aspect of putting the HPM into practice. Commitment to action can further be strengthened by looking into an individual's activity-related affect and reinforcing positive emotions associated with health promoting behaviors and activities (Taymoori, Lubans, & Berry, 2010).

The HPM presumes when individuals have more frequent positive interpersonal influences, in which others model optimal health behaviors, an individual is more likely to favorably view the behavior and expect the behavior to take place (Pender, 2011). Additionally, positive interpersonal influences in one's life increase the likelihood that support will be offered to an individual striving to make positive health behavioral changes, in which those behaviors will be encouraged and reinforced. Interpersonal influences and situational influences can aid in strengthening the commitment of an individual to continually implement a plan of action related to health behavior participation, and increase the odds the behaviors will be maintained over time (Gonzalo, 2011). How well an individual believes he or she is supported by his or her family, significant others, peers, or healthcare providers can promote or obstruct positive activity-related affect. Identifying if an individual perceives his or her interpersonal and situational influences to be supportive or discouraging is beneficial when considering his or her participation in an HPL.

With regards to activity-related affect, as it pertains to the model, how one feels emotionally pertaining to health-related behaviors is carefully considered. Taking into

account the individual's emotions at various time-points of health behavior participation (pre-participation, during participation, and post-participation) is essential as activity-related affect is an influencing factor for perceived self-efficacy. Not only is greater self-efficacy correlated with a heightened sense of positive activity-related affect, but self-efficacy has also been found to directly influence greater positive affect (Mohamadian et al., 2011).

The overall assumption of the HPM is that individuals can learn how to modify their cognitions and affects, as well as their interpersonal and situational environments, pertaining to the participation of health promoting behaviors, and thereby strengthen their likelihood to live an HPL (Pender, 2011).

Statement of the Problem

Despite the large percentage of adults in America who are overweight or obese, obesity rates and disorders related to obesity continue to be on the rise (Fox, 2015). According to 2014 Centers for Disease Control and Prevention (CDC) data, all states in the United States have an obesity rate of 20% or above, with three states having a rate of 35% or above: Arkansas, Mississippi, and West Virginia. According to 2012 data, the United States was spending approximately \$190.2 billion annually on healthcare costs for obesity-related diseases (Cawley & Meyerhoefer, 2012). Many attempts have been made to promote healthy living by striving to distribute health-related information in the United States. While most adults can acknowledge at least some value in partaking in physical activity or having healthy eating habits, not much progress has been made in spite of the wide-spread sharing of information (Berkowitz & Borchard, 2009).

Childhood obesity also continues to be a major health concern in America, even though many programs have been designed throughout the country to help target this epidemic. During adolescence, the interpersonal influences a child receives from family and peers can have significant implications on the emergence of an HPL. Research has demonstrated that exercise levels decrease with age, starting at the adolescent stage of development (Kann et al., 2000; Trost et al., 2002).

In addition to exercise levels decreasing, a distinct decline can be observed among college students in regards to nutritional priorities (Gu, Chen, Collins, & Williams, 2014). Gu et al. (2014) found only 30-50% of college students participate in physical activity, and that this population of young adults identifies with a large number of perceived barriers and lower health-related quality of life. It was also revealed in this study that those who reported greater participation in physical activity identified fewer barriers to exercise and had a higher rated health-related quality of life (Gu, Chen, Collins, & Williams, 2014). These findings have great implications in regards to the amount of perceived barriers, as this component of the HPM greatly predicts behavior change (Janz, et al, 2002).

As young adults enter college, they are faced with increased opportunities to make their own behavioral choices in regards to nutrition and exercise habits. As previously stated, typically there is a decline in physical activity and nutritional eating habits once a young adult enters college (Gu, Chen, Collins, & Williams, 2014). Individuals who did not adopt healthy exercise or nutritional habits during their childhood, are at an even greater risk of continuing bad habits, and adopting even worse health-related behaviors (Arzu, Tuzun, & Eker, 2006). Once these individuals start

families of their own, if they still have unhealthy lifestyles, it is possible their children's participation in an HPL will be limited, as they themselves will struggle to foster health promoting behaviors and model good nutritional and exercise habits (Wu & Pender, 2005).

The HPM can be utilized to study the factors that contribute to college students' lack of engagement in an HPL. The weight that university students often gain, or the so-called "freshmen 15" is not caused by poor eating habits alone, but is compounded by lack of exercise and inadequate sleep (Miller, 2011). Discovering ways to help college-aged individuals learn healthier habits and how to implement those health promoting behaviors is a necessary step when addressing the obesity epidemic in America, as it has been found that more than 80% of those who are sedentary in college, maintain a sedentary lifestyle throughout adulthood (Sparling & Snow, 2002).

Intervening at the collegiate level could greatly ease the suffering of American businesses as well if university students are able to adopt healthier lifestyles prior to entering the workforce. From 2007 to 2014, the annual obesity-related job absenteeism cost in the United States workplace more than doubled from \$4.3 billion to an estimated cost of \$8.65 billion (Andreyeva, Luedicke, & Wang, 2014; Cawley, 2007). In 2011, approximately 5.2 million college students were considered obese, a rate that since 2011 has likely continued to rise with the overall obesity rate in America (Miller, 2011). These frightening figures demonstrate the need for preventative interventions to take place on university campuses in the United States today. In order to design the interventions, the overall HPL of a college student must be examined by means of an all-inclusive perspective, focusing on several potential contributing variables. The holistic nature of

the HPM makes it an accommodating approach to use when seeking to gather information regarding the lifestyles of college students.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The Health Promotion Model (HPM) has been widely applied to various populations across the world. The components of the HPM have been separated and analyzed in order to determine the applicability and helpfulness of each. Numerous studies have highlighted the utility of the model and its components in aiding in the prediction of a health promoting lifestyle (HPL) among diverse demographics (Taymoori, Lubans, and Berry, 2010). A large portion of the available literature centers around the contributing factors of an HPL among children and adolescents. There have also been many studies among the college-aged population that look into the various components of the HPM as those relate to exercise behaviors. The findings of these studies support the usefulness of the HPM, and its ability to predict an HPL for an individual. Furthermore, the results shed light on how to further promote health-conscious behaviors among a range of populations, by targeting specific components of the HPM.

Previous studies have highlighted the importance of taking into consideration the HPM variables in a wide range of topics, such as the health-related quality of life, physical activity, and the Transtheoretical Model of Change. To fully appreciate the implications of this study and the significance of the findings, a review of the literature

regarding the various components of the HPM will be provided. Due to the significant importance of the HPM cognitive component of perceived self-efficacy, relevant research emphasizing the implications of self-efficacy and desired behavioral changes pertaining to a wide range of situations will also be thoroughly considered.

Health Promotion Model and Health-Related Quality of Life

In a 2011 study by Mohamadian et al., the HPM was analyzed for its ability to predict one's health-related quality of life. The purpose of the study was to see if there were any existing relationships between the HPM variables and health-related quality of life, as well as to identify health-related quality of life predictors. Their analyses revealed self-efficacy, perceived barriers, and social support each had significant relationships with involvement in an HPL (Mohamadian et al., 2011). An HPL had a significant positive and direct influence on the health-related quality of life, and self-efficacy had a significant positive and direct influence on an HPL and the health-related quality of life. The Mohamadian et al. (2011) study demonstrated that the HPM could prove to be useful in explaining and predicting variables relating to the health-related quality of life. A noteworthy finding of this study was an HPL alone can act as a strong predictor of the health-related quality of life. Therefore, the value of discovering what contributes to an individual's ability to live an HPL becomes evident when striving to understand how to enhance one's health-related quality of life. The HPM can help do just this—uncover what factors promote and impair one's involvement in living an HPL (Mohamadian et al., 2011). One would expect those who are characterized as having an excellent health-related quality of life would partake in regular physical activity; therefore, it is necessary to consider how the HPM relates to physical activity participation.

Health Promotion Model and Physical Activity

While physical activity in itself is not a component of the HPM, it is a major part of an individual living an HPL, and therefore has been widely addressed in the HPM research. The HPM has been used as a means to predict exercise behaviors, and the components of the HPM have been discovered to have both direct and indirect effects on physical activity. Taymoori, Lubans, and Berry (2010) found the HPM components of self-efficacy, activity-related affect, interpersonal influences, and commitment to planning all have direct effects on one's participation in exercise behaviors. In this same study, perceived benefits of exercise, perceived self-efficacy, and activity-related affect were also found to have indirect effects on physical activity involvement.

An additional component of the HPM that has been found to influence physical activity participation is that of competing demands and preferences, particularly how those influence the component of commitment to planning (Taymoori, Lubans, & Berry, 2010; Taymoori et al., 2008). The findings of a 2008 study by Taymorri et al. supported targeting the perceived self-efficacy, perceived exercise benefits and barriers, and interpersonal components of the HPM in order to enhance one living in a way that advances an HPL specifically by promoting exercise behaviors.

In another longitudinal investigation (Wu and Pender, 2005), the HPM was utilized to gain insight into variables contributing to Taiwanese adolescents' participation in physical activity. The study took place over two years, and carried out two separate waves of data collection with students starting out in eighth grade (Wave 1 of data collection) and continuing on into ninth grade (Wave 2 of data collection). In Wave 1 of the data collection involving 969 students, the HPM components of perceived self-

efficacy and interpersonal influences had direct effects on physical activity. A year later, when Wave 2 of the data collection took place with 892 of the original participating students, perceived self-efficacy was the only HPM component that directly influenced exercise behaviors.

From the literature on the HPM and physical activity, it is clear several of the HPM components influence exercise behaviors. For this reason, it is vital to take a look at each separate HPM component, in order to fully understand the impact each has on physical activity and an HPL.

Health Promotion Model: Interpersonal Influences Component

While the interpersonal influence component of the HPM is not as modifiable as the components related to behavior-specific cognitions and emotions, it has been found to be a critical factor when predicting involvement in an HPL. When studying which components of the HPM could be used to predict a health-related quality of life, Mohamadian et al. (2001) concluded social support was a key factor in facilitating an HPL, as well as the health-related quality of life. This supports the findings of many other investigations looking at predictive variables of an HPL (Chen et al., 2007; Ethgen et al., 2004; Finch & Vega, 2003; Seo & Hah, 2004; Taymoori et al., 2008; Thanakwang, 2008).

In addition to receiving social support from family members, friends, and peers, other studies have indicated an important aspect of interpersonal influences in facilitating exercise behaviors is that of behavioral modeling (Taymoori, Lubans, & Berry, 2010; Taymoori, Niknami, Berry, Ghofranipour, & Kazemnejad, 2009). Taymoori et al. (2010) noted within the interpersonal influences component, interpersonal norms supporting the

involvement in an HPL contributed to an individual having greater follow-through when planning to make desirable health promoting behavioral changes.

Research examining the components of perceived benefits of exercise, and barriers to exercise has also shed light on the interpersonal component of the model. When an individual believes he or she is not receiving enough social support, this is often times viewed as a barrier to participating in exercise-related activities (Arzu, Tuzun, & Eker, 2006; Awadalla, et al., 2014; Lovell, Ansari, & Parker, 2010). While a lack of social support can be viewed as a barrier, the ability to socially interact with others while participating in exercise can be regarded as a perceived benefit of exercise according to Lovell, Ansari, and Parker's (2010) investigation with non-exercising college students.

Health Promotion Model: Perceived Benefits and Barriers Components

Studies utilizing the HPM to investigate physical activity participation have frequently turned to the components of perceived benefits of, and barriers to action. These two components of the model have gained significant attention, as the implications of what an individual perceives as being benefits of, and barriers to exercise is one in which healthcare providers can help modify to best enhance involvement in an HPL in someone who is seeking guidance. Furthermore, these components have gained abundant research attention because the identification of perceived benefits of, and barriers to exercise have been found to be useful in predicting an individual's involvement in physical activity (Gu, et al., 2014).

In a cross-sectional study with 500 students in grades 9-11, a negative relationship was found to exist between perceived barriers and the health-related quality of life (Mohamadian et al., 2011). Perceived barriers had a significant and direct influence on

exercise and an HPL, indicating as more barriers are perceived, health promoting behaviors decrease; this finding is in line with previous findings (Stuifbergen et al., 2005). Similarly, Gu et al., (2014) found perceived barriers were a mediator of college students' participation in physical activity and their ratings regarding their health-related quality of life. It was discovered that those who perceived fewer barriers to exercise had a better health-related quality of life and engaged in greater amounts of exercise.

While perceived benefits of exercise have been found to have an indirect effect on physical activity, few studies have looked into what specific benefits are most significantly influential (Taymoori, Lubans, & Berry, 2010). Discovering what individuals perceive as being particularly beneficial in regards to exercise can be useful in addressing the general decline in perceived benefits of exercise that occurs as adolescents make school transitions, eventually transitioning to a university setting (Garcia et al., 1995). One study investigating perceived benefits pertaining to exercise among female university students found physical performance, psychological well-being, preventative health, increased quality of life, and social interaction were all significant perceived benefits (Lovell, Ansari, & Parker, 2010). It is important to keep in mind, however, that perceived benefits change throughout various developmental stages and life changes, and so this is a relevant component to monitor across time (Garcia et al., 1995).

Numerous studies have investigated specific perceived barriers to physical activity, and have identified significant external and internal barriers among the college-aged population. Lovell, Ansari, and Parker (2010) found female college students perceived the greatest barrier being that of physical exertion, with other barriers such as

time constraints, exercise resources, and discouragement from family also having significant influence. This is similar to the findings of Arzu, Tuzun, and Eker (2006) in which college students identified external barriers of not having enough time to participate in physical activity, having a lack of resources, and having lack of interpersonal support being the most significant. In addition, the internal barrier of not having enough energy was most frequently identified in this study as well (Arzu, Tuzun, & Eker, 2006).

Lastly, in regards to specific perceived barriers, Awadalla et al., (2014) studied 1,257 university students (ages 17-25) in Saudi Arabia. Following the data collection and analysis of such data, the top four significant perceived barriers were identified as being:

1. Time constraints
2. Not having a suitable or accessible environment or sport facility
3. Other priorities taking precedence
4. Not receiving enough support and encouragement from friends (Awadalla et al., 2014)

Results also revealed two significant predictors of physical inactivity, those being not having a membership at a sports club or facility and being a medical student.

If an individual perceives a significant amount of barriers, and few benefits pertaining to health promoting behaviors, it is understandable how his or her commitment to make behavioral changes could be slight. Many studies have delved deeper into the commitment to a plan of action component, and found other factors that influence, both negatively, and positively, one's desire to engage in a plan of action.

Health Promotion Model: Commitment to a Plan of Action Component

The behavioral outcome component of the HPM includes one's commitment to plan and partake in health promoting behaviors, as well as an individual's competing demands and preferences. Taymoori et al., (2008) addressed the influence of commitment to planning and participating in an HPL on exercise participation, and found individuals who exercised more frequently identified with a heightened commitment to living an HPL (Taymoori et al., 2008). Similarly, Taymoori et al., (2010) found a significant positive correlation between commitment to planning active behaviors and increased participation in physical activity.

Individuals who identify more competing demands derailing their physical activity involvement tend to be characterized by less commitment to planning physical activities (Taymoori et al., 2009). Additionally, those who acknowledge more competing preferences in their daily lives, such as watching television, display less commitment to planning, while those with less competing preferences have a heightened commitment to planning physical activity (Taymoori, Lubans, & Berry, 2010). This could suggest individuals who prefer to engage in physical activity, rather than engage in alternative behaviors, have more positive activity-related affect pertaining to exercise, such as a sense of accomplishment or enjoyment from exercising.

Because the HPM focuses on behavioral changes, it is beneficial to consider the Transtheoretical Model of Change and how the two models mesh together. Having addressed the influence of the HPM components of interpersonal influences, perceived benefits, perceived barriers, and commitment to a plan of action, this review will now

address the stages of change proposed by the Transtheoretical Model of Change before delving into the final, and most significant, HPM component of perceived self-efficacy.

The Transtheoretical Model of Change

A model originally developed by Prochaska and DiClemente, the Transtheoretical Model has proven to be applicable to a wide range of behaviors (Norcross, Krebs, & Prochaska, 2011). The Transtheoretical Model is referred to as a biopsychosocial model which aids in the conceptualization of an individual's behavior as it progresses through five different stages of change. The stages of change are as follows:

1. Precontemplation
2. Contemplation
3. Preparation
4. Action
5. Maintenance (Norcross, Krebs, & Prochaska, 2011)

The model was originally developed to enhance the understanding of health-related behaviors, but like the HPM, has proven to be quite useful in its range of applicability over time (Norcross, Krebs, & Prochaska, 2011). The Transtheoretical Model has been utilized to look at behavioral readiness to change in business management positions, coaching roles, behaviors in the tourism field of business, willingness of employees to learn new web-based technology, entrepreneurship, behavioral changes in the United States Army, and students' classroom and athletic behaviors (Klonek, Isidor, & Kauffeld, 2015). These studies have demonstrated the usefulness of the Transtheoretical Model in behavioral outcomes other than just health-related behaviors, as the model was originally intended for. The model is also frequently

used in a psychotherapy setting to further understand an individual's behaviors and thought processes, as well as to individualize treatment and interventions to best promote the success of an individual toward adopting healthier behaviors which influence positive life changes.

There is no set time as to how long an individual may be in a given stage, but rather there are certain characteristics that must be present in each stages of change (Norcross, Krebs, & Prochaska, 2011). The characteristics for each stages of change include:

1. Precontemplation: an individual has no intention and/or desire to change his or her behavior as he or she is either unaware of the problems caused by the behaviors, or has a significant lack of awareness, or under-awareness.
2. Contemplation: an individual is aware problems exist, as a result of his or her behaviors, but he or she is not quite ready to commit to making any behavioral changes to alter the current status quo.
3. Preparation: an individual is very aware of the problems and has begun to make minor behavioral changes. An individual also intends to continue making additional behavioral changes over the upcoming month in order to further alleviate the difficulties experienced from the undesirable behavior.
4. Action: an individual is actively working to significantly change his or her behaviors, thought processes, personal outlook pertaining to his or her current situation, and/or his or her environment in order to live in a healthier manner and avoid past negative consequences from previous undesirable behaviors. In this stage, an individual has achieved one to six months of success with

avoiding engaging in dysfunctional behaviors, and continues to make healthier behavioral choices.

5. Maintenance: an individual has experienced at least six months of success with modifying old behaviors and carrying out new behaviors that promote health and well-being. An individual in this stage continues to strive for personal growth with the intent of avoiding relapse.

Once one in a helping role is able to identify the Transtheoretical Model stage of change an individual is in, interventions to best address undesirable behaviors or cognitions can be identified and implemented. The identification of the current stages of change strengthens a healthcare provider's conceptualization of an individual's willingness and likelihood of changing undesirable behaviors (Norcross, Krebs, & Prochaska, 2011). Because habits are often difficult to break, and behavioral modifications tend to take a significant amount of time, understanding where an individual is as he or she progresses through the stages can be enlightening to healthcare providers.

The Transtheoretical Model provides useful information that can assist healthcare providers as they attempt to identify an individual's current stage of change. Particular actions of an individual throughout the stages of change have been identified and categorized within three various constructs of the model. First, the decisional balance, or an individual's perceived benefits of, and barriers to behavioral change are considered (Klonek, Isidor, & Kauffeld, 2015). Second, an individual's readiness to change, or commitment to a plan of action is explored. Lastly, the Transtheoretical Model

highlights the importance of considering the self-efficacy of an individual, or his or her belief that he or she can successfully make the desired behavioral changes.

Regarding the first component of the stages of change, the Transtheoretical Model assumes that in the earlier stages of change, individuals will identify greater perceived costs of changing, rather than benefits (Klonek, Isidor, & Kauffeld, 2015). In fact, those in the precontemplation stage are characterized by a decisional balance in which the cons of changing completely outweigh the pros of changing, thereby resulting in either no willingness or desire to change, or an under-awareness of a need to change in the first place. As individuals transition to the next sequential stages of change, their habit strength for the new desired behavior and commitment to change strengthens due to greater achieved mastery of positive behavioral changes and decreased initiation in undesirable former behaviors. According to the Transtheoretical Model, the last construct, self-efficacy, will continue to increase, as one progresses through the stages of change, and continues to experience mastery and the benefits of routinely partaking in desirable behaviors. As benefits of action increase and barriers decrease, an individual gains a higher degree of belief in his or her abilities, competency, and level of commitment to the desirable behavioral outcomes (Klonek, Isidor, & Kauffeld, 2015).

Undoubtedly, there are several similarities between the Transtheoretical Model of Change and the HPM, and unsurprisingly, research utilizing the components of the HPM has highlighted the importance of deciphering what stage of change an individual is in. The various components of the HPM, such as perceived benefits and barriers, perceived self-efficacy, and commitment to a plan of action all influence the stage of change of a

particular person, and as such, a review of the HPM and stages of change research will now be offered.

Health Promotion Model and Stages of Change

Taking into account what stage of change an individual is in when considering the various components of the HPM, as they contribute to one living an HPL, can be exceedingly informative (Taymoori et al., 2009). Identifying one's stage of change can help predict the amount of commitment an individual has to participating in health promoting behaviors (Taymoori et al., 2009).

The HPM was utilized in a study by Taymoori et al. (2008) to look at what components of the HPM influenced participation in physical activity. Based on the HPM, physical activity interventions were designed for 161 female participants who were randomly assigned to three different groups:

1. A group receiving HPM interventions that addressed the stages of change (HP group, n=54)
2. A group who received the same HPM interventions addressing the stages of change, plus an addition of two Transtheoretical Model processes focusing on counter conditioning (an introduction of behaviors which are incompatible with undesirable behaviors), and stimulus control (the controlling of various stimuli which trigger undesirable behaviors) (THP group, n=55)
3. A control group who partook in their regular school physical education classes (n=52)

Information was gathered from all participants assessing for their perceived level of self-efficacy, current physical activity levels, perceived barriers and benefits regarding

exercise, exposure to interpersonal influences regarding health promoting behaviors, preferences pertaining to types of exercise or physical activity, and their outlook on the process of change. Furthermore, throughout the duration of the study, all participants were required to keep track of their physical activity each day logging what activity they partook in and how long (in minutes) they partook in the physical activity (Taymoori et al., 2008). All individuals in the study, with the exception of the control group, received group educational sessions 45 to 60 minutes in duration at baseline, week four, week ten, and week eighteen. It was during these sessions the participants' current stage of change was determined in order to keep track of progress, and better individualize the counseling sessions for each person. The participants were placed into groups based on their current stage of change and the counselors provided them with information regarding behavioral changes that would be beneficial in light of their current stage of change status.

At the conclusion of the study, results indicated those in the condition groups had greater progression through the stages of change than those in the control group (Taymoori et al., 2008). This finding supported striving to increase the following HPM components: perceived self-efficacy, perceived exercise benefits, and social support; while also attempting to decrease perceived barriers as well. Furthermore, it was discovered that as participants moved up in their stages of change, they also experienced an increase in their physical activity levels.

While the THP and HP condition groups resulted in more individuals moving to the action stages (81.8% and 72.2% respectively) than the control group (17.3%), the THP group was superior over the HP group in several ways. Those in the THP group recognized more benefits of exercise, identified an increase in social support, and

acknowledged partaking in a greater increase of activity than those in the HP group. Lastly, at follow-up, the THP group had a statistically significant difference in minutes of exercise as compared to the control group. This was hypothesized to be a result of the THP group receiving more behavioral processes in their intervention, identifying fewer exercise barriers, and identifying a greater social influence from significant others (Taymoori et al., 2008).

Pender's HPM was utilized to predict stages of exercise behavior in a study with 1,073 adolescents (Taymoori et al., 2009). This investigation revealed self-efficacy was the key indicator of exercise stage and could be used to distinguish between individuals in the first stage of change (precontemplation), from further along stages of change, such as contemplation, preparation, action, and maintenance. From this, the predictive value of self-efficacy is highlighted in that it can be useful in foretelling what stage of change an individual might be in, as well as the degree of involvement in exercise behaviors that might be characteristic of an individual. Furthermore, individuals who were characterized by more physical activity involvement acknowledged fewer barriers and more benefits to exercise.

With regards to a college-age population, Wallace & Buckworth (2003) and Wallace, Buckworth, Kirby, and Sherman (2000), found self-efficacy for exercise among college students was positively correlated with levels of physical activity involvement. In fact, in both of these studies, self-efficacy was the most influential factor contributing to the students' current stage of exercise behavior change (Wallace & Buckworth, 2003; Wallace et al., 2000).

Leenders, Silver, White, Buckworth, and Sherman (2002) looked into perceived self-efficacy, involvement in physical activity, and the current stage of change in college students, and found in the progression of the stages of change, an increase in perceived self-efficacy in each of the successive stages from the precontemplation to maintenance stages (Leenders et al., 2002). Leenders et al. (2002) also established that college students who identified themselves as being inactive or irregularly active had a lower perceived self-efficacy in regards to their ability to exercise.

Health Promotion Model: Self-Efficacy Component

Among the studies carried out with adolescent and college-aged populations, it has been determined repeatedly that the HPM component of perceived self-efficacy has significant direct and indirect effects on one's participation in physical exercise, an HPL, and the overall health-related quality of life (Brannagan, 2010; Mohamadian et al., 2011; Pender, Bar-Or, Wilk, & Mitchell, 2002; Taymoori, Lubans, & Berry, 2010; Taymoori et al., 2008; Taymoori et al., 2009; Wu & Pender, 2005). Mohamadian et al. (2011) found perceived self-efficacy had a significant and positive direct influence on an HPL and the health-related quality of life, which is consistent with previous research (Motl & Snook, 2008). Believing in one's ability to plan and implement health promoting behaviors into a chosen way of life drastically increases the likelihood there will be more positive behaviors characteristic of an HPL and an enhanced health-related quality of life. Additionally, when individuals have a stronger sense of perceived self-efficacy, other behavior-specific cognitions, such as perceived benefits and barriers and pleasant thoughts pertaining to exercise activities favorably promote an HPL (Mohamadian et al., 2011).

Identifying an individual's perceived self-efficacy can be of considerable help when predicting exercise involvement (Taymoori, Lubans, & Berry, 2010). In a study with adolescent boys, self-efficacy was found to be the strongest predictor out of the HPM components in regards to individuals taking part in physical activity (Taymoori, Lubans, & Berry, 2010). Wu and Pender's (2005) longitudinal two-wave study also supports this finding as in both waves of data collection, self-efficacy was the most influential component of the HPM on predicting physical activity, and was the *only* variable to have a direct effect on exercise in the second wave of data collection. Increased participation in physical activity was also significantly influenced by perceived self-efficacy in a study carried out with a college-age population in Texas (Bryant, Cosgrove, & Shangguan, 2014).

Pender, Bar-Or, Wilk, and Mitchell (2002) conducted a study with female adolescent participants exploring the physical maturity of individuals, their perceptions in regards to the amount of energy and effort they were exerting during exercise, and their perceived self-efficacy pertaining to exercise in the form of a 20-minute bicycling task. The investigators sought to determine whether or not the participants' perceived self-efficacy correlated with their perceived exertion to the exercise task. The results revealed an inverse relationship between perceived self-efficacy and physical exertion prior to the exercise task, as well as an inverse relationship between perceived self-efficacy and actual physical exertion following the bicycling task. Both of the inverse relationships uncovered were significant findings. The participants who perceived greater self-efficacy in regards to exercise, acknowledged less physical exertion, and those who perceived a lower degree of self-efficacy viewed themselves as putting forth much greater physical

exertion during the exercise task. This study demonstrated that perceived self-efficacy can be a predictor of perceived physical exertion.

Brannagan (2010) examined the HPM component of self-efficacy and the factor of perceived physical exertion among college freshmen in Louisiana. Brannagan gathered information from 1,389 college freshmen, ages 18-24 years, with the intention of discovering if perceived exertion and exercise participation were mediated by perceived self-efficacy pertaining to one's ability to carry out an exercise program. Results indicated there were significant relationships between perceived physical exertion and self-efficacy, as well as self-efficacy and participation in physical activity. Like previous findings, those with greater perceived self-efficacy believed they were putting forth less physical exertion, and those who were more efficacious also partook in more frequent physical activity.

Perceived self-efficacy has continued to be a component that strongly predicts involvement in exercise, having both direct and indirect effects on physical activity. An individual with greater perceived self-efficacy is more likely to implement health promoting behaviors, and perform those behaviors with greater success (Pender, Bar-Or, Wilk, & Mitchell, 2002). For this reason, in order to address the large population of sedentary college students, a deeper look into the component of self-efficacy and how it influences other behaviors, aside from exercise, should be considered.

Self-Efficacy

Introduction

The HPM component of perceived self-efficacy has significant relevance when looking at physical activity involvement because self-efficacy is an underlying

mechanism of motivation and is a mediator of goal directed behaviors (Fan et al., 2008; Hosseini, Pishghadam, & Vahidnia, 2014). It is important to understand an individual's perceived competence regarding specific behaviors, as self-efficacy is positively correlated with actual performance, not just the motivation or intent behind the performance (Hosseini, Pishghadam, & Vahidnia, 2014). So too is it imperative for one to understand an individual's self-efficacy as it relates to specific domains, as self-efficacy is dependent upon the task at hand. When considering various domains, for example, an individual could be highly efficacious in the academic context, but have low self-efficacy when it comes to exercise behaviors. Expanding upon that notion, an individual may have a variable level of self-efficacy pertaining to specific tasks within a given domain—for instance, someone with a high degree of exercise-related self-efficacy (domain) might be characterized efficacious as pertaining to weight-lifting activities (task), but have low exercise self-efficacy as it relates to swimming ability (task).

Individuals who perceive a high degree of competence within particular areas of life are more likely to choose goals with greater difficulty in those efficacious areas, and are more likely to engage and commit themselves to working toward those goals as well as make greater progress toward the goals (Chase, 2001; Escarti & Guzman, 1999; Locke, Frederick, Lee, & Bobko, 1984; Locke & Latham, 1990; Sheldon & Kasser, 1998; Waung, MacNeil, & Vance, 1995). Moreover, self-efficacy is positively correlated with persistence and maintained interest in an identified goal (Lent, Brown, & Hackett, 2002; Linnenbrink & Pintrich, 2003; Schunk, 2003; Zimmerman, Bandura, & Martinez-Pons, 1992). Individuals who have greater belief in their abilities to accomplish their goals are

more likely to remain diligent and increase their efforts when they fall short of their aspirations (Peake & Cervone, 1989).

It could be argued that perceived self-efficacy is the main contributor to one's choice of, and commitment to goals, in which case, the value in identifying one's confidence in his ability to accomplish a goal is evident in aiding one along the way to achieving a desired HPL (Bandura, 1997). Additionally, in order to support progress toward one's goals, it is necessary to identify what an individual values in order to ensure that his or her goals are value-oriented, holding personal meaning and significance (Beattie, Hardy, & Woodman, 2015).

Goal accomplishment is often times characterized by an increase in perceived self-efficacy due to the mastery over a given task. Therefore, the position is frequently held that individuals will set goals with greater difficulty and achieve more as their perceived self-efficacy continues to strengthen (Bandura, 1993; Hosseini, Pishghadam, & Vahidnia; Locke & Latham, 1990; Zimmerman et al., 1992). Several studies point to the connection between self-efficacy and the ability to cognitively control one's negative and positive thoughts (i.e. strengthen positive thoughts and repress negative thoughts) (Drnovšek, Wincent, & Cardon, 2009; Dweck & Leggett, 1988; Ozer & Bandurea, 1990). This is especially beneficial when looking at the ability to gain mastery over a given task, as individuals with greater cognitive control are more apt to focus on progress, rather than failure, as well as engage in problem-solving strategies despite setbacks, leading to more positive outcomes, and thereby mastery (Dweck & Leggett, 1988).

Individuals with greater perceived self-efficacy have also been found to perceive a greater internal health locus of control (Zielińska-Więczkowska, 2016). This suggests

self-efficacy significantly impacts the amount of health behaviors an individual partakes in due to those behaviors seeming to exist in the realm of their control and resources (Zielińska-Więczkowska, 2016). According to this research, professionals in the helping field should continually reinforce health promoting behaviors in order to enhance perceived self-efficacy, as well as one's perceived control over various influences that impact an HPL. When individuals are more self-efficacious they are at an increased likelihood to partake in self-care, therapeutic processes, rehabilitation processes, and programs that promote health awareness (Zielińska-Więczkowska, 2016).

Because the health-related quality of life greatly impacts the overall quality of life of an individual, it is necessary to look at the various components of health which are significantly impacted by perceived self-efficacy (Sidman, Abundo, & Hritz, 2009). Not only does self-efficacy significantly affect the various components of wellness, (physical, spiritual, intellectual, psychological, and emotional), but Sidman et al. (2009) found it also has predictive value regarding these areas of well-being. This finding has significant relevance in that it sheds light on the underlying mechanism to various areas of wellness (that being self-efficacy), which can help create interventions to address a specific area of health (i.e. emotional health). While striving to enhance an individual's perceived self-efficacy, it is notable that improvement in this cognitive domain can have significant positive impacts on many areas of health-related wellness. Exploring the role of self-efficacy in various domains can provide insight on how self-efficacy commonly impacts an individual's behaviors across multiple domains.

Self-Efficacy and Academia

Several studies have investigated the role of self-efficacy in successful academic performance. This body of research has identified the usefulness of the self-efficacy variable in predicting the persistence and grades of college students (Bong, 2001; Hackett, Betz, Casas, & Rocha-Singh, 1992; Lent et al., 1987). Self-efficacy has been found to be significantly positively correlated with the duration (in hours) of time spent studying among college students (Torres & Solberg, 2001). One particular study addressed the effects of self-efficacy and stress on academic success, and found the self-efficacy and stress factors were negatively correlated, and the self-efficacy and academic success factors were positively correlated (Zajacova, Lynch, & Espenshade, 2005). The results from this study additionally indicated self-efficacy was the strongest predictor of GPA in college freshmen, regardless of the students' past academic performance in high school and despite demographic variables (Zajacova, Lynch, & Espenshade, 2005). Overall, Zajacova et al. (2005) discovered the variable of academic self-efficacy was more predictive of GPA, and the acquisition of college credits than was the variable of perceived stress.

Another study, which looked into the relationship between perceived self-efficacy and academic entitlement, revealed academic entitlement was significantly negatively correlated with academic self-efficacy as it pertains to specific coursework (Boswell, 2012). Those who were more self-efficacious demonstrated less academic entitlement, or beliefs that they were deserving of academic success regardless of the amount of effort put forth to achieve successful outcomes. Unlike individuals who identified with less perceived self-efficacy related to their academics, self-efficacious students were more

likely to display confidence in their abilities to problem-solve when faced with different barriers. These efficacious students were more likely to adhere to the belief they could learn and implement new skills in order to be successful in their coursework, and held themselves to a higher accountability in regards to achieving desirable academic outcomes (Boswell, 2012). College students with a greater degree of academic entitlement, have a tendency to externalize responsibility for the outcomes in their coursework, regardless of the amount of effort put forth. In Boswell's 2012 study, self-efficacy was discovered to be the only factor which predicted academic entitlement among both first-generation students and continuing-generation students.

The cognitive variable of self-efficacy is an important factor to consider among college freshmen when looking at the likelihood that they will remain persistent in their academic pursuits (Friedman & Mandel, 2010; Robbins et al., 2004). In several studies, academic-related self-efficacy has been regarded a predictive variable in academic persistence, academic success, and career development (Hull-Blanks et al., 2005; Robbins et al., 2004). For this reason, Wright, Jenkins-Guarnieri, and Murdock (2012) investigated the role of self-efficacy and college persistence among college freshmen after completing the first semester of college. Results indicated those with heightened college self-efficacy were at greater odds of continuing on into the second semester of their freshmen year and obtaining academic success (Wright, Jenkins-Guarnieri, & Murdock, 2012).

Persistence decisions have also been studied among college students participating in sport related tasks in order to see if self-efficacy plays a significant role in the "taking the first (TFF) option in decision making" (Hepler & Feltz, 2012). The investigators

assessed the participants' level of decision-making self-efficacy as well as their degree of confidence in their decided upon option, and found those who associated with a higher degree of self-efficacy, partook in TFF more often when under time constraints (Hepler & Feltz, 2012).

The cognitive variable of self-efficacy can be further applied to career development and professional success. As many careers require higher education, the link between academic success and persistence and career development becomes apparent. Academic success, achievement, persistence, and goals have all been found to be significantly impacted by perceived self-efficacy (Wright, Jenkins-Guarnieri, & Murdock, 2012). Because career development takes place during college years, college self-efficacy carries over to job-related competency. If a student is confident he or she can acquire the necessary skills and knowledge to be successful in academia, he or she is prone to continue this degree of task-related and skill acquisition confidence into the workforce when required to learn and implement new job-related skills and strategies (Wright, Jenkins-Guarnieri, & Murdock, 2012). Furthermore, a high degree of college self-efficacy increases an individual's confidence in being able to make decisions that lead to success, as well as an individual's desire to persist, problem-solve, and address obstacles; all of which are beneficial for the work environment.

Self-Efficacy and the Workforce

Self-efficacy is especially important in the consideration of entrepreneurs' success at starting up a business and in growing a business (Drnovšek, Wincent, & Cardon, 2009). Regarding the decision-making abilities which are influenced by self-efficacy, entrepreneurs who identify with a higher degree of job-related perceived self-efficacy

spend less time in the decision making process, as they have increased confidence in their choices and their ability to distinguish between ideal and unsuitable opportunities (Drnovšek, Wincent, & Cardon, 2009). Because of this, highly efficacious entrepreneurs are more apt to confidently take part in opportunity exploitation, which leads to enhancement of their brands, increased product line, cost benefits, ideal lead time, resource management, and more adequate customer service (Choi & Shepherd, 2004; Drnovšek, Wincent, & Cardon, 2009; Shook et al., 2003).

The nature of entrepreneurship makes for an appropriate reason to study how the cognitive construct of self-efficacy can be used to predict those who are successful with business start up and growth, as well as the characteristics of those who fail at business ventures. Entrepreneurs who have a high degree of self-efficacy put forth more effort, have greater persistence over time, and create more suitable plans and strategies for effectively completing tasks (Shane et al., 2003). Self-efficacy is highly predictive of an individual's degree of intention in terms of starting a business and acting upon those intentions (Krueger et al., 2000). Additionally, self-efficacy has predictive value when looking into the personal success and the performance and satisfaction of the entrepreneurial individual (Hmieleski & Corbett, 2008; Marman et al., 2002). The higher an entrepreneur's self-efficacy, the greater the intent the individual has in working toward a specific professional goal, and the more likely the individual is to allocate energy and other resources that contribute to goal achievement (Bird, 1988; Kolvereid, 1996).

When considering individuals in the sales industry, self-efficacy positively and significantly correlates to the performance of a salesperson, as well as his or her ability to partake in customer-oriented behaviors which lead to an increase in satisfactory customer

service (Pettijohn, Schaefer, & Burnett, 2014). Self-efficacy has been discovered to positively and significantly influence the sales of life insurance salespersons, as well as real-estate salespersons (Barling & Beattie, 1983; Krishan, Netemeyer, & Boles, 2002). When salespersons are more confident in their abilities to achieve specific sales tasks, they are more likely to develop personal sales-related goals and persistently aim for high sales performance (Brown, Cron, & Slocum, 1998). Furthermore, when salespersons identify a high degree of competency regarding sales performance, and knowledge of the sales process, customer, and industry, they are more likely to perform at a higher level (Petijohn, Schaefer, & Burnett, 2014). Due to this increased confidence, it is thought that sales associates then feel more able to engage in customer-oriented behaviors, as they can do so without being concerned with the possibility that the customer engagement will detract from their ability to meet sales goals (Petijohn, Schaefer, & Burnett, 2014).

Leadership self-efficacy is a distinct form of self-efficacy which identifies the various characteristics of leadership behaviors and traits. Leaders who are highly self-efficacious tend to have positive personality characteristics which promote their leadership skills, such as being emotionally stable, calm, well-adjusted, self-controlled, punctual, reliable, self-disciplined, deliberate, assertive, and upbeat (Ng, Ang, & Chan, 2008). This form of self-efficacy has been found to be predictive of reported leadership satisfaction in job settings. For instance, Reserve Officers' Training Corps (ROTC) cadets who identified a higher degree of leadership self-efficacy in themselves were also identified by their peers, instructors, and other observers to fulfill more effective and positive leadership roles than those who identified with lower leadership self-efficacy (Chemers et al., 2000). In a business setting, managers who expressed increased

competency in their leadership abilities were also found to be more proactive and successful at implementing and achieving positive changes, as indicated by their subordinates (Paglis & Green, 2002). Another study which looked into effective group performance, found group leaders with a high degree of leadership self-efficacy developed better strategies for accomplishing tasks and set higher goals for the group to strive for, which resulted in enhanced group performance (Kane et al., 2002).

Although research supports the relationship between greater perceived self-efficacy and more difficult goal-directedness, Ng, Ang, & Chan (2008) found when leaders are overwhelmed by their workload, their decision making process is impaired, which leads to a decrease in the motivational benefits often seen in highly self-efficacious individuals. In other words, when leaders perceive their workload as being manageable, they are in a better position to benefit from the motivation and good decision making abilities that stem from the effects of having a greater perceived self-efficacy.

Self-Efficacy and Relapse Prevention

Self-efficacy has proven to be a valuable psychological construct when looking at relapse prevention for substance abuse. Abstinence self-efficacy is the domain specific form of efficacy characterized by one believing he or she has the coping skills necessary to handle distressing situations without resorting to the use of substances to cope (Smyth & Wiechelt, 2005).

It is proposed by Smyth and Wiechelt (2005) that by identifying situations which place individuals at high-risk for substance relapse, coping skills can then be taught to the individual, which thereby increases the perceived abstinence self-efficacy. This supports the position of Cantrell, Meisner, Krieschok, Norman, & Piedimonte (1993) in which it is

highly recommended that a key component of relapse prevention treatment involve working to develop coping skills which contribute to an increased perception in personal competency. In doing so, research has demonstrated a decrease in the duration and frequency of relapse periods and increase in duration of sobriety. In other words, abstinence-related self-efficacy has the ability to aid in the prediction of relapse occurrences (Cantrell et al., 1993).

Individuals who are not as adept at acquiring effective coping skills, such as those with personality disorders and significant alcohol or drug problems, identify with having a lower perceived self-efficacy for remaining abstinent during times of increased stress, conflict, or physical discomfort related to withdrawal symptoms (Smyth & Wiechelt, 2005). Positive treatment outcomes are associated with a heightened sense of self-efficacy within an individual with alcohol or drug use difficulties (Annis & Davis, 1988; Colletti et al., 1985; Marlatt & Gordon, 1985; Miller, Ross, Emmerson & Todt, 1989).

Those who are committed to quit smoking can be identified with a higher degree of self-efficacy pertaining to smoking cessation, compared to those characterized by less motivation and commitment to strive for this desired change (Martinez et al., 2010). When facing internal and external stimuli, individuals with a higher degree of abstinence self-efficacy have more confidence in their ability to control their withdrawal symptoms and refrain from the smoking behavior (Martinez et al., 2010). On the other hand, those with lower perceived self-efficacy viewed themselves as having less internal and external control while in the face of external stimuli (being around others who are smoking at parties or bars for example), internal stimuli (such as feeling depressed, stressed, or angry), and physical discomfort from withdrawal symptoms.

When predicting lapses and relapses in adolescents and adults who have quit smoking, self-efficacy strongly correlates with one's proneness to either succeed at quitting or give into internal or external cues to smoke (Gwaltney et al., 2001; Zundert, Engels, & Kuntsche, 2011). Individuals who report greater perceived self-efficacy identify fewer cravings and negative mood states related to nicotine withdrawal (Gwaltney, Shiffman, & Sayette, 2005). In adolescence, self-efficacy vastly decreases when negative mood states are experienced following smoking cessation (Zundert, Engels, & Kuntsche, 2011). Additional factors that relate to decreased smoking cessation self-efficacy include: seeing others partake in smoking behaviors, experiencing heightened stress, and consuming alcoholic beverages (Zundert, Engels, & Kuntsche, 2011). This supports the finding of Gwaltney, Shiffman, & Sayette (2005) that identifies seeing others smoke as being significantly negatively correlated with perceived self-efficacy.

Self-Efficacy and Parenting

Self-efficacy plays an important role in effective parenting practices. Research has demonstrated that parents who identify greater personal competency pertaining to parenting are more likely to have increased positive interactions with their children, a higher degree of warmth and responsiveness to their children, and provide an overall greater quality of care (Holmeck et al., 1995; Lamborn et al., 1991; Stifter & Bono, 1998; Teti & Gelfand, 1991; Tucker et al., 1998). Self-efficacy, in the parenting domain, has been linked to a higher degree of maternal sensitivity and nurturing behaviors, higher self-esteem in children, better school performance among children, and better social skills in children (Holmeck et al., 1995; Teti & Gelfand, 1991). Additionally, parents with

greater perceived self-efficacy parent children who are less prone to anxiety and depression, leading parental self-efficacy to be termed a protective factor for children and adolescents (Holmbeck et al., 1995; Patterson et al., 1989).

Looking at parental self-efficacy among 25 mothers of children with Down syndrome, Gilmore and Cuskelly (2002) found as parents gain mastery with successfully meeting the needs of their child with the disability, self-efficacy increases. As self-efficacy increases, perceived stress related to parenting a child with an intellectual disability decreases, and satisfaction regarding the parenting role increases. A significant positive correlation between parental role satisfaction and self-efficacy was found in this study.

Taking into account the differences in parenting styles, Gilmore and Cuskelly (2002) found the mothers who acknowledged greater perceived self-efficacy and satisfaction in their roles also aligned with a parenting style that promoted autonomy and parental involvement with their children. Additionally, these efficacious and satisfied mothers took a parenting stance that was more child-centered and consistent than those who identified less parenting satisfaction and lower perceived self-efficacy. These relationships indicate positive and nurturing parenting styles are likely to come from individuals who believe they are more competent in the role of a parent and who experience more satisfaction in being a parent. Greater satisfaction and competency may also promote an environment that is more effective and efficient at problem-solving and handling difficult behaviors with children (Gilmore & Cuskelly, 2002).

Sanders and Woolley (2004) investigated the influence of maternal self-efficacy on parenting styles as well, more specifically, the style of discipline practices. This study

revealed parental self-efficacy can be used to predict discipline styles among parents, whether referring to a harsh disciplinary style or a permissive and irregular disciplinary style. Sanders and Woolley (2004) suggest using programs such as the Triple P-Positive Parenting Program to further enhance parental self-efficacy through skills training. Programs like the Triple P can teach parents the skills necessary to become consistent in their disciplinary styles, more effective in their problem-solving abilities, and more equipped at promoting a positive parent-child environment characterized by activities that encourage desirable behaviors in their children.

Not only is parental self-efficacy promoted via programs like the Triple P, but Hess, Teti, and Hussey-Gardner (2004) found providing parents with education regarding the developmental stages of their children plays a significant role in increasing parental self-efficacy. Parents who have greater knowledge regarding the development of their children demonstrate greater competency when engaging in play interactions with their children (Hess, Teti, & Hussey-Gardner, 2004). In contrast, parents who claim a high degree of self-efficacy, but lack knowledge of childhood developmental stages were characterized as being least sensitive during play interactions with their children (Hess, Teti, & Hussey-Gardner, 2004). These parents who claimed high self-efficacy, but lacked in sensitivity were deemed “naively confident” in Hess, Teti, and Hussey-Gardner’s (2004) investigation.

Self-Efficacy and Older Adults

Greater perceived self-efficacy among the older adult population significantly influences the degree in which older adults partake in adequate self-care, as well as the degree to which these individuals identify with healthy aging (Cha, Seo, & Sok, 2012;

Kostka & Jachimowicz, 2010). Self-efficacy regarding exercise behaviors is not only predictive of physical activity levels in adolescents and young adults, but is predictive of exercise in older adults as well (McAuley et al., 1999). Older adults with a higher degree of exercise self-efficacy spend more time participating in exercise and engaging in longer-term exercise programs. Furthermore, Azizan, Justine, and Kuan (2013) report their findings that older adults who participate in exercise programs continue to experience an increase in their level of confidence, which thereby acts to increase their exercise goal-directedness, persistence, and performance. Studies which have controlled for biological and behavioral influences, also found exercise self-efficacy in older adults to be predictive of exercise behavior at a significant level (Cromwell & Adams, 2006). Strengthening perceived exercise self-efficacy in older adults can reduce not only healthcare costs, but also the use of healthcare services and the risk of some age-related illnesses and disabilities, while improving an individual's health, cognitive functioning, sleep quality, well-being, health-related quality of life, and quality of life (Geda, Roberts, & Knopman, 2010; King & King, 2010; Scult et al., 2015). Additionally, self-efficacy in older adults is significantly positively correlated with greater resilience against the development of depression (Holahan & Holahan, 1987).

Other types of domain specific self-efficacy that have been focused on in the research with older adults include balance self-efficacy, falls self-efficacy, and walking self-efficacy. Because physical and mental health typically decline with age, it is important to look at the areas of self-efficacy that could further influence one's motivation and desire to remain physically and mentally active. Older adults who have low perceived competence in regards to balance, falls, and walking are at a greater risk

for deterioration in functioning as well as a lower health-related quality of life (Cumming, Salkeld, Thomas, & Szonyi, 2000; Mendes de Leon, Seeman, Baker, Richardson, & Tinetti, 1996). Furthermore, when these three areas of self-efficacy are low, older adults are more prone to avoidance behaviors and self-restriction of activity, thereby increasing the risk for muscle atrophy and more frequent falls (Cumming, Salkeld, Thomas, & Szonyi, 2000; Myers et al., 1996; Tinetti, Mendes de Leon, Doucette, & Baker, 1994). When older adults experience mastery, have the opportunity to view peers acquiring task mastery, receive affirmation from health professionals regarding their physical abilities, and obtain feedback pertaining to their current physical symptomatology, self-efficacy can be increased. When self-efficacy is increased, research shows fewer cognitive deficits and fewer physical impairments regarding balance, motor function, and walking ability (Bandura, 1995; Bandura, 1997; Hellstrom, Lindmark, & Fugl-Meyer, 2002; Hellstrom, Lindmark, Wahlberg, & Fugl-Meyer, 2003).

Self-Efficacy and Illnesses

While a plethora of research has been carried out to examine the role of self-efficacy among asymptomatic individuals, several investigations have also studied the self-efficacy construct in regards to rehabilitation and self-care for individuals with medical illnesses such as cardiac disease, cancer, and diabetes. In the consideration of cardiac recovery, self-efficacy is a mediator for behavioral changes that benefit recovery and rehabilitation outcomes (Berkhuisen, Nieuwland, Buunk, Sanderman, & Rispens, 1999; Woodgate & Brawley, 2008). Not only can a higher degree of self-efficacy contribute to increased physical activity during rehabilitation, but increased exercise behaviors can contribute to an increase in self-efficacy, thereby creating a cyclical pattern

of more frequent health promoting behaviors and enhancements in self-efficacy pertaining to that area of health (Brawley, Rejeski, Angove, & Fox, 2003; Woodgate & Brawley, 2008). While rehabilitation is taking place, individuals are typically encouraged to exercise more frequently, and exercise at an increased level of intensity. Exercise task self-efficacy highly correlates with the degree of success an individual achieves in actually reaching the desired outcome of more frequent moderate to vigorous exercise involvement (Woodgate, Brawley, & Weston, 2005).

Cancer-related self-efficacy plays an important role in individuals believing in their ability to persistently cope with the physical and psychological consequences associated with battling cancer (Lev, 1997). Cancer survivors who have a higher degree of cancer-related self-efficacy portray greater confidence to manage the negative consequences of the disease, and actively partake in self-care behaviors which enhance their health-related quality of life and quality of life (Barlow, Bancroft, & Turner, 2005; Lev, 1997; Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001). Investigations by Foster et al. (2015) revealed patients with greater cancer-related self-efficacy had more confidence in their ability to locate information and support, as well as to utilize the support services available. Cancer survivors who are at risk for perceiving low cancer-related self-efficacy are those who experience increased physical pain, depressive symptoms, inadequate interpersonal support, and who perceive lower well-being and a greater threat due to the cancer (Foster et al., 2015). An additional noteworthy finding of cancer-related self-efficacy is that it is significantly positively correlated with the long-term involvement in an HPL (Mosher et al., 2013).

Individuals with diabetes, who have high self-efficacy perceptions regarding their ability to manage the disease, demonstrate high degrees of effort and persistence in monitoring their symptoms (Quinn, Khokhar, Weed, Barr, & Gruber-Baldini, 2015). These individuals are also characterized by more consistent self-monitoring of intentional behavioral changes they engage in while learning how to manage their diabetes more effectively and efficiently (Quinn, Khokhar, Weed, Barr, & Gruber-Baldini, 2015). These highly efficacious individuals also have more proactive behaviors in utilizing services from diabetes educators in order to learn and implement effective interventions to manage this disease. Because diabetes is so much of a self-managed disease, it is essential individuals believe in their capabilities to effectively participate in self-care behaviors in order to maintain optimal health. Some behaviors self-efficacy is significantly positively correlated with include: the maintenance of a healthy diet, the conscientiousness to have medications adjusted when necessary, the ability to responsibly and adequately test glucose levels, and the increased engagement in physical activity (Brouwer & Mosack, 2012; Norris, Engelgau, & narayan, 2001; Sousa et al., 2005).

Self-Efficacy Summary

Gaining an idea of how perceived self-efficacy impacts individuals across many domains is beneficial in order for one to understand the significance of this psychological construct. From academia and the workforce, to parenting and disease management, highly efficacious people are in a better position to manage life stressors effectively, and progress through the stages of change. Those with a higher degree of self-efficacy, regardless of the specific domain, consistently demonstrate greater ownership over their behaviors, commitment to an HPL, positive outlooks on their ability to influence their

environment, improved problem-solving abilities, and greater overall well-being in a wide range of health domains.

It is essential to understand an individual's degree of perceived self-efficacy when providing services that promote desirable behavioral changes, as the act of changing behaviors encompasses setting new goals regarding the implementation of desirable behaviors. Based off of a plethora of research, individuals with a high degree of self-efficacy, are more likely to persistently engage in self-care and set challenging goals to improve their health in various domains. Due to the heightened level of commitment and motivation seen in highly efficacious individuals, they are more likely to then engage actively in designing and implementing plans of action to reach those goals. Despite obstacles, efficacious individuals are more likely to desire to strengthen their abilities and learn new skills in order to actively work to obtain what they set out to do. Highly efficacious individuals are characterized by a degree of diligence and perseverance that promotes successful outcomes and high achievement.

As demonstrated by research, self-efficacy plays an influential role in an individual engaging in exercise behaviors. In order for one to live an HPL characterized by an exceptional health-related quality of life, exercise behaviors must be present. Therefore, a high degree of importance is placed on the HPM component of self-efficacy.

Need and Importance of the Study

Promoting a healthy lifestyle within the provision of health services plays an imperative role in increasing one's quality of life. Within the health service environment, this can be done by strengthening one's perceived self-efficacy, increasing perceived benefits of health promoting behaviors, decreasing perceived barriers to engaging in

health promoting behaviors, addressing interpersonal support, and boosting commitment to a plan of action by addressing competing preferences, competing demands, individual values, and the selection of goals.

Continuing to explore the factors related to physical activity and physical inactivity can aid in the goal of increasing health promoting behaviors. Increasing positive exercise-related behaviors is especially imperative in the college-aged population, as young adults train for desired careers and prepare to become leaders in the community. By creating supportive interventions to increase health promoting behaviors among college students, those in the helping role can increase the likelihood for college students to obtain success in many different domains and have greater positive psychological and physical well-being due to their engagement in an HPL. This benefits the population at large, as individuals who have greater psychological and physical health are better able to serve the community in their chosen profession, and are less likely to be susceptible to obesity-related diseases and disorders which cost the country billions in healthcare dollars (Andreyeva, Luedicke, & Wang, 2014; Cawley, 2007).

The HPM can be utilized within the college population with the intention of identifying factors that contribute to lack of participation in an HPL. Once those specific factors are identified, interventions can be designed to target the factors that are contributing to a lack of physical activity involvement or nutritional eating regimens. This study aims to identify what types of benefits and barriers regarding exercise the college-aged population identifies with, the degree of self-efficacy college students have in partaking in physical activity, the overall level of wellness and self-actualization these students have regarding six different domains of health, and the current stage of change

each participant is in. By acquiring this information, suggestions will be offered regarding how to address the identified barriers in order to improve the likelihood of engagement in an HPL. Upon identification of the specific components, as they pertain to health behavior involvement, interventions can be implemented, and future research regarding the effectiveness of those interventions can take place.

Research Objective and Hypotheses

The purpose of this study is to identify if there are relationships between perceived barriers and benefits to participating in an HPL, one's self-efficacy in regards to his or her ability to partake in an HPL, and perceived self-efficacy and current stage change as it pertains to physical activity. Based off of the findings, a description of the relationship is to be provided and noteworthy discoveries are to be examined.

Specific hypotheses for the study include:

1. There will be a significant negative correlation between individuals partaking in an HPL and the amount of perceived barriers.
2. There will be a significant positive correlation between individuals partaking in an HPL and the amount of perceived benefits.
3. There will be a significant positive correlation between individuals partaking in an HPL and perceived self-efficacy.
4. There will be significantly stronger predictive ability of an HPL by the perceived self-efficacy component, rather than the perceived benefits or barriers to exercise components.

5. There will be a significant positive correlation between perceived self-efficacy and later stages of the physical activity stages of change (i.e. action and maintenance stages).

CHAPTER III

METHODOLOGY AND PROCEDURE

Design

This study was a correlational survey of university undergraduate students. The study used several instruments to investigate correlations between exercise-related perceived self-efficacy, perceived benefits of, and barriers to exercise, and present involvement in a health promoting lifestyle (HPL), including current physical activity participation and exercise stages of change.

Participants and Setting

Participants for the study were undergraduate students enrolled in general psychology courses at Pittsburg State University in Pittsburg, Kansas. Ninety-six individuals participated in this study, 47 (49%) of which were females, and 49 (51%) participants were males. Those participating completed the study for fulfillment of research requirement for their general psychology course. The setting for the data collection was a regional comprehensive university. Participants were of consenting age (≥ 18 years) and capable of completing the survey in English.

Measures

The overall survey used in this study was made up of five instruments to obtain information regarding basic demographics, current involvement in an HPL, perceived

benefits of, and barriers to exercise, perceived self-efficacy pertaining to exercise, and current stages of change regarding physical activity. All measures were pencil and paper self-report scales.

The first survey tool was designed to collect information regarding the participants' demographic information, the type of physical activities he or she was currently partaking in, his or her preferences regarding physical activities, and his or her preferences in regards to the ideal means of receiving didactic information pertaining to exercise and other health promoting behaviors (see Appendix B).

The second measure completed was the Health Promoting Lifestyle Profile-II (HPLP-II). This measure was utilized to assess for the participants' current involvement in an HPL in regards to six different health dimensions: spiritual growth, interpersonal relations, nutrition, physical activity, health responsibility, and stress management (see Appendix B).

The next scale completed by the participants was the Exercise Benefits/Barriers Scale (EBBS) (see Appendix B). This instrument was used to specify what particular barriers to, and benefits of physical activity the participants most identified with, as well as how positively or negatively they perceived physical activity.

The fourth instrument was the Self-Efficacy for Exercise (SEE) Scale which was completed by the participants to gauge their perception of their ability to participate in exercise, despite variables such as fatigue, lack of enjoyment, or bodily soreness (see Appendix B).

The final instrument completed by the participants was the Physical Activity Stages of Change Questionnaire (see Appendix B). By having the participants complete

this questionnaire, information regarding their current stages of change pertaining to engagement in a physical active lifestyle was obtained.

Health Promoting Lifestyle Profile-II

The Health Promoting Lifestyle Profile-II (Adult Version) was created by Susan N. Walker, Karen R. Sechrist, and Nola J. Pender in 1987, and was revised to its current format (HPLP-II) in 1995. The self-report measure was originally developed in English and Spanish, and has been translated and validated in Persian, Japanese, Turkish, Chinese, and Portuguese. The questionnaire has been used in a wide variety of populations including college students, older adults, health professionals, and individuals with debilitating diseases such as multiple sclerosis, cancer, spinal cord injuries, and fibromyalgia (Beal, Stuifbergen, & Brown, 2009; Chen, Wu, Hwang, & Li, 2010; Jackson, Tucker, & Herman, 2007; Tyszka & Farber, 2010).

The HPLP-II is made up of 52 items regarding six different domains of health:

1. Spiritual growth
2. Interpersonal relations
3. Nutrition
4. Physical activity
5. Health responsibility
6. Stress management

The six health domains are intended to measure the level of participation in an HPL which is characterized by “a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual” (Walker, Sechrist, & Pender, 1987). The items are rated on

a 4-point response format in which the rater specifies how frequent the health promoting behavior occurs: never, sometimes, often, or routinely. The internal consistency reliability of the measure is 0.943 and the internal consistency for the subscales ranges from 0.793 and 0.872 (Walker & Hill-Polerecky, 1996).

To score the HPLP-II, points are assigned to each rating with “never” receiving 1 point, “sometimes” receiving 2 points, “often” receiving 3 points, and “routinely” receiving 4 points and then a mean is calculated of the individual’s endorsements to all 52 items to obtain the overall HPL score. To score each subscale, the items for each are summed and then a mean is calculated for each subscale.

Spiritual Growth Subscale

The spiritual growth subscale encompasses the inner characteristics of an individual such as peace, personal goals and life ambitions, values and morals that create purpose and life meaning, contentment regarding oneself, abilities, and limitations while being mindful of opportunities that permit personal growth, and finding wholeness and harmony. The aforementioned personal resources are thought to be accomplished via three means of “transcending, connecting, and developing” (Walker & Hill-Polerecky, 1996). The spiritual growth subscale is made up of nine items and has a Cronbach’s alpha of 0.836 (Sousa, Gaspar, Vaz, Gonzaga, & Dixe, 2014).

Interpersonal Relations Subscale

The nine item interpersonal relations subscale considers the types of relationship encounters one has with others: meaningful versus casual. This is distinguished by the type of verbal and nonverbal communication that is employed as a means to share

thoughts and feelings with another. The Cronbach alpha for this subscale is 0.830 (Sousa et al., 2014).

Nutrition Subscale

The nutrition subscale regards the intentional behaviors one partakes in to become knowledgeable in the area of selecting and consuming foods which provide well-balanced nutritional values in order to support overall health and well-being. This domain also encompasses the degree to which the foods which are chosen by an individual are consistent with national food guidelines (USDA, 1992). The nutrition subscale has a Cronbach's alpha of 0.726 and is made up of nine items (Sousa et al., 2014).

Physical Activity Subscale

The physical activity subscale includes eight items which assess for any physical active behaviors that occur within the context of an exercise regimen or during activities of daily living, such as work and leisure. The behaviors that are included involve participation on a regular basis in light, moderate, or vigorous activities. This subscale has a Cronbach alpha of 0.835 (Sousa et al., 2014).

Health Responsibility Subscale

The health responsibility subscale consists of the deliberate behaviors which reflect a health-conscious mindset by displaying attentiveness toward one's health, a regard for educational opportunities pertaining to health, and responsibility when seeking professional assistance by becoming an informed consumer of health services. Health responsibility is reflected in individuals who view themselves as being highly

accountable for their own well-being. This subscale has nine items and a Cronbach alpha of 0.835 (Sousa et al., 2014).

Stress Management Subscale

The stress management subscale embodies one's ability to identify and implement healthy and effective psychological and physical means of reducing tension. This domain is made up of eight items, and the Cronbach alpha for the stress management subscale is 0.694 (Sousa et al., 2014).

Exercise Benefits/Barriers Scale

The Exercise Benefits/Barriers Scale (EBBS) was developed by Pender, Walker, and Sechrist in 1987 as a means of identifying individual's perceived benefits of, and barriers to exercise participation. The measure is made up of 43 items and has two subscales: a benefits subscale, and a barriers subscale. Individuals rate the degree to which they agree or disagree with the items by circling strongly agree (SA), agree (A), disagree (D), or strongly disagree (SD). The EBBS has an overall Chronbach's alpha of 0.954 and a test-retest reliability value of 0.89 (Sechrist, Walker, & Pender, 1987). The benefits subscale is made up of 29 items, has a standardized alpha of 0.954, and has test-retest reliability of 0.89 (Sechrist, Walker, & Pender, 1987). The barriers subscale consists of 14 items, has a standardized alpha of 0.866, and a test-retest reliability of 0.77 (Sechrist, Walker, & Pender, 1987).

When scoring the measure as a whole, barrier scale items are reverse-scored. A score for the total measure can range from 43 to 172, with higher scores indicating a more positive perception of exercise. When the benefit scale is scored alone, a score can range from 29 and 116, with higher scores indicative of a greater amount of perceived

benefits to exercise. A score on the barrier scale, when used alone, can range from 14 to 56, with higher scores demonstrating a greater perception of exercise barriers.

Scoring information offered by the developers of the EBBS includes instructions on how to handle missing data as well. Sechrist, Walker, and Pender (1987) posit two possible ways to handle these occurrences; one can discard the responses if more than five percent of the items were left unanswered, or one could substitute the median of the responses on the particular score if less than five percent were left unanswered. By using the median to substitute, the potential of obtaining a falsely low score can be prevented.

Self-Efficacy for Exercise Scale

The Self-Efficacy for Exercise (SEE) scale was developed by Resnick and Jenkins in 2000. It consists of nine items which assess for one's perception regarding his or her ability to partake in exercise despite the presence of different barriers: unfavorable weather, boredom, physical discomfort, solitude, lack of enjoyment, time constraints, fatigue, stress, and depressed mood. The SEE has an internal consistency of 0.92, and has been validated in studies that utilize the Short Form-12 Item Health Survey to gather information about mental and physical health which points to the ability of the SEE to predict exercise involvement (Resnick & Jenkins, 2000). The SEE is scored by summing all of the responses together, resulting in a score ranging from 0-90 in which greater perceived self-efficacy for exercise is represented by higher obtained scores.

Physical Activity Stages of Change Questionnaire

The Physical Activity Stages of Change Questionnaire was developed by Marcus, Selby, Niaura, and Rossi (1992) to determine the stage of change an individual is in regarding exercise (pre-contemplation, contemplation, preparation, decision/action, or

maintenance). Previous research by Marcus and Simkin (1993) has demonstrated concurrent validity for this measure with the administration of the Seven Day Physical Activity Recall Questionnaire. In addition, a Kappa index of reliability of 0.78 has been obtained over a period of two weeks (Marcus, Selby, Niaura, & Rossi, 1992). The questionnaire consists of five yes-no items which assess for the participation in moderate physical activity for a total duration of 30 minutes a day and a frequency of at least five days per week. Examples of moderate physical activity include brisk walking, heavy house cleaning, jogging, swimming, bicycling, and yard work (Marcus & Forsyth, 2003).

Scoring the measure is especially quick and straight forward. If the first and second items of the questionnaire are not endorsed, a score of zero is assigned and the individual is identified as being in the pre-contemplation stage. The contemplation stage is identified when an individual endorses the second item, but did not endorse the first item of the questionnaire. The third stage of physical activity (preparation) is classified when question 1 is endorsed, but question 3 was not endorsed. A classification of the decision or action stage of change is assigned to those who endorse items one and three, but not item four. Lastly, the maintenance stage of change is characterized by those who endorse items one, three, and four on the questionnaire. The final item on the questionnaire has the purpose of aiding in the identification of relapse as indicated by a previous routine of physical activity lasting for at least three months, but a current physical inactivity is endorsed.

Procedure

Human research subject approval was obtained from the Protection of Human Subjects (IRB) at Pittsburg State University prior to the survey conduction. Data

collection was completed during the 2016 fall semester during the month of October at Pittsburg State University in Pittsburg, Kansas. The surveys were administered by the principle investigator of the study. Volunteers were informed that the purpose of the study was to look at university students' attitudes toward exercise. Participants were ensured of their anonymity and were provided with an informed consent document to read, ask questions about, and provide a consenting signature (see Appendix C for the Informed Consent document). Instructions for the measures were provided in written format. Those participating in the study were informed that they could withdraw their involvement in the study at any time without any penalty.

Five self-report questionnaires were administered to the volunteering participants following the provision and signing of the informed consent document. The questionnaires were dispersed in packets which were already labeled with numerical identification codes to ensure the anonymity of the participants. Survey data was scored and entered into statistical software by the chief investigator of this study.

Analysis Procedures

In order to examine the direct correlations between the variables of self-efficacy, perceived benefits and barriers, participation in an HPL, and physical activity stage of change, correlational analyses were carried out by utilizing the Statistical Package for the Social Sciences (SPSS) statistics software. Correlational analyses were performed to test four direct relationships which included: 1) HPL and perceived barriers; 2) HPL and perceived benefits; 3) HPL and perceived self-efficacy; and 4) Perceived self-efficacy and stages of change.

CHAPTER IV

RESULTS

A total of 96 individuals (47 females and 49 males) participated in this study. Of the 96 participants, 82 individuals (85%) were White/Caucasian, five (5.2%) were Asian/Pacific Islander, three (3.1%) were Hispanic/Latino, two (2.1%) were Black/African-American, one (1.0%) was American Indian/Alaskan Native, and three (3.1%) indicated they were mixed (White/Asian, White/Black/American Indian, and Black/Hispanic). The most common age-range of the participants was 18 to 20 years, with 83 participants (86.5%) falling into this age classification. Seven participants (7.3%) were in the age range of 21-24, five participants (5.2%) were in the age-range of 25-28, and one participant (1.0%) fell into the age-range of 29-39 years. Regarding the academic classification of the participants, 83 (86.5%) were freshmen, six (6.3%) were sophomores, four (4.2%) were juniors, and three (3.1%) were seniors.

Means and standard deviations for the Health Promoting Lifestyle Profile, the Exercise Benefits and Barriers Scale and its subscales, the Self-Efficacy for Exercise Scale, and the Physical Activity Stages of Change Questionnaire are displayed in Table 1.

There were no statistically significant gender differences between men and women on any variables, with the exception of the Self-Efficacy for Exercise Scale. At the .01 level there was a significant difference between males and females on this scale.

One-sample t-tests were used to compare the gender differences between participants' Self-Efficacy for Exercise Scale scores. Male participants reported a higher degree of exercise-related self-efficacy ($M = 63.88$, $SD = 19.34$), $t(48) = 23.12$, $p < 0.01$. The one-sample t-test for females ($M = 44.11$, $SD = 17.95$) resulted in, $t(46) = 16.85$, $p < 0.01$, demonstrating a significantly lower degree of perceived self-efficacy for exercise, as compared to male participants. Gender differences for each of the surveys are displayed in Table 2.

Spearman Correlation coefficients (one-tailed tests), were implemented for each gender to look for differences in relationships between the Self-Efficacy for Exercise Scale and Health Promoting Lifestyle Profile-II as well as between the Self-Efficacy for Exercise Scale and the Physical Activity Stages of Change Questionnaire. For male participants, a significant positive correlation at the .01 level was found to exist between the Health Promoting Lifestyle Profile-II ($M = 2.62$) and Self-Efficacy for Exercise Scale ($M = 63.88$), $r(49) = .394$, $p < .01$. Similarly, for female participants, a significant positive correlation at the .01 level of significance was found between the Health Promoting Lifestyle Profile-II ($M = 2.67$) and the Self-Efficacy for Exercise Scale ($M = 44.11$), $r(47) = .340$, $p < .01$.

In regards to the correlation between the Self-Efficacy for Exercise Scale ($M = 63.88$) and the Physical Activity Stages of Change Questionnaire ($M = 4.33$), a significant positive correlation at the .05 level was found to exist for male participants, $r(49) = .302$, $p < .05$. Similarly, for female participants, a significant positive correlation at the .05 significance level was found between the Self-Efficacy for Exercise Scale ($M = 44.11$) and the Physical Activity Stages of Change Questionnaire ($M = 3.81$), $r(47) =$

.253, $p < .05$. The correlations between the scales and subscales for all participants are shown in Table 3.

Male participants identified with a higher degree of self-efficacy ($M = 63.88$) for exercise in the face of various barriers, than did female participants ($M = 44.11$). Overall, of the 216 times that low-degrees of perceived self-efficacy were endorsed, 157 (72.7%) of those came from female participants, and just 59 (27.3%) of the endorsed low-degree perceived self-efficacy came from male participants. Table 4 and Figure 1 display the differences between males and females regarding each barrier's potential to impact perceived self-efficacy.

Spearman Correlation coefficients (one-tailed tests), were used to compare the Health Promoting Lifestyle Profile-II to the Barriers Subscale and the Benefits Subscale of the Exercise Benefits and Barriers Scale. A significant negative correlation at the .01 level was found between the Health Promoting Lifestyle Profile-II ($M = 2.64$) and the Barriers Subscale ($M = 27.73$), $r(96) = -.481$, $p < .01$. A significant positive correlation was found at the .01 significance level between the Health Promoting Lifestyle Profile-II ($M = 2.64$) and the Benefits Subscale ($M = 97.5$), $r(96) = .665$, $p < .01$.

Results from the Exercise Benefits/Barriers Scale revealed the top three barriers to exercise for this sample to be:

1. "Exercise tires me" (70.8% of participants)
2. "I am fatigued by exercise" (59.4% of participants)
3. "Exercise is hard work for me" (56.3% of participants)

The frequency each perceived barrier was endorsed by the participants can be found in Figure 2.

The top three benefits of exercise were found to be

1. “Exercising increases my level of physical fitness” (70.8% of participants)
2. “Exercise increases my muscle strength” (65.6% of participants)
3. “Exercise improves the way my body looks” (64.6% of participants).

The top four benefits that were least acknowledged by the participants included:

1. “Exercising increases my acceptance by others” (was not endorsed by 81.2% of participants)
2. “Exercising helps me decrease my fatigue” (was not endorsed by 81.2% of participants)
3. “My disposition is improved with exercise” (was not endorsed by 76.0% of participants)
4. “Exercising is a good way for me to meet new people” (was not endorsed by 72.9% of participants).

The frequency in which each benefit to exercise was endorsed can be found in Figure 3.

There were no significant gender differences for the subscales on the Health Promoting Lifestyle Profile-II. All subscales correlated with the overall Health Promoting Lifestyle Profile-II score at a .01 level of significance (see Table 5).

Participants were asked on the Demographics Information Survey (Appendix B) to identify their top three preferences regarding how they would prefer to receive information about physical activity and health promotion. The number one way the students in this study wish to receive information is through the internet (31.33% of participants). Receiving information from educational classes offered at the university was the second most preferred way to learn about health promotion among the

participants (17.56%). The third preferred method of obtaining health promotion tips was receiving information via community classes (11.83%). Results for the other methods of receiving information can be found in Figure 4.

CHAPTER V

DISCUSSION

Discussion of Findings

The goal of this study was to identify significant characteristics from the Health Promotion Model (HPM) that are characteristic of university students who engage in a health promoting lifestyle (HPL). Because previous studies have continually stressed the importance of self-efficacy in the role of positive behavioral changes, this study sought to uncover correlations between self-efficacy and an HPL, as well as perceived benefits and barriers to exercise and physical activity stages of change.

The first hypothesis was that a significant negative correlation would exist between individuals partaking in an HPL and the amount of perceived barriers to exercise. This hypothesis was supported. A significant negative correlation was found at the .01 level between an HPL and perceived barriers to exercise, indicating individuals who perceived a greater amount of barriers to exercise participated less in an HPL than those who perceived few barriers to exercise.

The second hypothesis made was that a significant positive correlation would exist between individuals partaking in an HPL and perceived benefits to exercise. Hypothesis 2 was supported. A significant positive correlation was revealed between an HPL and perceived benefits to exercise at the .01 level of significance. This indicated

individuals who actively engaged in an HPL could identify more benefits of engaging in exercise than those who were not as engaged in an HPL.

Next, in Hypothesis 3, it was predicted that a significant positive correlation would be revealed between individuals partaking in an HPL and perceived self-efficacy for exercise. While there were gender differences regarding the variable of perceived self-efficacy, Hypothesis 3 was supported. Significant positive correlations at the .01 level were found to exist between an HPL and perceived self-efficacy for exercise, for participants overall, as well as for male participants alone and female participants alone. This indicated individuals with a high degree of exercise-related self-efficacy were more likely to be involved in an HPL than those with a lower degree of self-efficacy for exercise.

Hypothesis 4 predicted there would be significantly stronger predictability of an HPL when considering the component of perceived self-efficacy for the participants, rather than perceived barriers to, or benefits of exercise. This hypothesis was not supported. As a whole, involvement in an HPL showed larger correlation values with perceived benefits to exercise, rather than by the hypothesized perceived self-efficacy for exercise, although these differences were not tested for statistical significance. This was also the case when looking at the gender differences; greater predictability for an HPL was found in the perceived benefits of exercise variable than in the perceived self-efficacy for exercise variable for both males and females.

Lastly, it was hypothesized that a significant positive correlation would exist between perceived self-efficacy and the later stages of the physical activity stages of change. Hypothesis 5 was supported with a significant positive correlation at the .01

level between perceived self-efficacy for exercise and the later physical activity stages of change for the overall sample. Again, because gender differences were revealed for the self-efficacy for exercise variable, this relationship was considered for each gender in addition to the total combined participants. When considered separately, a significant positive correlation was still found to exist for each gender at the .05 level of significance. These correlations indicate as individuals experience an increase in exercise-related self-efficacy, they progress through the physical activity stages of change, where those in the later stages are characterized by a heightened sense of self-efficacy for exercise.

Implications of Study

By expanding upon previous research regarding the influence of the HPM components on an HPL, this research offers a magnified look at the factors of the HPM which highly influence university students' involvement in an HPL and exercise behaviors. Moreover, it provides considerable insight into the importance of identifying an individual's current stage of change status, and perceived benefits, barriers, and self-efficacy pertaining to exercise in order to increase physical activity involvement and engagement in an HPL.

A noteworthy implication from this study is a crucial light shed upon how gaining an understanding of college students' cognitive and affective perspectives regarding exercise can potentially play an imperative role in shaping and implementing interventions to address obesity across university campuses today. The majority of students in this study identified internal barriers to exercise such as being tired, feeling fatigued, and viewing exercise as hard work. With this information, interventions can be

created to target perceived barriers and expand students' knowledge regarding the positive benefits of exercise on one's quality of sleep, energy level, and sense of accomplishment.

Furthermore, this study highlighted the importance of identifying students' preferred method on how they wish to receive information about health promotion. This allows for interventions to be individualized to best serve the campus at large. Because students in this study prefer to receive information through internet resources, educational university classes, and community classes, attempts to address perceived barriers should be done according to the identified preferences of the students. For this sample of university students, that would mean addressing the perceived internal barriers by expanding upon the benefits via internet resources (i.e. electronic newsletters, short video clips on the university's Facebook page, or talk show stories produced by the university's broadcasting program).

If universities today desire to improve the overall physical and mental well-being of students, it is going to require effort in identifying the perceptions and preferences of their students. Until then, universities may be spending money to create various programs, but may do so unsuccessfully if the programs are not catering to the vast majority of the students. If we accept that identifying perceived barriers, benefits, and self-efficacy pertaining exercise plays an essential role in promoting exercise behaviors, as demonstrated by the findings from this study and previous studies, then the goal of helping students engage in an HPL becomes more defined in knowing where to begin: with the identification of the influence the HPM components have on an HPL.

Learning how to improve students' perceived self-efficacy for exercise may also guide those in helping roles on how to improve perceived self-efficacy in other health domains. This may create opportunities to help students strengthen their competence and confidence in many areas of life, improving not only their health-related quality of life, but their overall quality of life as well.

Limitations of Study

Data were gathered via self-report measures that did not have validity scales. As such, all the information gathered from the participants was taken at face value and accuracy was dependent upon their ability to provide correct reports of their experiences and perspectives. Self-report measures have the potential of being influenced by personal biases such as selective memory (recalling or failing to recall particular experiences in the past), attribution (erroneously attributing positive or negative experiences or outcomes to inaccurate forces, either internal or external), and exaggeration (placing greater significance on an outcome or event than is accurately warranted based off of factual experiences or data). While it is not apparent that the biases influenced the results for this study, they are biases that are worth mentioning as potential limitations due to the use of self-report measures.

Another limitation for this study would be the lack of racial diversity among the sample of participants. While the demographics for this study do represent Pittsburg State University quite well, other institutions wanting to utilize the results from this study should be mindful of the demographics that are not as well represented by this sample of students.

Finally, while previous research has been conducted looking into the influential components of the Health Promotion Model (HPM) among university students living an HPL, much more is needed in order for generalizations to be made. Few studies have taken a detailed look into the specific barriers to exercise, and benefits of exercise in the eyes' of university students. In addition, there is very little available research regarding the relationship between perceived self-efficacy and the physical activity stages of change regarding university students. However, despite this area of research lacking, the significant relationship (at the .01 level) that was revealed in this study, is supported by previous findings (Wallace & Buckworth, 2003; Wallace et al., 2000).

Conclusions and Recommendations

As obesity in America continues to be a relevant concern, it is imperative those in the helping field adopt a preventative-care mindset. The various domains of health must be taken into account when promoting overall well-being, and this includes mental, physical, emotional, spiritual, and interpersonal health. Individuals providing healthcare services can strive to educate others on the relationships between various factors and their involvement in a health promoting lifestyle (HPL), as well as teach them about activities that are considered health promoting.

Because a notable decline in health-related behaviors takes place when individuals enter college, it is important to consider the various components of the Health Promotion Model (HPM) when taking a preventative healthcare perspective. Designing interventions to increase physical activity and healthy eating regimens requires the individualization of interventions to the particular individual so that heightened commitment to action and success can be obtained. When this is achieved, there is likely

to be an increase in effort, interest, and persistence, all of which aid in the process of mastery, and thereby the growth of one's perceived self-efficacy.

In addition, identifying the stages of change an individual is in can also be beneficial so that interventions can be tailored to meet specific needs at the given identified stage. By identifying the stages of change at the baseline of the intervention, individuals in helping professions can become better equipped at helping others achieve successful outcomes regarding the desired behavioral changes, while also helping them to transition into higher stages of change.

Not only is it important to consider the stages of change individuals are in, but it is also imperative to identify and examine the current life stages, as research findings indicate perceived barriers, benefits, and self-efficacy change throughout life transitions (Garcia et al., 1995; Wu & Pender, 2005). This change can impact the degree of commitment to action, as well as the belief in oneself to achieve specific behavioral outcomes. University students certainly face a unique set of challenges, as they go through their years in academia. Identifying across universities today, the top barriers to involvement in an HPL can help shape interventions to be utilized throughout college campuses.

Research highlights the importance of identifying what types of barriers seem to be most problematic for a given population. Recognizing the various external and internal barriers individuals face can guide helping professionals as they teach individuals how to problem-solve and address certain barriers. Detailed strategies should be created to further target specific barriers; for example, because perceived physical exertion was identified as being the highest barrier among female university students in Lovell, Ansari,

and Parker's (2010) investigation, strategies such as disengaging or distracting from the perceived unpleasantness accompanying physical exertion during exercise are suggested. These types of strategies could include cognitive restructuring to re-direct attention and thoughts to more positive aspects of exercise. It could also include helping the individual come up with other distraction mechanisms such as listening to a book on an iPod while partaking in exercise, or watching television while jogging on a treadmill at a gym or during an at-home exercise program. Helping students learn how to handle obstacles that get in the way of engaging in exercise can have multiple benefits, in addition to improved physical health. For instance, Xiangli, Yulin, John, and Kia (2014) found by identifying international college students' specific exercise-related barriers, and assisting those students in addressing the obstacles, the students were better able to adjust to the university lifestyle in the United States as they became more active and involved on campus.

Moreover, identifying one's perceived benefit to barrier ratio can help with promoting participation in physical activity (Lovell, Ansari, & Parker, 2010). Programs and interventions can be designed to help increase the perceived benefits, and decrease the perceived barriers in order to obtain a ratio of about 80% benefits to 20% barriers, as is the recommended ratio by Lovell, Ansari, and Parker (2010). Awadalla et al., (2014) recommend continuing to spread awareness about the benefits of exercise, providing university students with clear guidelines pertaining to exercise, establishing more facilities that accommodate students' physical activity interests, increasing opportunities in students' curricula to allow for participation in exercise, and decreasing the academic load to provide students with more time to partake in exercise activities.

Helping others to live an HPL can be a challenging endeavor for healthcare providers. Taking the time to identify perceived barriers to action, perceived benefits of action, the degree of interpersonal influence, and perceived self-efficacy pertaining to desirable behaviors can be beneficial as individuals in helping roles strive to individualize interventions to best support individuals as they move through the stages of change. Additional research in the area of health promotion on college campuses needs to be conducted. Should the nation begin to decrease the obesity rate, and the amount of healthcare dollars spent on obesity and obesity-related disorders, interventions must be designed and implemented, and altered as necessary based on the effectiveness of the intervention. There is no time to wait, as obesity rates and healthcare costs continue to rise each calendar year.

In order for effective interventions to be created, a greater understanding of how the components of HPM impact involvement in physical activity and nutritional eating regimens must be identified. College campuses serve as a terrific environment to implement interventions and learn what works to decrease perceived barriers and increase perceived benefits and perceived self-efficacy. With the routine, structure, and environment of a college campus, various activities for students to engage in, and informational programs for them to attend can be regularly offered. Giving students more opportunities to learn (through their preferred method) about their health, the importance of living an HPL, and how to engage in an HPL can benefit them for years following their academic culmination.

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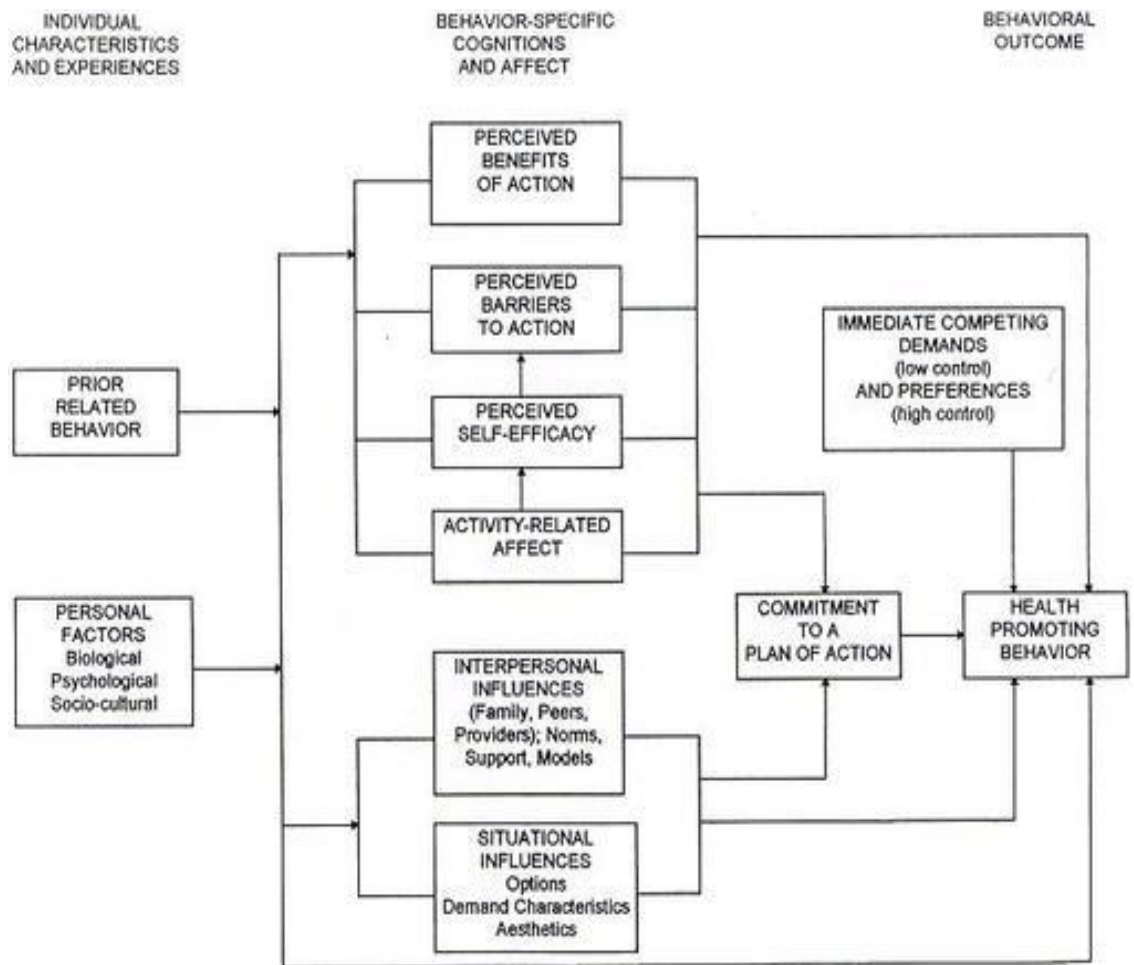
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APPENDICES

APPENDIX A
Diagram of the Health Promotion Model

Diagram of the Health Promotion Model:



APPENDIX B
Questionnaires

Demographic Information: Please complete the following, being careful not to leave any items blank.

1. Gender: Female _____ Male _____
2. Age:
 - _____ 18-20
 - _____ 21-24
 - _____ 25-28
 - _____ 29-39
 - _____ 40-49
 - _____ 50+
3. Marital Status (Check the option that you identify with):
 - _____ Single (never married, separated, divorced, or widowed)
 - _____ Committed Relationship
 - _____ Married
4. Academic Classification:
 - _____ Freshman
 - _____ Sophomore
 - _____ Junior
 - _____ Senior
 - _____ Graduate
5. Current Residence:
 - _____ University Housing
 - _____ Off-Campus Property
6. Do you have any children, under the age of 18, living at home?
 - _____ Yes
 - _____ No
7. Number of children, under the age of 18, living at home:
 - _____ No children
 - _____ 1 Child
 - _____ 2 Children
 - _____ 3 Children
 - _____ 4 Children
 - _____ More than 4 Children
8. Total household income:
 - _____ <\$10,000
 - _____ \$10,000-19,999
 - _____ \$20,000-34,999
 - _____ \$35,000-49,999
 - _____ \$50,000+
9. Current employment status:
 - _____ Not currently employed
 - _____ Part-time employment
 - _____ Full-time employment
10. Race (check the race you most identify with):
 - _____ White (Non-Hispanic)
 - _____ Black (Non-Hispanic)
 - _____ American Indian/Alaskan Native
 - _____ Hispanic
 - _____ Asian/Pacific Islander
 - _____ Mixed: Check 2 Above
11. Do you have any physical disabilities that limit or prevent you from participating in physical activity?
 - _____ Yes
 - _____ No
12. What types of activities are you currently participating in for the purpose of increasing your physical activity level? (Check all that apply):
 - _____ None
 - _____ Brisk Walking
 - _____ Jogging or Running
 - _____ Yoga
 - _____ Intramurals/Team Sports
 - _____ Cycling
 - _____ Stairmaster/Stair Climber
 - _____ Elliptical
 - _____ Exercise Videos
 - _____ Weight Lifting/Weight Training Machines
 - _____ Aerobic Classes
 - _____ Dancing
 - _____ Swimming
 - _____ Gardening
 - _____ Hiking
 - _____ Roller-blading/Skating
 - _____ Kick Boxing
 - _____ Other (Please List): _____
13. Please indicate your top 3 preferences on how you would prefer to receive information regarding physical activity and health promotion: (Numerically rate 1, 2, and 3 in the space provided)
 - _____ Community Classes
 - _____ Brochures
 - _____ Newspaper Articles
 - _____ Radio/Talk Show
 - _____ Television Programs
 - _____ Internet
 - _____ Newsletters
 - _____ Educational Classes at the University
 - Other (Please List): _____
14. What types of activities would you be most likely to participate in if you decided to become more physically active?
 - _____ None
 - _____ Brisk Walking
 - _____ Jogging or Running
 - _____ Yoga
 - _____ Intramurals/Team Sports
 - _____ Cycling
 - _____ Stairmaster/Stair Climber
 - _____ Elliptical
 - _____ Exercise Videos
 - _____ Weight Lifting/Weight Training Machines
 - _____ Aerobic Classes
 - _____ Dancing
 - _____ Swimming
 - _____ Gardening
 - _____ Hiking
 - _____ Roller-blading/Skating
 - _____ Kick Boxing
 - _____ Other (Please List): _____

The Health Promoting Lifestyle Profile II:

DIRECTIONS: This questionnaire contains statements about your present way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling: **N** (*Never*), **S** (*Sometimes*), **O** (*Often*), or **R** (*Routinely*).

		Never	Sometimes	Often	Routinely
1.	Discuss my problems and concerns with people close to me.	N	S	O	R
2.	Choose a diet low in fat, saturate fat, and cholesterol.	N	S	O	R
3.	Report any unusual signs or symptoms to a physician or other health professional.	N	S	O	R
4.	Follow a planned exercise program.	N	S	O	R
5.	Get enough sleep.	N	S	O	R
6.	Feel I am growing and changing in positive ways.	N	S	O	R
7.	Praise other people easily for their achievements.	N	S	O	R
8.	Limit use of sugars and food containing sugar (sweets).	N	S	O	R
9.	Read or watch TV programs about improving health.	N	S	O	R
10.	Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	N	S	O	R
11.	Take some time for relaxation each day.	N	S	O	R
12.	Believe that my life has purpose.	N	S	O	R
13.	Maintain meaningful and fulfilling relationships with others.	N	S	O	R
14.	Eat 6-11 servings of bread, cereal, rice, and pasta each day.	N	S	O	R
15.	Question health professionals in order to understand their instructions.	N	S	O	R
16.	Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).	N	S	O	R
17.	Accept those things in my life which I cannot change.	N	S	O	R
18.	Look forward to the future.	N	S	O	R
19.	Spend time with close friends.	N	S	O	R
20.	Eat 2-4 servings of fruit each day.	N	S	O	R
21.	Get a second opinion when I question my health care provider's advice.	N	S	O	R
22.	Take part in leisure-time (recreational) physical activities (such as swimming, dancing, or bicycling).	N	S	O	R
23.	Concentrate on pleasant thoughts at bedtime.	N	S	O	R
24.	Feel content and at peace with myself.	N	S	O	R

25.	Find it easy to show concern, love, and warmth to others.	N	S	O	R
26.	Eat 3-5 servings of vegetables each day.	N	S	O	R
27.	Discuss my health concerns with health professionals.	N	S	O	R
28.	Do stretching exercises at least 3 times per week.	N	S	O	R
29.	Use specific methods to control my stress.	N	S	O	R
30.	Work toward long-term goals in my life.	N	S	O	R
31.	Touch and am touched by people I care about.	N	S	O	R
32.	Eat 2-3 servings of milk, yogurt, or cheese each day.	N	S	O	R
33.	Inspect my body at least monthly for physical changes/danger signs.	N	S	O	R
34.	Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	N	S	O	R
35.	Balance time between work and play.	N	S	O	R
36.	Find each day interesting and challenging.	N	S	O	R
37.	Find ways to meet my needs for intimacy.	N	S	O	R
38.	Eat only 2-3 servings of meat, poultry, fish, dried beans, eggs, and nuts group each day.	N	S	O	R
39.	Ask for information from health professionals about how to take good care of myself.	N	S	O	R
40.	Check my pulse/ heart rate when exercising.	N	S	O	R
41.	Practice relaxation or meditation for 15-20 minutes daily.	N	S	O	R
42.	Am aware of what is important to me in life.	N	S	O	R
43.	Get support from a network of caring people.	N	S	O	R
44.	Read labels to identify nutrients, fats, sodium content in packaged food.	N	S	O	R
45.	Attend educational programs on personal health care.	N	S	O	R
46.	Reach my target heart rate when exercising.	N	S	O	R
47.	Pace myself to prevent tiredness.	N	S	O	R
48.	Feel connected with some force greater than myself.	N	S	O	R
49.	Settle conflicts with others through discussion and compromise.	N	S	O	R
50.	Eat breakfast.	N	S	O	R
51.	Seek guidance or counseling when necessary.	N	S	O	R
52.	Expose myself to new experiences and challenges.	N	S	O	R

The Exercise Benefits/Barriers Scale:

DIRECTIONS: Below are statements that relate to ideas about exercise. Please indicate the degree to which you agree or disagree with the statements by circling:

SA (*Strongly Agree*), **A** (*Agree*), **D** (*Disagree*), or **SD** (*Strongly Disagree*).

1.	I enjoy exercise.	SA	A	D	SD
2.	Exercise decreases feelings of stress and tension for me.	SA	A	D	SD
3.	Exercise improves my mental health.	SA	A	D	SD
4.	Exercising takes too much of my time.	SA	A	D	SD
5.	I will prevent heart attacks by exercising	SA	A	D	SD
6.	Exercise tires me.	SA	A	D	SD
7.	Exercise increases my muscle strength.	SA	A	D	SD
8.	Exercise gives me a sense of personal accomplishment.	SA	A	D	SD
9.	Places for me to exercise are too far away.	SA	A	D	SD
10.	Exercising makes me feel relaxed.	SA	A	D	SD
11.	Exercising lets me have contact with friends and persons I enjoy.	SA	A	D	SD
12.	I am too embarrassed to exercise.	SA	A	D	SD
13.	Exercising will keep me from having high blood pressure.	SA	A	D	SD
14.	It costs too much to exercise.	SA	A	D	SD
15.	Exercising increases my level of physical fitness.	SA	A	D	SD
16.	Exercise facilities do not have convenient schedules for me.	SA	A	D	SD
17.	My muscle tone is improved with exercise.	SA	A	D	SD
18.	Exercising improves functioning of my cardiovascular system.	SA	A	D	SD
19.	I am fatigued by exercise.	SA	A	D	SD
20.	I have improved feelings of well-being from exercise.	SA	A	D	SD
21.	My spouse (or significant other) does not encourage exercise.	SA	A	D	SD
22.	Exercise increases my stamina.	SA	A	D	SD
23.	Exercise improves my flexibility.	SA	A	D	SD
24.	Exercise takes too much time from family relationships.	SA	A	D	SD
25.	My disposition is improved with exercise.	SA	A	D	SD

26.	Exercising helps me sleep better at night.	SA	A	D	SD
27.	I will live longer if I exercise.	SA	A	D	SD
28.	I think people in exercise clothes look funny.	SA	A	D	SD
29.	Exercise helps me decrease fatigue.	SA	A	D	SD
30.	Exercising is a good way for me to meet other people.	SA	A	D	SD
31.	My physical endurance is improved by exercise.	SA	A	D	SD
32.	Exercise improves my self-concept.	SA	A	D	SD
33.	My family members do not encourage me to exercise.	SA	A	D	SD
34.	Exercising increases my mental alertness.	SA	A	D	SD
35.	Exercise allows me to carry out normal activities without becoming tired.	SA	A	D	SD
36.	Exercise improves the quality of my work.	SA	A	D	SD
37.	Exercise takes too much time from my family responsibilities.	SA	A	D	SD
38.	Exercise is good entertainment for me.	SA	A	D	SD
39.	Exercise increases my acceptance by others.	SA	A	D	SD
40.	Exercise is hard work for me.	SA	A	D	SD
41.	Exercise improves overall body functioning for me.	SA	A	D	SD
42.	There are too few places for me to exercise.	SA	A	D	SD
43.	Exercise improves the way my body looks.	SA	A	D	SD

Self-efficacy for Exercise Scale:

DIRECTIONS: Please indicate your degree of confidence regarding the nine items below by circling one number rating from 0 being not confident at all to 10 being the highest level of confidence.

How confident are you right now that you could exercise THREE times per week for 20 minutes if:												
		Not Confident						Very Confident				
1.	The weather was bothering you.	0	1	2	3	4	5	6	7	8	9	10
2.	You were bored by the program or activity.	0	1	2	3	4	5	6	7	8	9	10
3.	You felt pain when exercising.	0	1	2	3	4	5	6	7	8	9	10
4.	You had to exercise alone.	0	1	2	3	4	5	6	7	8	9	10
5.	You did not enjoy it.	0	1	2	3	4	5	6	7	8	9	10
6.	You were too busy with other activities.	0	1	2	3	4	5	6	7	8	9	10
7.	You felt tired.	0	1	2	3	4	5	6	7	8	9	10
8.	You felt stressed.	0	1	2	3	4	5	6	7	8	9	10
9.	You felt depressed.	0	1	2	3	4	5	6	7	8	9	10

Physical Activity Stages of Change Questionnaire:

DIRECTIONS: Please read the description below, and then select either “yes” or “no” for each of the following five items:

Moderate physical activity includes such activities as walking, gardening and heavy housecleaning. For moderate activity to be regular , it must add up to a total of 30 or more minutes per day and be done at least 5 days per week . For example, you could take a 30 minute walk or take a 10 minute walk, rake leaves for 10 minutes and climb stairs for 10 minutes adding up to a total of 30 minutes.		
	Yes	No
1. I currently participate in moderate physical activity.	<input type="checkbox"/>	<input type="checkbox"/>
2. I intend to increase my participation in moderate physical activity in the next 6 months.	<input type="checkbox"/>	<input type="checkbox"/>
3. I currently engage in regular moderate physical activity.	<input type="checkbox"/>	<input type="checkbox"/>
4. I have been participating in moderate physical activity regularly for the past 6 months.	<input type="checkbox"/>	<input type="checkbox"/>
5. In the past, I have been regularly physically active in moderate activities for a period of at least 3 months.	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C
Informed Consent

TITLE OF PROJECT: University Students' Attitudes toward Exercise

PRINCIPLE INVESTIGATOR: Madison V. Estrada, mestrada@gus.pittstate.edu

APPROVAL DATE: 10/07/2016

EXPIRATION DATE: 12/16/2016

SPONSOR: Janet Smith, Ph.D.

INFORMED CONSENT

You are invited to participate in a study that will investigate students' attitudes toward exercise. You were chosen for this study because you attend Pittsburg State University and are enrolled in the General Psychology course. If you are less than 18 years of age, you will not be able to participate, as you will not have parental authorization.

There is no cost for participating in this study. Your participation in this study is entirely voluntary, and you may withdraw your consent at any time.

PURPOSE OF RESEARCH

You are invited to participate in research that is being conducted by Madison Estrada, a Clinical Psychology graduate student at Pittsburg State University. The purpose of this study is to gather information regarding college students' attitudes toward exercise.

ALTERNATIVES

These are the alternatives available to you:

1. You could choose to participate in the study.
2. You could choose not to participate in the study, with the knowledge that you could reconsider and participate in this study in the future, if you still meet the study eligibility and the study is still underway.
3. You could choose not to participate in the study, and choose to participate in an alternative study in order to meet the research requirement for your General Psychology course.

PROCEDURES AND LENGTH OF STUDY

If you agree to participate, you will be asked to complete five questionnaires. It is estimated that your involvement in the study will take approximately 30 minutes.

BENEFITS AND RISKS FOR PARTICIPATION

1. The information you provide may have benefits for science as this study may increase the knowledge in the field regarding the college population's attitudes toward exercise. Based off of these findings, we may be able to apply these findings to preventative health interventions that could be created and implemented to more successfully promote the health of college students. **WE CANNOT AND DO NOT GUARANTEE OR PROMISE THAT YOU WILL RECEIVE ANY BENEFITS FROM THIS STUDY.**
2. The psychological risk of participating in this study is very minimal, as the survey questions are not of a sensitive nature. If you experience any negative psychological effects, we will provide contact information to you for on-campus supportive counseling services.
3. There are no obvious physical risks of participating in this study.
4. A potential legal risk that exists is the primary investigator and/or research personnel may be ethically and/or legally obligated to report certain actions or potential for actions by you to protective, regulatory, or law enforcement agencies. This includes serious risk for harm to self or others (suicidal or homicidal/violent behavior) or suspected involvement in elder/child abuse or neglect.

COMPENSATION

There is no monetary compensation for your participation in this investigation; however, your participation does qualify as counting toward your research involvement requirement in your General Psychology course.

FREEDOM TO WITHDRAW WITHOUT PREJUDICE

1. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time. Your desire to withdraw from the investigation will not negatively impact your ability to acquire your research involvement credit in your General Psychology course, as other research options will be available during the remainder of the semester.
2. At the discretion of the primary investigator, participants may be taken out of this study due to unanticipated circumstances (e.g., severe emotional distress).

3. The principal investigator may take participants out of the study if the study is cancelled or if they need treatment.

CONFIDENTIALITY STATEMENT

1. All the data you provide will be kept confidential. You will be identified by a code number on all forms you complete. The data will be stored in a secured file cabinet in offices that have limited access so that they are available only to the appropriate professional staff on the project.
2. Any data that may be published in scientific journals will not reveal the identity of participants.
3. Your name will not be associated in any way with the information collected about you or with the research findings from this study. The researcher(s) will use a code number instead of your name.
4. The researcher(s) will not share information about you with anyone not specified unless required by law or unless you provide written permission.

INVITATION TO QUESTION

If you have any questions, we expect you to ask us. If you have any additional questions later, Madison Estrada will be happy to answer them. Please contact Madison Estrada by email at mestrada@gus.pittstate.edu

If you are not satisfied with the manner in which this study is being conducted, or if you have any questions concerning your rights as a study participant, please contact David Hurford, Ph.D., Chairperson, Committee for the Protection of Human Participants, Department of Psychology and Counseling, Pittsburg State University, 620-235-4526, or Brian A. Peery, Research and Grants Coordinator, 106 Russ Hall, Pittsburg State University, 620-235-4175.

TERMS OF PARTICIPATION

I understand this project is research and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understand this consent form and willingly agree to participate in this study under the terms

described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Printed Name of Participant

Signature of Participant

Date

Signature of Witness (Project Staff)

Date

TABLES

TABLE 1*Descriptive Statistics:**Gender, Age, Health Promoting Lifestyle Profile-II, Exercise Benefits and Barriers Scale, Self-Efficacy for Exercise Scale, and Physical Activity Stages of Change Questionnaire*

	Gender	Age	HPLP-II	EBBS	Benefits Subscale	Barriers Subscale	SEE Scale	PA SOC
N Valid	96	96	96	96	96	96	96	96
Missing	0	0	0	0	0	0	0	0
Mean	1.51	1.21	2.64	139.72	97.50	27.73	54.20	4.07
Std. Deviation	.503	.579	.34	16.28	12.26	6.19	21.06	1.23
Minimum	1	1	1.87	93	58	17	0	1
Maximum	2	4	3.42	166	116	47	90	5

TABLE 2*Survey Gender Differences***TABLE 2a Females (N = 47):***Note. *p < .05, **p < .01*

Variables	1	2	3	4	5	6
1. Health Promoting Lifestyle Profile-II	-					
2. Benefits and Barriers Scale	.669**	-				
3. Benefits Subscale	.709**	.925**	-			
4. Barriers Subscale	-.533**	-.833**	-.603**	-		
5. Self-Efficacy for Exercise Scale	.394**	.609**	.594**	-.483**	-	
6. Physical Activity Stage of Change	.527**	.559**	.551**	-.464**	.302*	-

TABLE 2b Males (N = 49):*Note. *p < .05, **p < .01*

Variables	1	2	3	4	5	6
1. Health Promoting Lifestyle Profile-II	-					
2. Benefits and Barriers Scale	.704**	-				
3. Benefits Subscale	.700**	.942**	-			
4. Barriers Subscale	-.419**	-.720**	-.483**	-		
5. Self-Efficacy for Exercise Scale	.340**	.482**	.535**	-.266**	-	
6. Physical Activity Stage of Change	.478**	.506**	.358**	-.604**	.253*	-

TABLE 3*Correlations:**Health Promoting Lifestyle Profile-II, Exercise Benefits and Barriers Scale, Self-Efficacy for Exercise Scale, and Physical Activity Stages of Change Questionnaire*

Variables	1	2	3	4	5	6
1. Health Promoting Lifestyle Profile-II	-					
2. Benefits and Barriers Scale	.655**	-				
3. Benefits Subscale	.665**	.934**	-			
4. Barriers Subscale	-.481**	-.775**	-.541**	-		
5. Self-Efficacy for Exercise Scale	.316**	.552**	.593**	-.362**	-	
6. Physical Activity Stage of Change	.436**	.526**	.473**	-.502**	.394**	-

Note. ** $p < .01$

TABLE 4*Differences on the Self-Efficacy for Exercise Scale:**Total, Male, and Female Participants' Low-Degree of Perceived Self-Efficacy*

Barriers Leading to Low-Degrees of Perceived Self-Efficacy for Exercise									
	Lack of enjoyment from exercise	Too busy to exercise	Feeling pain during exercise	Feeling depressed	Feeling tired	Have to exercise alone	Too bored by exercise	Feeling stressed	Bothered by the weather
Total participants (N = 96)	40 (41.7%)	33 (34.4%)	30 (31.3%)	25 (26%)	21 (21.9%)	21 (21.9%)	18 (18.8%)	15 (15.6%)	13 (13.5%)
Females (N = 47)	29 (61.7%)	23 (48.9%)	21 (44.7%)	17 (36.2%)	14 (29.8%)	15 (31.9%)	14 (29.8%)	12 (25.5%)	12 (25.5%)
Males (N = 49)	11 (22.4%)	10 (20.4%)	9 (18.4%)	8 (16.3%)	7 (14.3%)	6 (12.2%)	4 (8.2%)	3 (6.1%)	1 (2.0%)

TABLE 5*Health Promoting Lifestyle Profile-II: Subscale Correlations*

Subscales	Overall Score of the Health Promoting Lifestyle Profile-II
1. Health Responsibility	.584**
2. Physical Activity	.647**
3. Nutrition	.649**
4. Spiritual Growth	.832**
5. Interpersonal Relations	.670**
6. Stress Management	.597**

Note. ** $p < .01$

FIGURES

FIGURE 1

Graphical Representation of Male and Female Differences on the Self-Efficacy for Exercise Scale

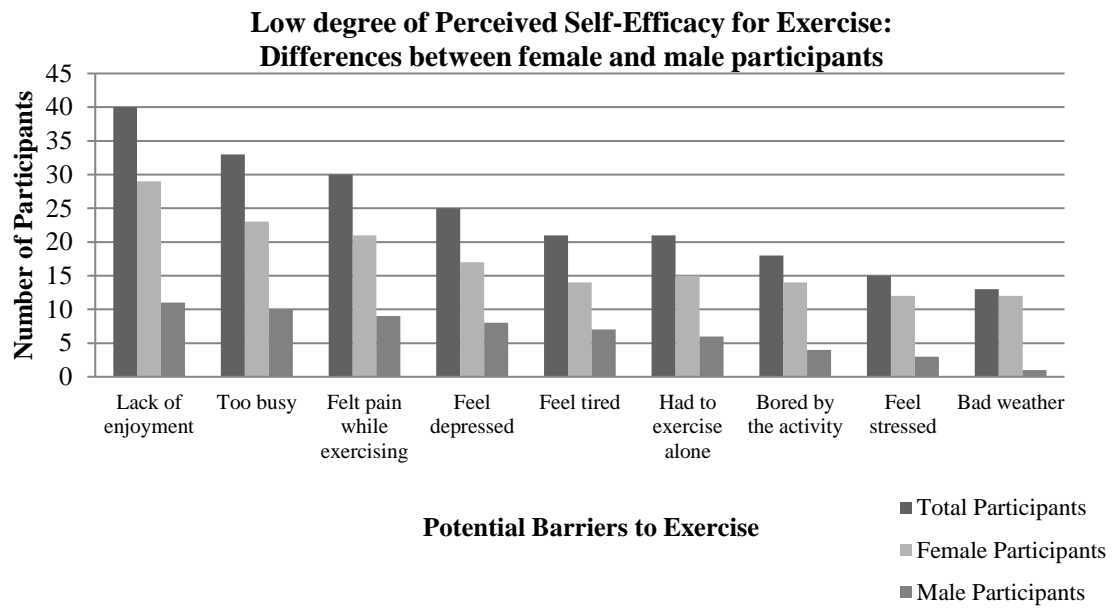


FIGURE 2

Graphical Representation of Participants' Perceived Barriers to Exercise

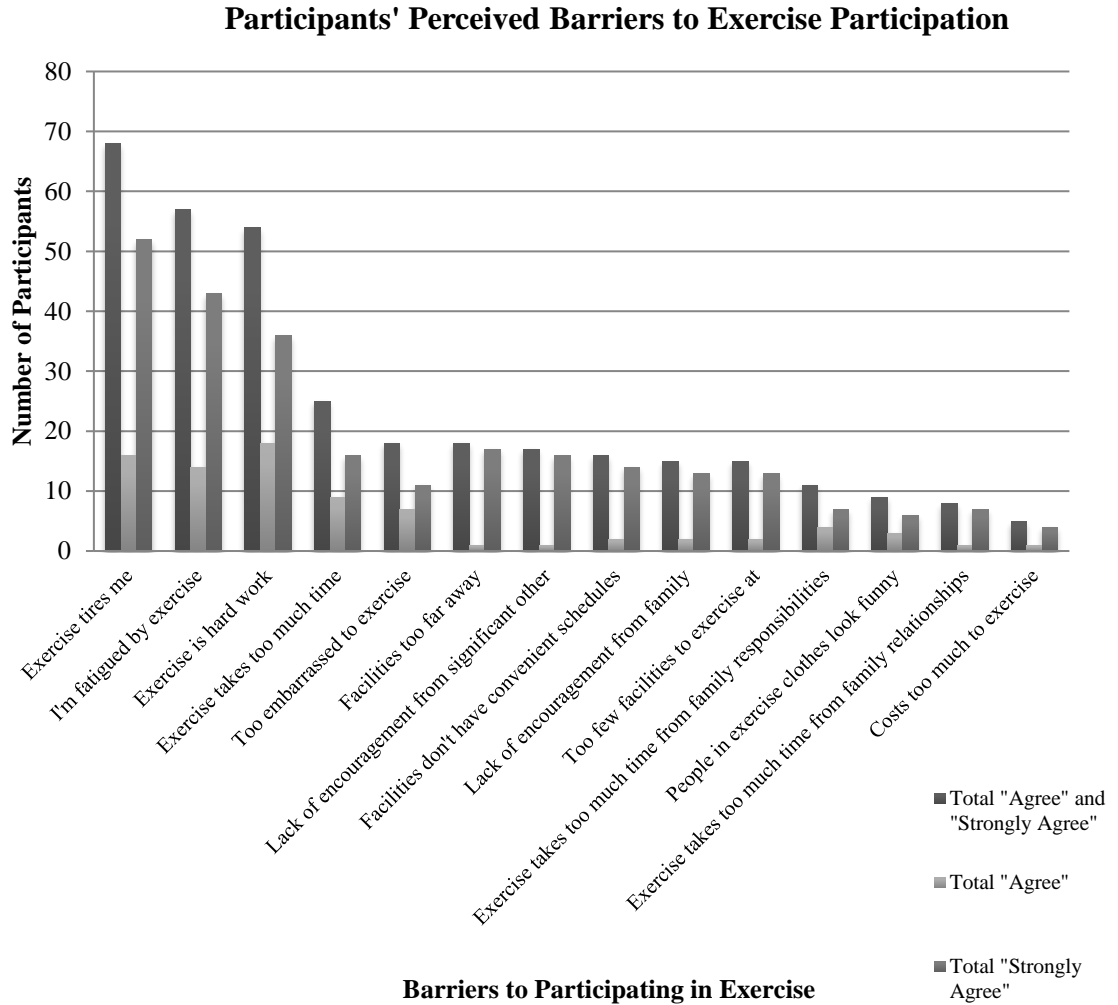


FIGURE 3

Graphical Representation of Participants' Perceived Benefits of Exercise

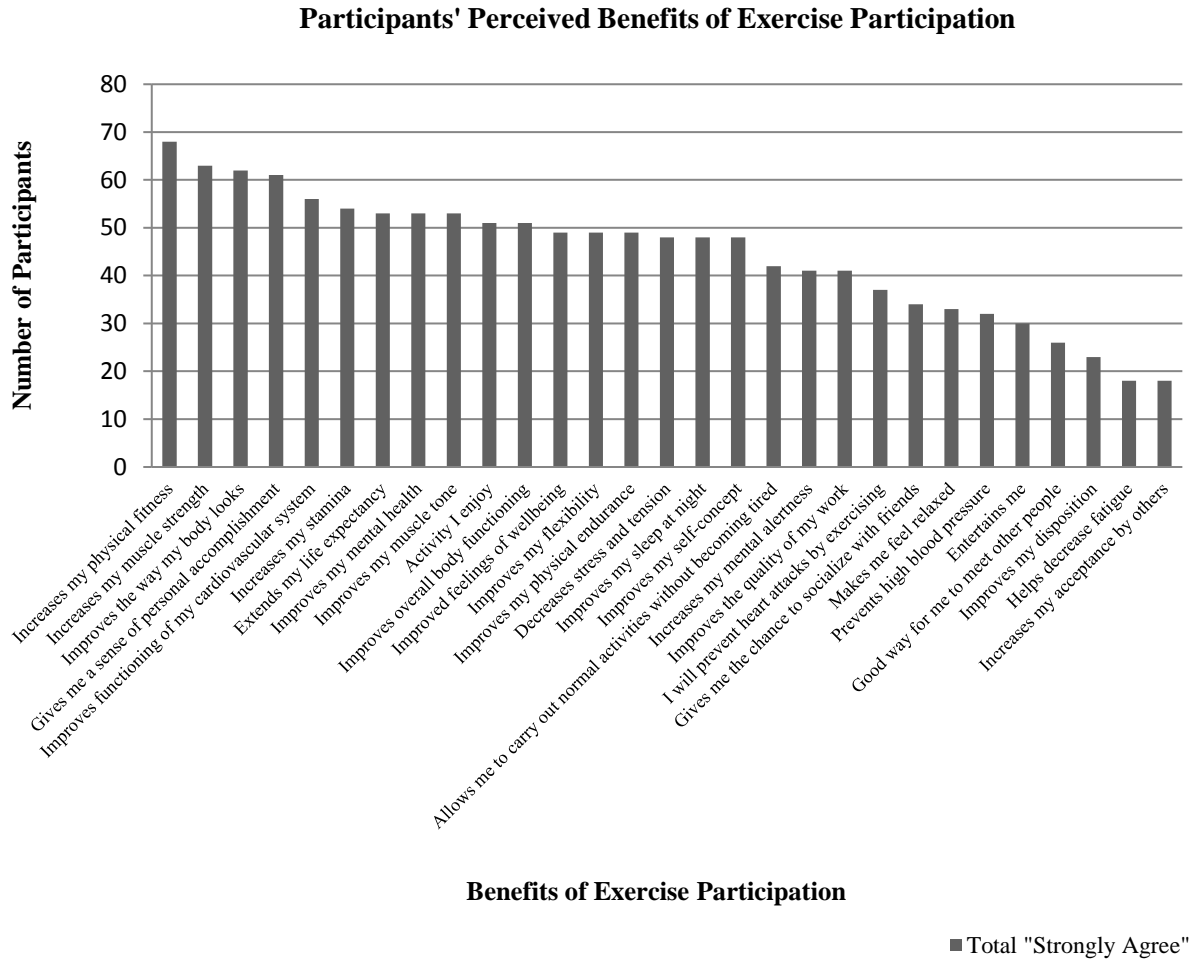


FIGURE 4

Graphical Representation of Participants' Preferred Method of Receiving Health Promotion Information

