

UNDERSTANDING MOTIVATION AND CONSUMER BEHAVIOR
BASED ON STAGES OF CHANGE IN EXERCISE

By

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To all who continuously motivated me to write, conduct and exceed my own expectations. A special thanks to the Department of Recreational Sports for providing me with the resources to complete this study.

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Abstract of Thesis Presented to the Graduate School
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The purpose of this study was to determine how the relationship between stages of change and motivation impacts exercise consumer behavior among college students. Two theories were identified and integrated into the study: the transtheoretical model of behavior change (TTM), for purposes of profiling the subjects of the study into stages of change and the self-determination theory (SDT), providing the motivation framework used within the study. The relationship between motivation and exercise consumer behavior was tested to determine the type of motivation that better predicted exercise consumer behavior across the stages of change. An online questionnaire was administered to ($N = 4,000$) undergraduate and graduate university students assessing their current exercise stage of change, motivation towards exercise and likelihood of engaging in specific exercise consumer behaviors. There were ($N = 414$) completed responses, resulting in a 10% response rate. The results showed that there were significant differences present in motivation across stages of change, increasing in self-determination as stage of change increased. In addition, more self-determined forms of motivation were found to positively influence exercise consumer behavior within the context of this study. It is suggested that consumers who are more engaged and have internalized their current exercise behavior, are more likely to participate, purchase and attend program and

service offerings. Additional work is needed to refine and improve the items used to measure exercise consumer behavior. Future research is warranted in determining the impact of marketing campaigns on the consumer's exercise behavioral intentions.

CHAPTER 1 INTRODUCTION

The American population is faced with many chronic and degenerative ailments due to poor lifestyle habits and behaviors (Lee & Estes, 2001). “The US Centers for Disease Control and Prevention (CDCP, 1995) reported that approximately 73% of Americans’ physical activity is insufficient” (Mullineaux, Barnes, & Barnes, 2001, p. 279). Behavioral changes must be implemented early in life in order to address these problems and improve an individual’s quality of life for the future.

According to the Surgeon General’s Report on physical activity, nearly half of America’s youth, ages 12-21 years, are not vigorously active on a regular basis (1999). The report also stated that as age or grade in school begins to increase, participation in all types of physical activity begins to decrease (1999). Between 1991 and 1997, it was reported that the greatest increase in obesity was attributed to individuals between 18 and 29 years old (7.1% to 12.1%) and individuals with some college education ranged between 10.6% to 17.8% (Huang et al., 2003). By 2001, the level of obesity increased to 14% among 18 to 29 year olds and 21% among individuals with some college education (Huang et al., 2003).

An active lifestyle must be adopted within the early stages of life promoting healthy behavior, preventing the onset of disease rather than attempting to fix the “problem” occurring as a result of consistent unhealthy behavior. An active lifestyle can reduce the risk of coronary heart disease, hypertension, obesity and osteoporosis (Surgeon General, 1999). Physical activity can also lead to reduced stress and depression with an increase in emotional well-being, self-confidence and energy level (Paluska & Schwenk, 2000).

College students are faced with the challenge of maintaining their personal health along with many other responsibilities after moving away from home for the first time (Jackson,

Tucker & Herman, 2007). They begin to lead an entirely new lifestyle marked by new “demands and stressors” (Jackson et al., 2007, p. 69). Most students are taking on new responsibilities such as living on their own for the first time, demanding coursework and trying to balance a social life, leaving little to no time for exercise and health. Jackson et al (2007) underlines the importance of health for college students: “the promotion and maintenance of health-promoting lifestyles for college students are critical to prevent the development of chronic diseases” (p. 69). It is imperative for college students to recognize the importance of healthy lifestyle behaviors in order to ensure longevity and continued maintenance of such behaviors into adulthood. This study will focus on what motivates students to engage in physical fitness in an effort to determine their exercise consumer behavior. This will allow practitioners to properly promote their fitness programs and activities to the student population.

Although exercise and physical activity is recognized as an important factor towards leading a healthy lifestyle, many people fail to successfully implement a consistent fitness regime because they lack the motivation to commit to a regular fitness program or knowledge of how to begin. College aged students are focusing on many different aspects in their lives (i.e., academic, social and occupational) attempting to create a healthy balance, but failing to do so as stress or other distractions evolve. It is important for college students to understand the benefits of physical fitness and leading a healthy lifestyle during this period of their lives. Many students focus on academics and social aspects of their lives, leaving little to no time for physical fitness and making healthy lifestyle choices. By understanding the stage of change the students are currently in and their motivation to either engage in exercise or not engage in exercise, a complete picture of college students’ exercise behavior can be drawn allowing practitioners to

produce and promote programs and activities that are in line with the motivational orientation of the students.

Given that college students belong to the generation discussed above, research must be aimed at determining what motivates college students to engage in physical fitness and purchase or participate in health programs and services. This research will help provide an understanding of key motivational factors, resulting in more efficient and effective programming conducted by recreational sports departments on university campuses. Knowing what motivates students to engage in physical fitness and lead a healthier lifestyle will allow recreational sports departments to implement and effectively promote events and activities to the college student population and influence their consumer behavior.

Problem of the Study

Previous research has shown that amotivation, intrinsic and extrinsic motivation to exercise differs between the TTM stages of change (Mullan & Markland, 1990; Thøgersen-Ntoumani & Ntoumanis, 2006; Wallace, Buckworth, Kirby, & Sherman, 2000) for various populations (e.g., adults, young adults, health club members). However, there was lack of research examining the link between stages of changes, amotivation, extrinsic and intrinsic motivation and consumer behavior for the college student population.

Purpose of the Study

The purpose of this study is two fold: (a) to determine how the motivation of college students across stages of change impacts consumer behavior related to exercise and (b) to provide practitioners within the sport management field with meaningful suggestions on which decisions regarding exercise programming and promotions may be based, along with an understanding of how to motivate the college student population to lead an active and healthy lifestyle.

Theoretical Frameworks

This study identifies two theories, the transtheoretical model of behavior change (TTM) used to classify exercise behavior and the self-determination theory (SDT), used to understand the motivation attached to exercise behavior. The transtheoretical model of behavior change presents an approach to health promotion, identifying behavioral change as a progression through stages of change (Astroth et al., 2002). This model was used to profile the students within the study. The model focuses on the progression through six stages of behavior change: pre-contemplation, contemplation, preparation, action, maintenance and termination (Prochaska & Norcross, 2001). This model has been applied in both the adoption of positive behavior changes, along with the cessation of negative behaviors, focusing on the different motivating factors matched to each stage of change (Astroth et al., 2002).

The self-determination theory was used to determine the motivation attached to the stages of change. Self-determination theory distinguishes between two forms of motivation related to behavior, intrinsic motivation, doing an activity for the inherent satisfaction and extrinsic motivation, doing an activity for the external outcomes separate from the activity itself (Hagger & Chatzisarantis, 2005). The theory is presented along a continuum from nonself-determined (amotivation) to self-determined (intrinsic motivation). Extrinsic motivation, performing an activity in an effort to obtain a separate outcome or as a result of external pressures, lies between amotivation and intrinsic motivation.

Extrinsic motivation can vary greatly in relation to the level of autonomy of an individual. For this reason a sub-theory was presented by Ryan and Deci (2000) within the concept of SDT, known as organismic integration theory (OIT), detailing the different forms of extrinsic motivation. This sub-theory focuses on the idea that extrinsic motives (called regulations) fall along a continuum marked by different degrees of self-determination, ranging from highly

controlling to volitionally endorsed (Ryan & Deci, 2000; Wilson et al., 2002). Four regulations have been identified. These regulations are referred to as external, introjected, identified and integrated (Ryan & Deci, 2000). The differences in motivation reflect the degree to which an individual internalizes or integrates the value or regulation of the requested behavior (Ryan & Deci, 2000).

Differences between motivational variables will be examined across the stages of change related to the transtheoretical model of behavior change. Motivational orientation may exhibit an increase across the contemplation and preparation stages but no increase within the subsequent stages of preparation and action (Hagger & Chatzisarantis, 2005). Interventions may be useful targeting specific motivational framework in progressing individuals from the contemplation stage to the preparation stage, however, they would not progress individuals already in the preparation stage (Hagger & Chatzisarantis, 2005). This may be attributed to the idea that individuals residing within different stages of change exhibit different levels of motivation in regards to self-determination as hypothesized in this study (see H1 and H2 below). The level of behavioral regulation will vary in conjunction with stage of change (Mullan & Markland, 1990). Within the initial stages of change in exercise, the focus is on making the decision to start exercising and taking the initial steps necessary to becoming more physically fit (Mullan & Markland, 1990). Mullan and Markland (1990) conducted a study assessing the application of the organismic integration theory and the transtheoretical model to explore the relationship between behavioral regulation and stage of change as seen in the present study. While the subjects of their study were not college students, the results provide basis for the hypotheses development in the present study. Individuals are more likely to exhibit less self-determined forms of regulation (i.e., external and introjected) as they begin exercising (Mullan & Markland,

1990). As they progress through the stages, engaging in more exercise (action, maintenance and termination stages), individuals will become increasingly more self-determined in the regulation of their exercise behavior (i.e., identified and integrated) (Mullan & Markland, 1990). The motivational orientation of an individual in regards to exercise behavior will be used to further understand consumer behavior.

Kaltcheva and Weitz (2006) determined that by identifying and examining situational variables, in this case motivational orientation, strategies can be developed in relation to consumer behavior. This is due to the fact that motivational orientation influences consumption behavior (Kaltcheva & Weitz, 2006). Hypothesis three (see H3 below) proposes that consumer behavior will differ among college students falling within different stages of change in relation to their motivation.

The transtheoretical model of behavior change will be used to profile the subjects of this study to determine the level of exercise behavior. Next, the relationship between the transtheoretical model of behavior change and the self-determination theory will be examined to determine the relationship between stages of change and motivation. The relationship between the self-determination theory and exercise consumer behavior will also be tested to determine if certain types of motivation better predict exercise consumer behavior. Lastly, the stages of change and exercise consumer behavior of the subjects will be examined to determine if differences in the likeliness to engage in exercise consumer behavior differs across stages of change. These findings will be examined to provide an explanation of the college student exercise consumer behavior within the context of this study. Through this understanding, suggestions will be provided to practitioners within the sport management field regarding effective exercise programming and promotions that may be implemented in the college setting, along with ways to motivate the college student population to lead an active and healthy lifestyle.

This study specifically examines how motivation impacts consumer behavior within the context of exercise among the University of Florida (UF) student population. The researcher will determine if motivation has an impact on consumer behavior across stages of change. The information obtained through this study will assist in the development and implementation of proper programming of events and activities along with marketing and outreach efforts for university recreational sports programs and services. This knowledge will enable the researcher to determine key marketing strategies to promote healthy and active lifestyles to the college student population. Further research may be warranted on the application of this study on additional college student populations to determine the applicability to the demographic as a whole. This study will attempt to address whether there are any differences between stages of change and motivation factors, how motivation factors impact exercise consumer behavior of students and if there are any differences between stages of change and exercise consumer behavior. The following three hypotheses address the latter research questions.

Hypotheses

The study's hypotheses are the following:

H1: Students in different exercise stages of change (preparation, action, maintenance and termination) are expected to have different motivation mean scores.

H2: Motivation factors will positively impact exercise behavioral intentions within the preparation, action, maintenance and termination stages with the exception of amotivation which is not expected to positively influence consumer behavior.

H3: Students in the precontemplation and contemplation stages of change are expected to have lower mean scores in their exercise consumer behavior than students in the preparation, action, maintenance and termination stages.

Definition of Terms

1. **Transtheoretical Model of Behavior Change (TTM)** – theory identifying behavioral change as a progression through stages of change: pre-contemplation, contemplation, preparation, action, maintenance and termination.
 - a. **Pre-contemplation** – first stage of change, involving no intention of changing behavior in the foreseeable future.
 - b. **Contemplation** – second stage of change, seriously considering behavior change within the next six months.
 - c. **Preparation** – third stage of change where intention and behavioral criteria are combined, individuals intend to take action but have not yet been able to attain an effective process of action.
 - d. **Action** – fourth stage of change, requiring the most time and energy marked by measureable changes in behavior, altering behavior for one to six months successfully.
 - e. **Maintenance** – fifth stage of change, free of the problem behavior, engaging in the new positive behavior for more than six months.
 - f. **Termination** – final stage of change, involving the completed process of change where the new behavior has become habitual.

2. **Self-Determination Theory (SDT)** – theory of human motivation focusing on the degree to which behavior is volitional or self-determined marked along a continuum from amotivation to extrinsic motivation to intrinsic motivation.
 - a. **Amotivation** – refers to the state of lacking the intention to act, the absence of motivation.
 - b. **Extrinsic Motivation** – the performance of an activity in an effort to obtain a separate outcome, varying in level of autonomy.
 - c. **Intrinsic Motivation** – the act of engaging in an activity for the inherent satisfaction of the activity itself, feeling free from pressures and external controls.

3. **Organismic Intention Theory (OIT)** – sub-theory of SDT detailing the different forms of extrinsic motivation, falling along a continuum marked by different degrees of self-determination, ranging from highly controlling to volitionally endorsed.
 - a. **External Regulation** – appeasing an external demand or in an effort to receive a reward or avoid punishment from others of disapproval.
 - b. **Introjected Regulation** – involves the feeling of coercion to act in an effort to avoid negative emotions or to support conditional self-worth.

- c. Identified Regulation – values the importance of the activity or behavior but not finding the said activity or behavior itself enjoyable.
 - d. Integrated Regulation – engaging in an activity or behavior for the actual enjoyment with no sense of coercion, however, the behavior is typically still extrinsically motivated, being instrumental to an alternative action (i.e., achieving personal goals rather than inherent or intrinsic interest).
4. Consumer Behavior – the behavior associated with selecting, purchasing, using, evaluating and disposing of products and services in an effort to satisfy needs and desires (Hansen, Christensen, 2007).
 5. Marketing – the activity and process of communicating, delivering and exchanging offerings that have value for specified consumers or customers.

Delimitations

1. The subjects for this study were delimited to the University of Florida student population.
2. The study focused on only one component of the transtheoretical model of behavior change, stages of change.

CHAPTER 2 REVIEW OF LITERATURE

This study focused on determining the relationship between an individual's exercise behavior and motivation to their consumer behavioral intentions. This review of literature is comprised of three main topics: transtheoretical model of behavior change, self-determination theory and consumer behavior. The overall construct of the transtheoretical model of behavior change and more specifically the stages of change used for this study will be discussed. While it is important to understand what the model is comprised of as a whole, this study examined the stages of change as a means to profile the subjects of this study.

Next, the self-determination theory and its application to the health and exercise field will be reviewed. Self-determination theory breaks down the motivation individuals demonstrate at any given time, specifically examining the motivation associated with exercise and the stage of change of the subjects for this study. Self-determination theory is comprised of amotivation, extrinsic motivation and intrinsic motivation. Extrinsic motivation is comprised of four associated regulations: external, introjected, identified and integrated.

Lastly, consumer behavior and its connection to motivation and exercise behavior will be discussed. Understanding motivation and exercise behavior will assist in the ability to effectively manage recreational sports programming and promotions. Self-determination theory will be used to determine an individual's motivational orientation and their needs related to exercise (i.e. exercising for the pure enjoyment and satisfaction vs. exercising due to external pressures and demands). This information will be used to determine the relationship between motivation and exercise consumer behavior of college students.

Transtheoretical Model of Behavior Change

The transtheoretical model of behavior change (TTM), suggests that behavior change occurs over time in stages (Levy & Cardinal, 2006). This model was originally developed for the cessation of negative behaviors most commonly seen with smoking, drug and alcohol abuse (Fallon, 2004). The transtheoretical model of behavior change has been applied to the acquisition and adherence of positive behaviors such as exercise (Fallon, 2004). The model focuses on the decision making of the individual (Velicer, Prochaska, Fava, Norman & Redding, 1998). This model differs from other health promotion approaches where the focus has been on the social influences on behavior or the biological influences affecting behavior (Velicer et al., 1998).

The model is composed of five constructs: stages of change, self efficacy, temptation, decisional balance and the processes of change (Fallon, 2004). The stages of change have received the most attention through research and studies (Fallon, 2004; Hagger & Chatzisarantis, 2005; Mullan & Markland, 1990). The stages act as the key organizing element within the model, representing a temporal dimension (Velicer et al., 1998). The stages of change include precontemplation, contemplation, preparation, action, maintenance and termination. While it is important to understand the model as a whole, the stages of change will serve as the main focus of this study because they are used to profile the subjects of this study into specific categories of exercise behavior.

The first stage, precontemplation, involves no intention of changing behavior in the foreseeable future. Those who are in this stage are often unaware or only vaguely aware of their problems. If an individual is not seriously intending to change their behavior within the next six months, they are classified as precontemplators (Fallon, 2004; Prochaska & Norcross, 2001).

Contemplation is the second stage of change. This stage refers to individuals who are aware they have a problem, and are seriously thinking about overcoming the problem but have not begun to take action (Fallon, 2004). People will tend to remain in this stage for long periods of time. Contemplators are categorized as seriously considering change within the next six months (Prochaska & Norcross, 2001).

In preparation, the third stage of change, intention and behavioral criteria are combined. Individuals in this stage intend to take action within the next month and have not been successful in taking action during the past year (Prochaska & Norcross, 2001). This stage is dominated by behavioral change. Those who are in the preparation stage have not yet been able to attain an effective process of action, but intend to take such action in the near future (Prochaska & Norcross, 2001).

Prochaska and Norcross (2001) describe the fourth stage of change, action, as the period where behavior, experiences and environment are modified in order to overcome problems. This stage requires the most time and energy and is marked by measurable changes in behavior (Fallon, 2004). The modifications accomplished in the action stage are the most visible and receive the most external recognition. If an individual has successfully altered the behavior related to their problem for one to six months, they are considered to be in the action stage (Prochaska & Norcross, 2001).

The fifth stage, maintenance, is a preventative time period. People work to prevent the onset of relapse and consolidate the accomplishments achieved in the previous stage. A person within this stage is free of the problem behavior and has engaged in the new positive behavior for more than six months (Prochaska & Norcross, 2001).

The last stage of change, known as termination, is reached when people have completed the process of change and do not find it necessary to work to prevent relapse from occurring (Prochaska & Norcross, 2001). Termination involves total confidence in one's ability to perform the behavior on a regular basis (Prochaska & Norcross, 2001).

Each stage involves a set of tasks which must be completed in order to move to the next (Bradley-Koppe, Capraro, & Patrick, 2005). The precontemplator must first acknowledge that a change is necessary, while the contemplator must make the decision to initiate the change and take action (Astroth et al., 2002).

Although not the focus of the study, the final constructs of the transtheoretical model of behavior change will be described briefly in the remainder of this section: self efficacy, temptation, decisional balance and processes of change. Exercise self-efficacy is the strongest and most consistent element when trying to predict exercise behavior among the examined psychological correlations of exercise (Sherwood & Jeffery, 2000). This idea of self-efficacy was drawn from Albert Bandura's social cognitive theory which is based on the reciprocal relationship between behavior, cognitive factors, and environmental factors all interacting as detriments of one another (Netz & Raviv, 2004; Bandura, 1986). Self-efficacy refers to an individual's belief that they can execute the proper actions needed while maintaining the new behavior (Astroth et al., 2002). DuCharme and Brawley (1995) referred to exercise self-efficacy as the level of confidence an individual has in their ability to be physically active in many different circumstances.

Self-efficacy is an important element in the early stages of exercise programs. In the early stages of exercise, retention is related to the individual's beliefs and confidence regarding physical abilities and activities, and knowing that continuing effort will pay off (Sherwood &

Jeffery, 2000). The greater the self-efficacy, the more likely it is that an individual will adhere to an exercise program or behavior change on a regular basis, moving towards a behavior that has become somewhat habitual, generating a healthy lifestyle (Sherwood & Jeffery, 2000).

Establishing high levels of self-efficacy brings the individual closer to the final stage, termination, of the transtheoretical model of behavior change (Sherwood & Jeffery, 2000).

Temptation refers to the intensity of urges to engage in a specific habit when in the midst of difficult situations (Prochaska & Velicer, 1997). Temptation varies inversely with self-efficacy across the stages of change, with temptation being highest in the earlier stages of change and lowest in the final stages of change with equal levels evident in the action stage (Prochaska & Velicer, 1997).

The decisional balance construct encompasses the weighing of pros and cons involved in engaging in a positive behavior such as exercise (Prochaska & Velicer, 1997). The cons have been associated with the earlier stages of change and the pros with the later stages (Hagger & Chatzisarantis, 2005).

The final construct, processes of change, refers to five experiential and five behavioral processes implemented by people to progress through the stages of change (Fallon, 2004; Velicer, Prochaska, Fava, Norman & Redding, 1998). The experiential process consists of consciousness raising, dramatic relief, environmental reevaluation, self-reevaluation and social liberation seen primarily in the early stages of change. The behavioral processes consist of reinforcement management, self-liberation, helping relationships, stimulus control and counter conditioning seen within the later stages of change (Prochaska & DiClemente, 1983; Prochaska, Velicer, DiClemente & Fava, 1988).

This section provided an overview of the transtheoretical model of behavior change and its five constructs: stages of change, self efficacy, temptation, decisional balance and the processes of change, focusing on the stages of change for purposes of this study. These stages are used to profile the subjects of this study, providing classifications of exercise behavior. The following section will address motivation and its application to the transtheoretical model of behavior change as applied to the stages of change.

Motivation

Human beings can be proactive and engaged or, rather, passive and estranged in life regarding motivation to participate in a particular activity or behavior (Ryan & Deci, 2000). This is a result of the environment in which humans develop and inhabit. Human nature can be either active or passive at times or, productive and lackluster. Human nature is therefore comprised of more than simple dispositional differences and is a function beyond biological endowments. Conditioning may take place due to social environments. The social contexts in which humans belong to presents differences in motivation and personal growth within oneself and between other individuals, resulting in individuals being more self-motivated, energized and involved in certain situations, environments and cultures than in others. Ryan and Deci (1985, 2000) have focused much of their research on understanding the social contexts in which humans belong to, fostering rather than undercutting positive human potential. This has great significance when trying to determine the causes of human behavior, optimizing human development, performance and well being (Deci & Ryan 1985; Ryan & Deci, 2000).

Motivation pertains to “energy, direction, persistence and equifinality – all aspects of activation and intention (Ryan & Deci, 2000, p. 69).” Motivation has been described as an internal factor, arousing and directing human behavior (Iso-Ahola & St. Clair, 2000). People can be motivated by many different factors. They can be motivated because they value an activity or

because there is external pressure. A motivation theory must also take into account the needs that are “innate” to an organism (i.e., needs that must be satisfied in order for one to remain healthy) and those obtained through interactions with the environment (Ryan & Deci, 2000). Deci and Ryan (1985) stated that the field of motivation defines the aspects related to an organism’s needs and the processes and structures that transmit those needs to behavior. Motivation in turn lends itself to the psychological mechanism governing the direction, intensity and persistence of behavior (Iso-Ahola & St. Clair, 2000). The direction refers to the goals a person may choose to pursue while intensity determines the amount of effort expended to achieve the said goal and persistence is the length of time an individual chooses to pursue the goal. Iso-Ahola and St. Clair (2000) stated that motivation revolves around intentions and goals and is described as a cognitive activity marked by conscious mental acts.

It is important to understand the difference between permanent and temporary goals that individuals may choose to pursue and the relationship between permanent and temporary motivation (Iso-Ahola & St. Clair, 2000). Permanent goals are described as enduring goals in which people are committed to. Becoming physically fit or healthy is an enduring or permanent goal. The distinction between those exhibiting enduring or permanent goals to those exhibiting temporary goals are evident among regular exercisers within the later stages of change (i.e., action, maintenance, termination) and irregular exercisers falling within the earlier stages of change (i.e., precontemplation, contemplation). The regular exerciser has a more stable, permanent, intention to exercise and is therefore continuously motivated. Exercise has more or less become a routine for the individual.

Iso-Ahola and St. Claire (2000) described exercise in terms of the irregular exerciser as being not a routine but rather an action requiring a significant amount of cognitive thought in

order to execute the behavior. The temporary goal attainment is greatly attributed to a supporting social environment according to Iso-Ahola and St. Claire (2000). It is important to understand that those who do not exercise on a routine basis may still have an enduring goal of being physically fit or healthy much like the regular exercisers. However, they describe that the difference resides in the form of motivation.

On the other hand, Iso-Ahola and St. Claire (2000) describe the regular exercisers to have identified or internalized the behavior, feeling a sense of self-determination and intrinsic motivation in regards to exercise. Even though the regular exercisers have a goal of being physically fit and healthy, the goal is not an extrinsic motivator, rather, they exercise for the pure enjoyment and satisfaction itself. Those who have not internalized the behavior, exercise because they feel as if they should because they know exercise is good for them. They are extrinsically motivated to perform the behavior, exhibiting little to no self-determination (Iso-Ahola & St. Claire, 2000). Iso-Ahola and St. Claire (2000) stated that the more self-determined or intrinsically motivated the behavior, the longer the behavior can be maintained. If the enduring goal is based on extrinsic factors (e.g., exercise to lose weight) perceived constraints may easily interrupt the process of attaining the goal. The constraints often become excuses for not finding time to reach the identified goal.

For purposes of this study, self-determination theory will provide the motivational framework of the subjects which will contribute to the understanding of exercise consumer behavior within the context to this study. Within the field of exercise promotion, Mullan and Markland (1997) stated that the success in adhering to a regular exercise program is largely attributed to the reasons for which exercise is undertaken, or in other words, motivation. Many other motivation theories pertain to surface (descriptive) motives, such as weight control, sexual

attractiveness, general appearance, fitness/health, mood improvement and enjoyment, not revealing significant information pertaining to the underlying motivational processes or psychological mechanism associated with the behavior (Ingledeu, Markland & Sheppard, 2004; Iso-Ahola & St. Clair, 2000; Ko, Park, & Claussen, 2008). Other motivation theories involving exercise focus on extrinsic reinforcements (e.g. penalty, compensation, behavioral and social reinforcement) (Matsumoto & Takenaka, 2004). It is difficult to maintain and reinforce long-term behavioral changes based exclusively on extrinsic reinforcements. In an effort to reach health related goals, motivation must be internalized, where extrinsic motivation gradually shifts towards becoming intrinsic (Matsumoto & Takenaka, 2004). For this reason, researchers have focused on Ryan and Deci's self-determination theory (e.g., Iso-Ahola & St. Clair, 2000; Matsumoto & Takenaka, 2004; Mullan & Markland, 1990; Thogersen-Ntoumani & Ntoumanis, 2006).

The self-determination theory (SDT) has been adopted by researchers trying to determine human potential in domains such as education, work, sport, religion, psychotherapy and health care (Ryan & Deci, 2000). Self-determination theory has been used to provide a complete picture of human motivation unlike other theories of intentional behavior which have been argued to be too simplistic and mechanistic (Hagger & Chatzisarantis, 2005). More specifically, researchers in the health and exercise psychology fields have focused on this theory in order to understand what motivates individuals to exercise (Mullan & Markland, 1990; Ryan & Deci 2000; Thogersen-Ntoumani & Ntoumanis, 2005; Wilson, Rodgers, Blanchard & Gessell, 2003; Wilson et al., 2002). This motivational framework, SDT, specifies the conditions in which various motives develop, resulting in the endorsement of different motives within a given context (Wilson et al., 2002).

Self-determination theory focuses on the importance of the evolved inner resources pertaining to humans' personality development and behavioral self-regulation (Ryan & Deci, 2000). According to the self-determination theory, the degree of social context satisfying a person's psychological needs for autonomy, competence and relatedness will determine the quality of motivation exhibited by the person (Hagger & Chatzisarantis, 2005; Ryan & Deci, 2000; Wilson et al., 2002). Autonomy refers to the need for an individual to be the initiator and regulator of their own actions, feeling self-determined in one's actions rather than feeling controlled or obliged to act (Hagger & Chatzisarantis, 2005; Ingledeu et al., 2004). Competence refers to the need for an individual to have the ability to produce behavioral outcomes, feeling competent in dealing with one's environment. Relatedness refers to the need to uphold satisfactory relationships with significant others (Hagger & Chatzisarantis, 2005; Ryan & Deci, 2000). These needs are essential in the facilitation of optimal growth and integration, social development and personal well-being. Needs presented within this concept, refer to elements that are deemed necessary to facilitate human growth and actualization to the fullest potential (Vallerand & Losier, 1999). Due to the fact that the need for autonomy, competence and relatedness are important for the aforementioned personal growth and actualization, it is assumed that individuals will be intrinsically motivated to move in a direction towards situations and experiences that will satisfy these basic needs (Deci & Ryan, 1985; Vallerand & Losier, 1999). Researchers can apply this idea to identify the social conditions most likely to facilitate motivation (Vallerand & Losier, 1999). Deci and Ryan (1985) explain motivated behavior to be the ability to satisfy these three basic needs. This satisfaction leads to the process of "internalization," taking in behaviors not originally intrinsically motivating. Therefore, social factors that are perceived to be supportive of an individual's feelings of autonomy, competence

and relatedness will have a positive impact on his or her motivation (Vallerand & Losier, 1999). In accordance, events that are perceived to be negative on an individual's feelings of autonomy, competence and relatedness will most likely undercut their motivation (Vallerand & Losier, 1999).

Self-determination theory takes into account the complex nature of motivation, providing a complete picture of human motivation (Ryan & Deci, 1985). When comparing individuals whose motivation is authentic with those that are externally controlled, the authentic motivators tend to have more interest, excitement and confidence, which lends itself to being more persistent exhibiting a higher level of performance and creativity. Self-determination theory posits a differentiated approach to motivation due to the differences exhibited between self-motivation and external regulation (Ryan & Deci, 2000). Self-determination theory distinguishes between two forms of motivation related to behavior, intrinsic motivation, doing an activity for the inherent satisfaction and extrinsic motivation, doing an activity for external outcomes separate from the activity itself (Hagger & Chatzisarantis, 2005). Other forms of motivation such as participation motivations studied by (Courneya & Hellsten, 1998; Davis et al., 1995; Hsiao & Thayer, 1998) may differ in relation to intrinsic versus extrinsic qualities; however, the motives cannot be decisively classified as either intrinsic or extrinsic as seen within the self-determination theory. The extent of the participation motives representing either intrinsic or extrinsic motivation will depend on its meaning to the individual and could vary among different people, times or situations (Ingledeew et al., 2004). Self-determination theory further distinguishes between intrinsic versus extrinsic motivation, proposing a differentiated view of extrinsic motivation. The theory proposes that a person's behavior may be regulated in many different ways, forming a continuum marked by different forms of behavioral regulations.

Self-determination theory focuses on defining the type of motivation being demonstrated at any given time (Ryan & Deci, 2000). This distinction is important when trying to determine the differences in exercise behavior. Using the transtheoretical model of behavior change to profile the subjects of the study alongside the self-determination theory, enables the researcher to determine what type of motivation is specific to the stage of change an individual currently resides in.

The self-determination theory is presented along a continuum from nonself-determined (amotivation) to self-determined (intrinsic motivation). Between amotivation and intrinsic motivation lies extrinsic motivation, performing an activity to obtain a separate outcome. By specifying the different types of motivation, individual differences can be studied regarding the quality of motivation towards volitional behaviors (Hagger & Chatzisarantis, 2005). Those individuals reporting intrinsic reasons for exercise, such as enjoying the activity or a sense of feeling good, tend to exhibit greater levels of adherence to exercise than those reporting to exercise for extrinsic reasons, such as complying with external pressures or attaining some type of reward (Mullan & Markland, 1997). The following section will describe the different forms of motivation defined by the self-determination theory.

Amotivation refers to the state of lacking the intention to act (Ryan & Deci, 2000). Amotivation involves behaviors that are neither intrinsically nor extrinsically motivated (Vallerand & Losier, 1999). Amotivation reflects the absence of motivation (Vallerand & Losier, 1999). Amotivated individuals either do not act at all or act without actual intent, they simply go through the motions (Ryan & Deci, 2000). Amotivation is the product of not valuing an activity, nor feeling competent to engage in the activity or expecting the activity to result in a preferred outcome (Ryan & Deci, 2000). Those exhibiting amotivation are the least self-

determined because there is no sense of purpose (Vallerand & Losier, 1999). An example of this type of motivation would be a soccer player stating “I really do not know why I play soccer anymore; I don’t see what it does for me” (Vallerand & Losier, 1999). This individual is expressing amotivation towards the activity.

Extrinsic motivation refers to the performance of an activity in an effort to obtain a separate outcome, in contrast to intrinsic motivation where the performance of an activity stems from the inherent satisfaction of the activity itself (Ryan & Deci, 2000). This motivation can vary greatly in relation to the level of autonomy. Ryan and Deci (2000) provide the example of students who do their homework because they personally understand the value for their chosen career path are extrinsically motivated, along with those students who do their homework because they are adhering to their parents’ authority. Both of these examples involve performing an act for a separate purpose rather than the pure enjoyment of the activity itself. For this reason a sub-theory was presented by Ryan and Deci (2000) within the concept of SDT, known as organismic integration theory (OIT), detailing the different forms of extrinsic motivation. The theory proposes that people engage in behaviors that are not likely to be intrinsically motivated in an effort to experience the need for relatedness (Hagger & Chatzisarantis, 2005). This sub-theory focuses on the idea that extrinsic motives (regulations) fall along a continuum marked by different degrees of self-determination, ranging from highly controlling to volitionally endorsed (Ryan & Deci, 2000; Wilson et al., 2002). Four regulations have been identified. These regulations are referred to as external regulation, introjected regulation, identified regulation and integrated regulation (Ryan & Deci, 2000). The differences in motivation reflect the degree to which an individual internalizes or integrates the value or regulation of the requested behavior (Ryan & Deci, 2000). When one internalizes the behavior, they are identifying a particular value

or regulation while integration refers to further transforming that regulation into one of their own, becoming a self-determined notion (Ryan & Deci, 2000). An individual residing in the beginning stages of change, within the context of the transtheoretical model of behavior change, may not internalize the value of exercising whereas someone residing in the later stages of change may exhibit forms of identified regulation or integrated regulation as they are more likely to internalize and value the benefits of exercise and may engage in the act out of pure enjoyment.

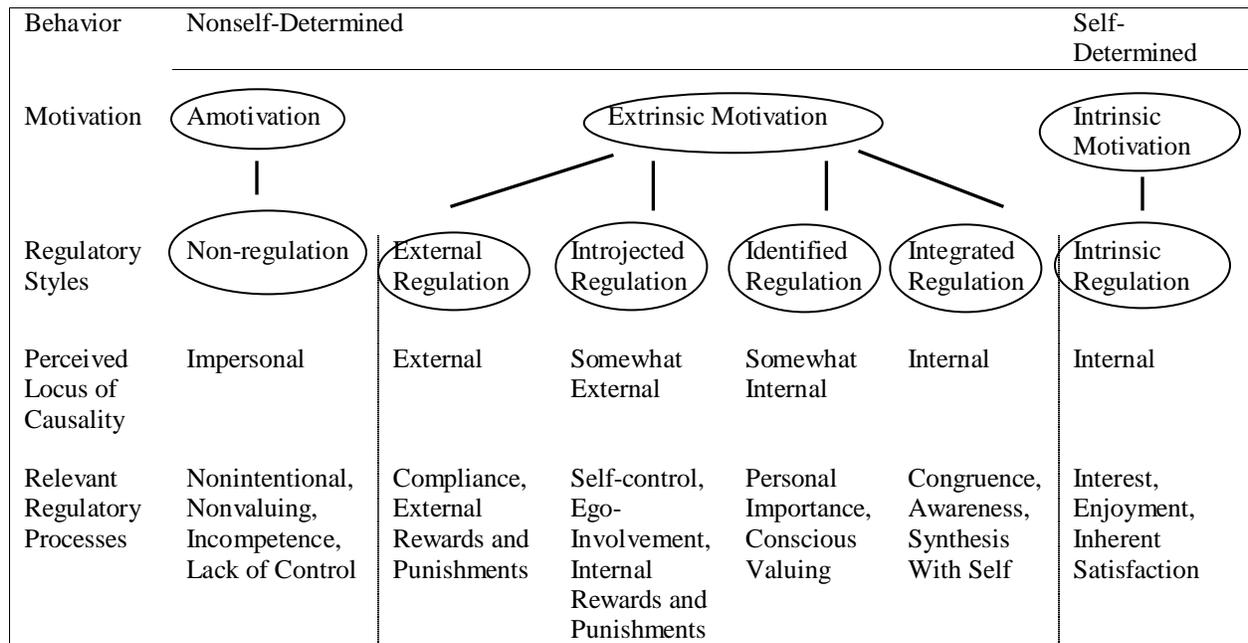


Figure 2-1. Self-Determination Continuum Showing Types of Motivation with their Regulatory Styles, Loci of Causality and Corresponding Processes (Adopted from Ryan & Deci, 2000).

Ryan and Deci (2000) presented Figure 1 illustrating the components of SDT.

Amotivation can be found on the far left of the self-determination continuum, followed by the organismic intention theory (OIT), where motivational types are arranged from left to right in terms of the degree in which motivation is derived internally (Ryan & Deci, 2000). Intrinsic motivation, the act of engaging in an activity for its inherent satisfaction, is the last point listed along the continuum. This point is considered the “prototypic instance of self-determination”

(Ryan & Deci, 2000, p. 72). Intrinsically motivated behaviors tend to feel free from pressures and external controls, marked by interest and enjoyment, and are fully self-determined (Mullan & Markland, 1997). While intrinsic motivation appears to be a fundamental component of exercise adherence, for many of those residing in the earlier stages of change, the enjoyment and stimulation from the activity itself is not sufficient enough to encourage continued participation (Mullan & Markland, 1997; Deci & Ryan, 1990). Often, the extrinsic motives, such as improved fitness, health or weight loss, are the key factors which lend themselves over time, to intrinsic interest in exercise and long-term adherence (Mullan & Markland, 1997; Deci & Ryan, 1990). This explains the shift in an individual's motivational orientation along the organismic intention continuum towards intrinsic motivation between initial exercise adoption and actual adherence to a regular exercise program (Mullan & Markland, 1997). The following section will discuss the components of extrinsic motivation based on the organismic intention sub-theory (external regulation, introjected regulation, identified regulation and integrated regulation).

External regulation involves the concept of exercising in order to appease an external demand and is considered to be the least self-determined form of extrinsic motivation. This external demand could be in reference to friends, family members or doctors (Mullan & Markland, 1997). The individual may behave in an effort to receive a reward or to avoid punishment from others or disapproval (Mullan & Markland, 1997; Vallerand & Losier, 1999). They may engage in an activity for reasons being "to show others how talented I am" (Vallerand & Losier, 1999, p. 154).

Moving along the continuum, introjected regulation, involves the feeling of coercion in regards to exercise in an effort to avoid negative emotions or to support conditional self-worth (Wilson et al., 2002). This pertains to an incomplete internalization of a regulation that was

previously considered external (Vallerand & Losier, 1999). The act still occurs due to pressure rather than choice (Vallerand & Losier, 1999). Individuals exhibiting introjected regulation would possibly feel guilty when they do not exercise. They may state reasons for exercising such as “because I must do it in order to feel good about myself” or “i’ll feel guilt if I don’t” (Vallerand & Losier, 1999, p. 154).

Identified regulation, refers to exercising because one values the importance associated with being physically active, however, still finding the behavior itself not enjoyable (Wilson et al., 2002). This may involve a runner lifting weights as a means chosen to improve their overall effectiveness of their performance while racing (Vallerand & Losier, 1999).

The last point along the OIT continuum involves integrated regulation, exercising for no separable consequence other than the actual enjoyment and satisfaction associated with the behavior itself (Wilson et al., 2002). These individuals exercise because it is fun. An individual exhibiting integrated regulation will find the experience of exercising personally valuable and freely done (Deci & Ryan, 1990). Deci and Ryan (1990) make the distinction that even after a behavioral regulation becomes fully integrated it is typically still extrinsically motivated because it is usually still instrumental to an alternative action. The motive may reside in the importance of achieving personal goals rather than inherent or intrinsic interest (Deci & Ryan, 1990). However, the motivation is still self-determined because the behavior is undertaken freely and with no sense of coercion (Deci & Ryan, 1990).

The last point along the self-determination continuum, intrinsic motivation, encompasses the positive potential of human nature (Ryan & Deci, 2000). Intrinsic motivation refers to engaging in an activity for the inherent satisfaction rather than for some other extrinsic or tangible outcome (Hagger & Chatzisarantis, 2005). Intrinsic motivation is marked by the

inherent tendency to seek out innovation and challenges while reaching and surpassing one's limits (Ryan & Deci, 2000). The intrinsic motivation construct describes the natural instinct of humans toward assimilation, development, spontaneous interest and curiosity which are essential in the realm of cognitive and social development, representing an essential source of enjoyment and vitality in life (Ryan & Deci, 2000).

By specifying the different types of motivation, individual differences that exist between the quality of motivation towards volitional behavior can be studied (Hagger & Chatzisarantis, 2005). Deci and Ryan (2000) argue that the intensity or level of motivation exhibited by two individuals may be equal providing for quantitatively comparable behavioral performance; however, if the type of motivation is different, the quality of the performance may vary. This lends itself to the idea that a person may be intrinsically or extrinsically motivated towards a particular behavior, however, presenting the same level of behavior engagement in the eyes of an external observer (Hagger & Chatzisarantis, 2005). The persistence involving the behavior may differ depending on the type of motivation, acknowledging the importance of different forms of motivation because it provides means for explaining behavioral persistence (Hagger & Chatzisarantis, 2005).

The transtheoretical model of behavior change as discussed in the previous section can be used to categorize individuals' behavior as it relates to motivation. The model proposes that individuals engaged in behavior change pass through the stages of change ranging from no inclination of change to successful maintenance of change (Mullan & Markland, 1990). It is expected that the earlier stages of change will exhibit more amotivation while the later stages of change will exhibit more intrinsic motivation. Those in the earlier stages of change are just beginning to exercise and have not internalized the behavior, where those in the later stages of

change have been exercising for a longer period of time and are more likely to have internalized the behavior, exercising for the pure enjoyment and satisfaction of the activity itself. Higher levels of self-determined motivation (i.e., intrinsic, integrated, identified) would be evident in the later stages of change, while lower levels of self-determined motivation would be found in the earlier stages of change (i.e., amotivation, external regulation, introjected regulation) (Mullan & Markland, 1990; Thogersen-Ntoumani & Ntoumanis, 2006). In a study conducted by Thogersen-Ntoumani and Ntoumanis (2006), individuals falling within the maintenance stage of change displayed a significant amount more self-determined motivation to exercise compared to those within the preparation and action stages.

Interventions should be applied tailored to the specific stage of motivational readiness (Wallace, Buckworth, Kirby, & Sherman, 2000) trying to promote this behavioral persistence. Wallace et al. (2000) suggested that with the decrease in physical activity among college students, it is important to apply stage specific interventions within the college setting to encourage long-term maintenance of a healthy and active lifestyle. These interventions could include educational components stressing the importance of exercise, special events/activities trying to challenge the “regular exercisers” and beginning level classes trying to help individuals implement an exercise routine. Thogersen-Ntoumani & Ntoumanis (2006) stressed the importance of promoting self-determined motivation to improve an individual’s overall exercise experience in an attempt to foster the behavior. Exercise consumer behavior of college students should be examined in order to tailor these interventions and promote exercise specifically to college students’ needs and desires. The following section will examine the relationship between the self-determination theory and behavioral intentions.

Self-Determination and Exercise Consumer Behavior

In order to develop effective marketing strategies for increasing the participation rate of college students to engage in exercise, it is necessary to understand why individuals engage in exercise and what motivates them to begin or continue to exercise along with consuming products and services associated with exercising. Within the area of sport psychology, there have been many models attempting to provide practical answers explaining why participants continue to engage in regular exercise along with increasing the knowledge behind the factors that influence voluntary health-related behavior (Theodorakis, 1994). Kaltcheva and Weitz (2006) determined that by identifying and examining situational variables, in this case motivation, strategies can be developed in relation to consumer behavior. This is due to the fact that the motivation attached to the decision to participate or engage in exercise, moderates consumption behavior (Kaltcheva & Weitz, 2006). By understanding motivation, effective management of consumer behavior can be established.

The transtheoretical model of behavior change, as discussed earlier, will be used to profile the subjects of this study, creating categories based on stage of change, in attempt to further understand exercise consumer behavior. The model focuses on the idea that people move through stages towards making a behavior change where each stage is characterized by psychosocial and behavioral variables (Hagger & Chatzisarantis, 2005). In addition, the self-determination theory discussed earlier will help explain how people carry out their previously formed intentions to further understand exercise consumer behavior as a whole (Hagger & Chatzisarantis, 2005). Satia and Galanko (2007) describe the main components of the self-determination theory, intrinsic and extrinsic motivations as being a reference to the origins of the desire to engage in a particular behavior.

A study conducted by Teo, Lim and Lai (1999) emphasized the importance of intrinsic and extrinsic motivation while determining consumer behavior within the context of Internet usage. They found that extrinsic motivation (i.e. perceived usefulness) is positively related to Internet usage, further demonstrating that the user believes that the use of the system, in this case the internet, would yield positive benefits for task performance. When examining intrinsic motivation (i.e. perceived enjoyment), Teo et al. (1999) found that the high frequency of Internet usage and daily Internet usage were as expected because if an activity is enjoyable, it is likely to be indulged in more frequently and for a longer period of time. This idea can translate into exercise, it is assumed that the more intrinsic the motivation, the more likely an individual is to engage in exercise for the pure enjoyment and satisfaction of the activity (Mullan & Markland, 1990).

An additional study conducted by Shang, Chen and Shen (2005) examined extrinsic and intrinsic motivation in the context of on-line shopping consumer behavior. Previous research explained on-line shopping as a goal-oriented task, believing that the consumer knew what they were looking for, and therefore they could search for the product quickly and make their decision. Shang et al. (2005) found that intrinsic motivators were a key reason pertaining to consumers' decision to shop on-line. In the contrary to previous research, Shang et al. (2005) found that extrinsic motivators were not as significant as intrinsic motivators.

Satia and Galanko (2007) examined intrinsic and extrinsic motivation in the context of dietary consumption using a cross-sectional survey of 658 African American adults. They found a connection between motivation and the intention to change dietary consumption among African Americans. Most respondents stated intrinsic reasons as the dominant motivators for dietary change. Males were more likely to report extrinsic influencers for dietary change than

females. Satia and Galanko (2007) emphasized the importance of tailoring dietary interventions in accordance with intrinsic and extrinsic motives to be most effective for positive dietary change.

James and Ross (2004) conducted a study to understand the motives related to consumers that attend nonrevenue sports within intercollegiate athletics. They found the motives to be more extrinsic in nature (i.e. entertainment, skill, drama and team effort). James and Ross (2004) stressed the importance of understanding motives that drive consumers' interest. They suggested that this understanding of motivation would provide sport marketers with information that could be used to develop targeted promotional campaigns based on consumers' motives to help increase attendance.

Kilpatrick, Hebert & Bartholomew (2005) examined motivation in connection to sport and exercise participation. They found intrinsic motivation (i.e. challenge, social recognition and enjoyment) to be more closely linked to sport participation in contrast to exercise participation being more closely linked to extrinsic motivation (i.e. appearance, health pressures, stress management and social recognition). Kilpatrick et al. (2005) suggested that the extrinsic nature of the motives in connection to exercise might present difficulties in long-term maintenance of the behavior.

The use of motivation as a means to determine future behavior has been further examined by Vallerand & Bissonnette (1992). Vallerand and Bissonnette (1992) proposed the use of the self-determination regulations as predictors of future behavior using a real-life setting. The study examined motivational styles in relation to academic activities. During the second week of a compulsory French course at the junior college level, students completed a questionnaire assessing their intrinsic, extrinsic and amotivational styles toward academic activities. Four

months later, at the end of the semester, persistence and drop-out behavior was assessed in relation to motivational style. It was found that those students who persisted and completed the course exhibited higher initial levels of intrinsic motivation, more identified and integrated regulations, and were less amotivated towards academic activities than students who had dropped out of the course. While previous research has presented the idea that extrinsic motivation is negatively associated with behavior and other outcomes, Vallerand and Bissonnette (1992) found that the outcomes associated with extrinsic motivation are highly dependent on the type of extrinsic motivation involved, stressing the importance of the OIT continuum within the self-determination theory. Vallerand and Bissonnette (1992) found that the nonself-determined types of extrinsic motivation, external and introjected, were not related to persistence in behavior. In contrast, the more self-determined forms of extrinsic motivation, integrated and identified, were found to be positively related to behavioral persistence. Lastly, Vallerand and Bissonnette (1992) found that amotivation was negatively related to behavioral persistence.

In addition to examining the motivational orientation of an individual in regards to consumer behavior, it is important to understand the context in which the behavior is occurring. Research conducted in the retail field provides a basis to further understand consumer behavior. The retail field provides additional information beyond the scope of this study pertaining to why people consume what they consume. These factors may lend themselves to further explain and understand the results of this study regarding an individuals' exercise consumer behavior because like the retail field, recreational providers are still attempting to sell a product. However, the recreational provider may be selling a product in the form of a service. Kaltcheva and Weitz (2006) found that the level of excitement retailers should create in their stores should reflect the shopping motivation of their customers. First the retailer must determine what they

are attempting to sell (i.e., a service vs. a product). Other factors to consider when trying to determine consumer behavior include, day of the week, time of day, time of year and location (Kaltcheva & Weitz, 2006). Consumers vary depending on motivational orientation. A recreational consumer engages in shopping for the inherent satisfaction from the shopping itself (Kaltcheva & Weitz, 2006). The task-oriented consumer engages in shopping out of the necessity to obtain the needed products, services or information with little or no inherent satisfaction derived from the shopping activity itself (Kaltcheva & Weitz, 2006). This knowledge can be used to implement different marketing strategies to influence the consumer's behavior (Kaltcheva & Weitz, 2006). In addition, Shang et al.'s (2005) study examining on-line consumer behavior revealed similar suggestions. Those that are recreationally shopping online tend to be more intrinsically motivated, enjoying the experience. They suggest that it would be important to keep them on-line as long as possible, implementing interactive virtual space, entertainment, creating exclusive opportunities to on-line shoppers and secrecy. Those using the internet for work-related use are motivated more extrinsically and would be focused on the economic advantages of the use or the ability to retain a job or obtain a promotion.

These ideas can provide a basis for understanding consumer behavior related to the exercise and health field. After determining the current stage of change of an individual (i.e., how long they have been exercising) and the motivational orientation (e.g., external vs. integrated) an assumption can be made regarding their consumer behavior. Those individuals who just began to exercise more recently and are extrinsically motivated, motivated by external factors (e.g., a doctor, family or friends) may be more likely to attend informational sessions on proper technique and beginner level group fitness classes. In contrast, an individual who has been exercising consistently for years and is intrinsically motivated by the inherent satisfaction

and enjoyment of the activity may be more likely to attend a high intensity fitness class (e.g., bootcamp) or take part in strength challenges conducted on-site in a weight room. This study will attempt to further explain exercise consumer behavior and provide suggestions in regards to the relationship between exercise consumer behavior, motivation and stage of change.

Summary

The review of literature covered topics regarding the transtheoretical model of behavior change, self-determination theory and consumer behavior. The transtheoretical model of behavior change focuses on the processes and strategies used to progress individuals through the six stages of change. These stages are identified as precontemplation, contemplation, preparation, action, maintenance and termination. Key motivation factors for college students to engage in physical fitness and lead a healthy lifestyle can be determined through assessing these stages of change.

Self-determination theory was used to understand motivation across the stages of change. Self-determination theory is presented along a continuum from nonself-determined (amotivation) to self-determined (intrinsic motivation). Extrinsic motivation, performing an activity in an effort to obtain a separate outcome falls between amotivation and intrinsic motivation. The theory involves a sub-theory known as organismic integration theory, detailing the different forms of extrinsic motivation. Organismic integration theory proposes that extrinsic motives (called regulations), fall along a continuum marked by different degrees of self-determination, ranging from highly controlling to volitionally endorsed (Wilson et al., 2002). These regulations are referred to as external, introjected, identified and integrated. The differences in motivation reflect the degree to which an individual internalizes or integrates the value or regulation of the requested behavior (Ryan & Deci, 2000). This study will examine the differences between motivational variables across the stages of change related to the transtheoretical model of

behavior change. Furthermore, the association between amotivation, extrinsic motivation and intrinsic motivation will be examined to test for its impact on college students' exercise consumer behavior.

CHAPTER 3 METHOD, PROCEDURES AND DATA ANALYSIS

The purpose of this study was to determine how students in different stages of change differ in their motivation and how motivation impacts their consumer behavior related to exercise. This section describes the subjects of the study, the instrument and procedures used for the study and the method of data analysis.

Method

Description of Population

The subjects for this study were University of Florida students. The University of Florida student population was 51,413 for the 08-09 school year. The student population was comprised of 34,156 undergraduates and 11,615 graduate students with 5,632 professional, post-baccalaureate and non-degree seeking students. The undergraduate female population was 19,523 (08-09) and the undergraduate male population was 16,374 (08-09). The graduate, professional, post baccalaureate and non-degree seeking student female population was 8,233 (08-09) and the graduate, professional, post baccalaureate and non-degree seeking student male population was 7,978 (08-09).

Description of Instrument

An online questionnaire was used to measure stage of change related to exercise behavior, motivation to exercise and exercise consumer behavior among the University of Florida student population. An introductory paragraph was included in the e-mail invitation to the survey, stating the purpose of the study and the directions. The questionnaire used for this study included three sections. The first section assessed the stage of exercise behavior change that the subject was involved in along with the number of days the subject engaged in exercise. The second section provided a list of items pertaining to motivation to exercise and the last section

included exercise consumer behavior items. Demographic questions were included at the end of the questionnaire.

Stages of Exercise Change Questionnaire (SECQ)

To measure the stages of exercise behavior, the researcher included the Stages of Exercise Change Questionnaire, SECQ (Reed et al., 1997). The questionnaire included a definition of “exercise” based on the SECQ (Reed et al., 1997). Exercise was defined as being “any planned physical activity (e.g., brisk walking, aerobics, group fitness classes, intramural sports games jogging, bicycling and swimming) performed to increase physical fitness. Such activity should be performed 3-5 times per week for 20-60 minutes per session. Exercise does not have to be painful to be effective, but should be done at a level that increases your heart rate and causes you to break a sweat.”

The SECQ consisted of a five-item, ordered-categorical scale based on the transtheoretical model of behavior change (Cardinal, 1997). Participants were asked to identify which item best represented their current exercise behavior. The precontemplation item stated, “I presently do not exercise and do not plan to start exercising in the next 6 months.” The contemplation item stated, “I presently do not exercise, but I have been thinking about starting to exercise within the next 6 months.” The preparation item stated, “I presently get some exercise, but not regularly.” The action item stated, “I presently exercise on a regular basis, but I have only begun doing so within the past 6 months.” The maintenance item stated, “I presently exercise on a regular basis and have been doing so for longer than 6 months.” Due to the incomplete reference of all six stages of change in SECQ, a sixth item was added by the researcher to assess the last stage of change, termination. The item was based on previous literature (Astroth et al., 2002; Fallon, 2004; Prochaska & Norcross, 2001) describing the characteristics of individuals residing in the last stage of change, stating “I currently exercise on

a regular basis, and have been doing so for more than a year, exercise is a part of my lifestyle.” According to Cardinal (1995a, 1995c) the construct validity of the SECQ scale has been adequately demonstrated (Cardinal, 1997).

The second question assessed the average number of days per week the participant engaged in exercise. A filter question was applied to those that fell within the first three stages of change because they were either not exercising at all or not exercising on a regular basis (precontemplation, contemplation and preparation). The respondents were asked “what is the main reason preventing you from exercising on a regular basis?” in an effort to determine potential barriers to exercise. A total of nine barriers were included with the option of “other”. The barriers were based on Downs and Hausenblas (2005) study in which raw data themes were identified and organized into higher-ordered themes to determine the most salient beliefs obstructing exercise participation. These responses were not used directly in the study but provided the researcher with additional feedback and an understanding of student exercise intentions. These answers were intended to assist in determining ways to move individuals to the next stage of change. Individuals that resided within the first two stages of change, the “non-exercisers,” were directed to the third section of the survey involving the exercise consumer behavior items and bypassed the second section that asked “why do you engage in exercise?” because they were not currently exercising and therefore could not properly answer the question. Individuals that resided within the third stage of change continued on to the remainder of the survey in sequential order.

Exercise Motivation Scale (EMS)

The second section included the Exercise Motivation Scale (EMS) which the researcher adapted from the Sport Motivation Scale-6 (SMS-6, Mallett et al., 2007) to fit the context of the study. The SMS-6 scale has been used to assess the varying motivational factors within the

context of self-determination theory (SDT) (Mallett et al., 2007). Mallett et al. (2007) adapted the SMS-6 scale from the original Sport Motivation Scale (SMS) improving the validity of the scale. The revised scale presented internal consistencies using Cronbach's alpha above ($\alpha > 0.70$) with a mean score ($M = 0.78$) for all coefficients (Mallett et al., 2007). The SMS-6 scale includes a six-factor, 24-item scale consistent with SDT. The revised Exercise Motivation Scale, adapted by the researcher, measures six forms of motivation reflecting the varying degrees of self-determination along the continuum: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation and intrinsic motivation (see Appendix A for a list of items by motivation category) (Mallett et al., 2007). Participants were asked to respond to the question, "Why do you engage in exercise?" with such items as, "for the excitement I feel when I am really involved in exercise". Participants responded using a 7-point Likert scale (Kaltcheva & Weitz, 2006) ranging from 1 (does not correspond at all) to 7 (corresponds exactly).

Exercise Consumer Behavior

The third section involved questions regarding consumer behavioral intentions as related to exercise and recreational sports programs and services. The researcher developed the questions based on the main recreational sports program and service offerings available within a university recreational sports department. The main recreational sports programs and services were identified by the Director of Recreational Sports and the Marketing Graduate Assistant at the University of Florida as being Intramural Sports, Group Fitness, Personal Training and Assessment Center, Personal Training, special events/workshops and the Web site. The items addressed the consumers' purchasing, participating, attending and Web site usage. The items were separated further into advanced level/competitive and beginner level/recreational intentions in order to determine more specific differences in exercise consumer behavioral intentions. The section consisted of 9-items. The subjects were asked to respond to the question "How likely are

you to engage in the following?” The items related to likelihood to consume exercise related products and services within a university recreational program setting. Participants responded using a 7-point Likert scale ranging from 1 (not likely at all) to 7 (extremely likely). Two experts from the sport management field reviewed the items for face validity.

The questionnaire ended with six demographic items to determine the participant’s gender, year in school, residence, college, major and race/ethnic background. A copy of the complete questionnaire can be found in Appendix B.

Procedures

The study was conducted during the months of April and May 2009 using an online questionnaire administered by StudentVoice. StudentVoice is a comprehensive assessment program used in higher education. A StudentVoice contract was established by the Division of Student Affairs (DOS), permitting the use of the program by all DOS departments. The researcher submitted the survey questions and the consent letter to the Institutional Review Board (IRB) for approval. After approval, the researcher sent a word document containing the survey questions to StudentVoice who then created the online survey to be used for the study. A pilot test was conducted using the online survey with a small number of students for any working and content issues.

The subjects for this study were selected at random by the University’s Registrar office. The Registrar office provided the Department of Recreational Sports with a random list of 4,000 University of Florida student e-mails. The list included both undergraduate e-mails and graduate e-mails. These e-mails were kept within the Department of Recreational Sports property and administered to StudentVoice, an online assessment platform for higher education, solely for distribution of this survey. The questionnaire was sent to a total of 4,000 subjects to ensure an

adequate sample size response, expecting a minimum response rate of 10%. Each subject was informed that his or her participation was voluntary and confidential.

StudentVoice sent an initial e-mail to all e-mail addresses provided during the week of April 6, 2009 through May 24, 2009. All University of Florida undergraduate, graduate and professional students were considered possible subjects for this study. Subjects were asked to complete the online questionnaire sent via e-mail. The e-mail displayed the consent letter for the study. Participants were informed that by clicking on the link to the survey, they were consenting to take the survey. A reminder e-mail was sent by StudentVoice one week after the initial inquiry to all non-respondents. An additional reminder e-mail was sent to non-respondents three days later, with a final reminder sent four days later. After three weeks, the researcher concluded the data collection process and exported the data from the StudentVoice system in excel format and then uploaded the data to Social Package for Social Sciences (SPSS) for review and analysis.

There were a total of 471 responses. Of those responses there were 414 complete responses. This resulted in a (10%) response rate, which was the anticipated minimum response rate for the study.

Data Analysis

Data Preparation

There were ($N = 414$) complete responses and ($N = 57$) incomplete responses that were dropped from further analysis. All variables were coded and labeled. In order to check for response bias, the researcher labeled the responses corresponding to the week in which the participants completed the survey. A one-way ANOVA test was conducted comparing the three group responses (week 1, week 2, week 3) to test for differences among the nine dependent variables involving consumer behavior. The results revealed one significant difference ($p =$

.016) involving only one dependent variable, “joining an intramural competitive league.” Week one respondents’ mean score ($M = 2.87$) was significantly lower than week two ($M = 3.31$) and week three ($M = 3.61$). This difference may be due to the fact that the survey focused on exercise and was titled Exercise Motivation Questionnaire. Intramural Sports followers may not have initially felt the need to respond. Overall this variable was not considered to significantly bias the data.

Descriptive Statistics

The demographic items were analyzed using descriptive statistics to determine the background and characteristics of the subjects. Additional items such as average number of days a week an individual exercised and items pertaining to barriers preventing exercise were tabulated and applied in the discussion section of the results. A summary of the results can be found in the following chapter (Results).

Factor Analysis and Reliability

In order to test the uni-dimensionality of each of the motivation factors present within the Exercise Motivation Scale consisting of a six-factor, 24-item scale, factor analysis was used with varimax rotation, principal components analysis and eigenvalues set to 1. The four items that measured each of the six motivation factors were selected and analyzed. In total, six factor analyses were conducted. All factors proved to be uni-dimensional with Cronbach’s alpha over ($\alpha > .70$). See Table 3-1 for complete factor analysis results.

Table 3-1. Exercise Motivation Scale Factor Analysis Results by Factor

	Factor					
	Amotivation	External	Introjected	Identified	Integrated	Intrinsic
Eigenvalue	2.77	2.76	2.43	2.33	2.97	2.46
Cronbach’s Alpha	0.85	0.85	0.78	0.76	0.88	0.79
% Variance Explained	69.19	68.91	60.69	58.33	74.24	61.39

Next, six new variables (amotivation, external, introjected, identified, integrated and intrinsic) were created by taking the mean score of the items comprising each factor that served as the dependent variables for testing hypotheses one and two.

Hypothesis One

The respondents were categorized by stage of change into four main exercise groups: preparation, action, maintenance and termination. The first two categories: precontemplation and contemplation were analyzed separately because those respondents were not currently exercising and therefore were not asked to complete the second section of the questionnaire pertaining to motivation to exercise.

Multivariate analysis of variance (MANOVA) was used to test H1 distinguishing the differences between stage of change and motivation. The dependent variables were the six new motivation variables created through the factor analysis procedures described above, while the independent variables were the stages of change of those currently exercising (preparation, action, maintenance and termination). A priori planned comparisons were requested to test for statistical differences between groups.

Hypothesis Two

Regression analysis was used to test H2, to determine the connection between motivation and consumer behavior. It is important to note that at this level of analysis; only the last four stages of change were involved in the analysis. Again, respondents falling within the first two stages of change were not asked to respond to the motivation items. The six new motivation variables served as the independent variables while the nine consumer behavior items served as the dependent variables. Multicollinearity tests showed high correlations among the last three motivation variables, which resulted in dropping the last two motivation variables (integrated

regulation and intrinsic motivation), leaving four independent variables for analysis. A total of nine regressions were conducted.

Hypothesis Three

Multivariate analysis of variance (MANOVA) was used to test H3, distinguishing the differences between stages of change and exercise consumer behavior. All respondents were used for this test making six categories: precontemplation, contemplation, preparation, action, maintenance and termination. The dependent variables were the nine consumer behavior items and the independent variables were the stages of change. A priori planned comparisons were requested to test for statistical differences between groups.

CHAPTER 4 RESULTS

This section describes the results of the study identifying the link between motivation and consumer behavior by stage of change. The tabulation and analysis of the data was used to answer the research hypotheses as follows: H1 examined the differences between stage of change and motivation, H2 examined the connection between motivation and exercise consumer behavior and H3 examined the differences between all stages of change and exercise consumer behavior.

Demographics of Sample

The total sample size consisted of 414 completed responses with (37%, $N = 151$) males and (64%, $N = 263$) females. This gender breakdown was similar to the gender enrollment for the 2008/09 school year at the University of Florida, 54% were female students and 46% were male students. A majority of respondents reported living off-campus (72%, $N = 301$). The year in school for the respondents were as follows: freshmen (18%, $N = 75$), sophomores (13%, $N = 54$), juniors (17%, $N = 72$), seniors (22%, $N = 91$) and graduate (30%, $N = 122$). The top three racial/ethnic backgrounds of the respondents were White/Caucasian respondents (73%, $N = 301$), Hispanic (10%, $N = 41$) and Asian (9%, $N = 35$). The largest percentage of the respondents were from the College of Liberal Arts and Sciences (28%, $N = 116$), followed by the College of Engineering (16%, $N = 66$), the College of Agriculture and Life Sciences (12%, $N = 49$) and Warrington Business Administration (11%, $N = 46$). For a complete listing of demographic and sample characteristics see Table 4-2.

Table 4-2. Demographics of Subjects by Frequency and Percent

Gender	Frequency	Percent %
Male	151	36.5
Female	263	63.5

Table 4-2. Cont

.	Frequency	Percent%
Residence		
On-Campus	113	27.3
Off-Campus	301	72.7
Year in School		
Freshman	75	18.1
Sophomore	54	13
Junior	72	17.4
Senior	91	22
Graduate	122	29.5
Total	414	100
Race/Ethnic Background		
White/Caucasian	301	72.7
Hispanic	41	9.9
Asian	35	8.5
Black or African American	18	4.3
Multiracial	11	2.7
Other	8	1.9
College		
Agriculture and Life Sciences	49	11.8
Warrington Business Administration	46	11.1
Design, Construction and Planning	9	2.2
Education	28	6.8
Engineering	66	15.9
Fine Arts	6	1.4
Health and Human Performance	26	6.3
Journalism and Communications	26	6.3
Liberal Arts and Sciences	116	28
Medicine	1	.2
Nursing	14	3.4
Pharmacy	6	1.4
Public Health and Health Professions	20	4.8
Veterinary Medicine	1	.2
Total	414	100

The largest percentage of the respondents (36%, $N = 149$) reported as being in the termination stage of change. See Table 4-3 for frequency and percentage of students reporting the stages of change they belonged to. The majority of respondents (52.8%, $N = 122$) reported exercising an average of 3-4 days per week.

Table 4-3. Stages of Change of Subjects by Frequency and Percent

Stage	Frequency	Percent %
Precontemplation	8	1.9
Contemplation	66	15.9
Preparation	109	26.3
Action	59	14.3
Maintenance	23	5.6
Termination	149	36.0
Total	414	100

See Table 4-4 for frequency and percentage of the average number of days per week of exercise reported by respondents within the last three stages of change (action, maintenance and termination).

Table 4-4. Average Days of Exercise per Week by Frequency and Percent

# of Days	Frequency	Percent %
1-2 Days	15	6.5
3-4 Days	122	52.8
5-6 Days	83	35.9
7 Days	11	4.8
Total	231	100

A majority ($N = 68$) of the subjects residing within the termination stage of change reported exercising an average of 3-4 days per week. See Table 4-5 for a cross-tabulation of average days of exercise per week by stage of change. Time (57%, $N = 104$) was the most reported reason preventing those within the first three stages of change from exercising. Frequency and percentage of the barriers to exercise can be found in Table 4-6.

Table 4-5. Average Days of Exercise per Week by Stage of Change by Frequency

Stage of Change	Average Days of Exercise				Total
	1-2 Days	3-4 Days	5-6 Days	7 Days	
Action	8	34	15	2	59
Maintenance	2	20	1	0	23
Termination	5	68	67	9	149
Total	15	122	83	11	231

Table 4-6. Barriers to Exercise by Frequency and Percent

Barrier	Frequency	Percent %
Time	104	56.8
Lack of Motivation & Energy	58	31.7
Illness	4	2.2
Lack of Social Support	3	1.6
Lack of Skill	3	1.6
Lack of Access to Facilities	2	1.1
Not Important	2	1.1
Other	4	2.2
Total	183	100

Introjected regulation was reported as having the highest mean score ($M = 4.69$) among all of the motivation variables. See Table 4-7 for a complete list of mean scores and standard deviations of the six motivation variables.

Table 4-7. Mean Scores of Motivation Variables

Variable	Mean	SD
Amotivation	1.79	1.1
External Regulation	4.23	1.5
Introjected Regulation	4.69	1.4
Identified Regulation	4.10	1.2
Integrated Regulation	4.33	1.6
Intrinsic Motivation	4.53	1.3

Note: Items were measured on a 7-point Likert scale ranging from 1 (does not correspond) to 7 (corresponds exactly).

Consumer behavior variable two, “purchase exercise clothing”, received the highest mean score ($M = 4.59$) among all of the consumer behavior items in terms of the likelihood of

happening. See Table 4-8 for a complete list of mean scores and standard deviations of the nine consumer behavior variables.

Table 4-8. Mean Scores of Consumer Behavior Variables

Item	Mean	SD
CB1 Purchase Equipment	2.99	1.78
CB2 Purchase Clothing	4.59	1.82
CB3 Participate Advanced	4.01	1.92
CB4 Participate Beginner	4.41	1.68
CB5 Intramural Competitive	3.18	2.10
CB6 Intramural Recreational	3.71	2.16
CB7 Fitness Assessment	3.27	1.87
CB8 Hire a Personal Trainer	2.58	1.79
CB9 Visit Web site	4.41	2.05

Note: Items were measured on a 7-point Likert scale ranging from 1 (not likely at all) to 7 (extremely likely).

Hypothesis One

The results of the first MANOVA testing H1, the differences between the four stages of change of the individuals currently exercising (preparation, action, maintenance and termination) and motivation, was supported on a multivariate level with a Wilks' Lambda = .535, $F(18, 937) = 12.88$, $p < .01$. There were significant differences ($p < .05$) visible in the between-subjects statistics across all stages of change. For a summary of MANOVA results see Table 4-9. A priori comparisons were requested through the MANOVA test. Based on the a priori comparisons there were significant differences between the mean scores for stages of change and motivation variables.

Amotivation

There was a significant difference in the mean scores for amotivation between preparation and action ($M_{diff} = .701$, $SD = .157$, $p < .01$) and preparation and termination ($M_{diff} = .919$, $SD = .122$, $p < .01$) with a higher mean score ($M = 2.32$) for preparation. There was also a significant

difference in the mean scores for amotivation between action and maintenance ($M_{diff} = -.605$, $SD = .238$, $p = .012$) and maintenance and termination ($M_{diff} = .824$, $SD = .217$, $p < .01$) with a higher mean score ($M = 2.23$) for maintenance.

External Regulation

There was a significant difference in the mean score for external regulation between preparation and termination ($M_{diff} = -.548$, $SD = .186$, $p = .003$) with a higher mean score ($M = 4.51$) for termination.

Introjected Regulation

There was a significant difference in the mean scores for introjected regulation between preparation and maintenance ($M_{diff} = -.800$, $SD = .292$, $p = .007$) with a higher mean score ($M = 4.92$) for maintenance. There was also a significant difference in the mean scores for introjected regulation between preparation and termination ($M_{diff} = -1.02$, $SD = .161$, $p < .01$) and action and termination ($M_{diff} = -.671$, $SD = .196$, $p = .001$) with a higher mean score ($M = 5.15$) for termination overall.

Identified Regulation

There was a significant difference in the mean scores for identified regulation between preparation and maintenance ($M_{diff} = -.890$, $SD = .264$, $p = .001$) and action and maintenance ($M_{diff} = -.869$, $SD = .283$, $p = .002$) with a higher mean score ($M = 4.5$) for maintenance overall. There was also a significant difference in the mean scores for identified regulation between preparation and termination ($M_{diff} = -.965$, $SD = .145$, $p < .01$) and action and termination ($M_{diff} = -.944$, $SD = .177$, $p < .01$) with a higher mean score ($M = 4.58$) for termination overall.

Integrated Regulation

There was a significant difference in the mean scores for integrated regulation between preparation and maintenance ($M_{diff} = -1.15$, $SD = .294$, $p < .01$) and action and maintenance (M_{diff}

= -1.05 , $SD = .315$, $p = .001$) with a higher mean score ($M = 4.58$) for maintenance overall.

There was also a significant difference in the mean scores for integrated regulation between preparation and termination ($M_{diff} = -1.85$, $SD = .162$, $p < .01$); maintenance and termination ($M_{diff} = -.701$, $SD = .287$, $p = .015$) and action and termination ($M_{diff} = -1.75$, $SD = .197$, $p = .00$) with a higher mean score ($M = 5.28$) for termination overall.

Intrinsic Motivation

There was a significant difference in the mean scores for intrinsic motivation between preparation and termination ($M_{diff} = -.713$, $SD = .156$, $p < .01$) and action and termination ($M_{diff} = -.848$, $SD = .19$, $p = .00$) with a higher mean score ($M = 4.92$) for termination overall.

For a complete summary of the mean scores and significant differences of the six motivation dependent variables by stage of change see Table 4-10.

Table 4-9. MANOVA Results for the Six Motivation Dependent Variables and the Four Stages of Change

Variable	Between Subjects Effects						
	Multivariate	Amotivation	External	Introjected	Identified	Integrated	Intrinsic
	<i>F</i> (18, 937)	<i>F</i> (3, 336)					
Stages of Change	12.9**	20.98**	3.37*	14.44**	19.29**	53.13**	10.21**

p*<.05, *p*<.001

Note: Multivariate *F* ratio was generated from Wilks' approximation of *F*.

Table 4-10. Motivation Variable Differences Between the Last Four Stages of Change

Dependent Variable	Stages of Change				Univariate Significance
	Preparation (<i>N</i> = 109)	Action (<i>N</i> = 59)	Maintenance (<i>N</i> = 23)	Termination (<i>N</i> = 149)	
Amotivation	2.32 ^a	1.62 ^b	2.23 ^a	1.40 ^b	.001
External Regulation	3.96 ^a	4.18 ^{a,b}	3.9 ^{a,b}	4.51 ^b	.020
Introjected Regulation	4.12 ^a	4.48 ^{a,b}	4.92 ^{b,c}	5.15 ^c	.001
Identified Regulation	3.61 ^a	3.63 ^a	4.50 ^b	4.58 ^b	.001
Integrated Regulation	3.43 ^a	3.53 ^a	4.58 ^b	5.28 ^c	.001
Intrinsic	4.21 ^a	4.08 ^a	4.65 ^{a,b}	4.92 ^b	.001

Note: Means with a different superscripted letter (a, b, c, d) are significantly different at the .05 level.

Items were measured on a 7-point Likert scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly).

Hypothesis Two

A series of multiple regression analyses was used to test the relationship between motivation and consumer behavior among those currently exercising. Tests for multicollinearity showed high correlations among identified regulation, integrated regulation and intrinsic variables. The last two variables, integrated regulation and intrinsic motivation, were highly correlated with identified regulation and were therefore dropped from the regression analysis leaving the following motivation variables as the dependent variables: amotivation, external regulation, introjected regulation and identified regulation. The last two motivation variables proved to measure the same as identified regulation in the likeliness to engage in exercise consumer behavior and did not present any new information to the overall analysis. Vallerand and Bissonnette (1992) found intrinsic motivation, integrated regulation and identified regulation to be closely related and the main influencers of behavior further explaining the high correlation between the three variables. For a summary of multiple regression results between consumer behavior variables and motivation see Table 4-11. Subscripts in the R^2 column describe the significance of the ANOVA model at the end of the table.

Purchase Exercise Equipment – CB1

The introjected variable ($\beta = .157, p = .02$) and identified variable ($\beta = .142, p = .03$) were significant predictors of “purchase exercise equipment.”

Purchase Exercise Clothing – CB2

The introjected variable ($\beta = .278, p < .01$) and identified variable ($\beta = .169, p = .01$) were significant predictors of “purchase exercise clothing.”

Participate in Advanced Level/High Intensity – CB3

The amotivation variable ($\beta = -.108, p = .03$) and identified variable ($\beta = .437, p < .01$) were significant predictors of “participate in advanced level/high intensity recreational sports programs and activities.”

Participate in Beginner Level/Low Intensity – CB4

The identified variable ($\beta = .202, p < .01$) was a significant predictor of “participate in beginner level/low intensity recreational sports programs and activities.”

Intramural Sports Competitive League – CB5

The external variable ($\beta = .220, p = .001$), introjected variable ($\beta = -.202, p = .002$) and identified variable ($\beta = .352, p < .01$) were significant predictors of “join an intramural sports competitive league.”

Intramural Sports Recreational League – CB6

The external variable ($\beta = .274, p < .01$), introjected variable ($\beta = -.274, p < .01$) and identified variable ($\beta = .346, p < .01$) were significant predictors of “intramural sports recreational league.”

Obtain a Fitness Assessment – CB7

The introjected variable ($\beta = .146, p = .023$) and identified variable ($\beta = .358, p < .01$) were significant predictors of “obtain a fitness assessment.”

Hire a Personal Trainer – CB8

The identified variable ($\beta = .216, p = .001$) proved to be a significant predictor of “hire a personal trainer.”

Visit the RecSports Web Site – CB9

The identified variable ($\beta = .303, p < .01$) was a significant predictor of “visit the RecSports Web site.”

Table 4-11. Regression Analysis: Predicting Exercise Consumer Behavior from Motivation Variables

DV	R ²	Standardized Beta			
		Amotivation	External	Introjected	Identified
Purchase Equipment	.078 _a	-.015	.025	.157*	.142*
Purchase Clothing	.153 _b	-.093	-.016	.278**	.169**
Participate Advanced	.240 _c	-.108*	.039	.039	.437**
Participate Beginner	.035 _d	.035	-.047	.011	.202**
IM Competitive	.177 _e	.038	.220**	-.202**	.352**
IM Recreational	.192 _f	.036	.274**	-.274**	.346**
Fitness Assessment	.191 _g	.056	-.031	.146*	.358**
Hire a PT	.097 _h	.082	-.006	.127	.216**
Visit Web site	.132 _i	.021	.016	.080	.303**

* $p < .05$ ** $p < .01$

a: $F(4, 335) = 7.05, p < .01$, b: $F(4, 335) = 15.1, p < .01$, c: $F(4, 335) = 26.4, p < .01$

d: $F(4, 335) = 3.08, p = .02$, e: $F(4, 335) = 17.9, p < .01$, f: $F(4, 335) = 19.9, p < .01$

g: $F(4, 335) = 19.8, p < .01$, h: $F(4, 335) = 9.03, p < .01$, i: $F(4, 335) = 12.7, p < .01$

Hypothesis Three

The results of the second MANOVA testing H3 (the differences between all stages of change and exercise consumer behavior) was supported at the multivariate level with a Wilks' Lambda = .599, $F(45, 1792) = 4.84, p = .00$. For a summary of MANOVA results see Table 4-12. See Table 4-13 for a complete list of mean scores and significant mean differences for each consumer behavior item based on stages of change.

A priori comparisons were requested through the MANOVA test. There were significant differences ($p < .05$) visible in the between-subjects statistics among all dependent variables excluding CB4, participate in beginner level/low intensity. Based on the a priori comparisons, there were significant differences between the mean scores of the stages of change and consumer behavior variables.

Table 4-12. MANOVA Results for the Nine Consumer Behavior Dependent Variables

Variable	Between Subjects Effects									
	Multivariate <i>F</i> (45,1792)	CB1 <i>F</i> (5,408)	CB2 <i>F</i> (5,408)	CB3 <i>F</i> (5,408)	CB4 <i>F</i> (5,408)	CB5 <i>F</i> (5,408)	CB6 <i>F</i> (5,408)	CB7 <i>F</i> (5,408)	CB8 <i>F</i> (5,408)	CB9 <i>F</i> (5,408)
Stages of Change	4.84**	11.50**	19.14**	25.58**	.49	11.38**	10.34**	5.92**	4.56**	3.81*

* $p < .05$, ** $p < .001$

Note: Multivariate F ratio was generated from Wilks' approximation of F. CB1 - Purchase Equipment, CB2 - Purchase Clothing, CB3 - Participate Advanced, CB4 - Participate Beginner, CB5 - Intramural Competitive, CB6 - Intramural Recreational, CB7 - Fitness Assessment, CB8 - Hire a Personal Trainer, CB9 - Visit RecSports Web site.

Table 4-13. Consumer Behavior Differences Between the Six Stages of Change

Dependent Variable	Stages of Change						Univariate Significance
	Precontemplation (<i>N</i> = 8)	Contemplation (<i>N</i> = 66)	Preparation (<i>N</i> = 109)	Action (<i>N</i> = 59)	Maintenance (<i>N</i> = 23)	Termination (<i>N</i> = 149)	
Purchase Equipment	1.50 ^a	1.97 ^{a,b}	2.72 ^c	3.27 ^d	2.91 ^{c,d}	3.63 ^d	.001
Purchase Clothing	2.50 ^a	3.23 ^{a,b}	4.41 ^c	4.61 ^c	4.65 ^c	5.41 ^d	.001
Participate Advanced	2.38 ^a	2.45 ^{a,b}	3.71 ^c	3.80 ^c	4.09 ^c	5.07 ^d	.001
Participate Beginner	4.00	4.41	4.44	4.63	4.57	4.29	.780
Intramural Competitive	1.88 ^{a,b}	1.82 ^b	3.15 ^a	3.12 ^a	2.91 ^a	3.93 ^d	.001
Intramural Recreational	2.00 ^a	2.30 ^a	3.89 ^{b,c}	3.61 ^b	3.70 ^{b,c}	4.34 ^c	.001
Fitness Assessment	2.25 ^a	2.70 ^a	2.90 ^a	3.17 ^a	3.39 ^{a,b}	3.86 ^b	.001
Personal Trainer	1.50 ^a	2.09 ^a	2.27 ^a	2.58 ^{a,b}	3.17 ^b	3.00 ^b	.001
Visit Web site	3.25 ^a	3.91 ^a	4.11 ^a	4.29 ^{a,b}	5.13 ^b	4.84 ^b	.001

Note: Means with a different superscripted letter (a, b, c, d) are significantly different at the .05 level.

Items were measured on a 7-point Likert scale ranging from 1 (not likely at all) to 7 (extremely likely).

Purchase Exercise Equipment - CB1

There was a significant difference in the mean scores for CB1, between precontemplation ($M = 1.50$) and the last four stages of change: preparation ($M_{diff} = -1.21, SD = .612, p = .048$) with a higher mean score ($M = 2.72$) for preparation, action ($M_{diff} = -1.77, SD = .630, p = .005$) with a higher mean score ($M = 3.27$) for action, maintenance ($M_{diff} = -1.41, SD = .686, p = .04$) with a higher mean score ($M = 2.91$) for maintenance, termination ($M_{diff} = -2.13, SD = .607, p < .01$) with a higher mean score ($M = 3.63$) for termination. There was a significant difference in the mean scores between contemplation ($M = 1.97$) and the last four stages of change: preparation ($M_{diff} = -.746, SD = .261, p = .004$) with a higher mean score ($M = 2.72$) for preparation, action ($M_{diff} = -1.30, SD = .3, p < .01$) with a higher mean score ($M = 3.27$) for action, maintenance ($M_{diff} = -.943, SD = .405, p = .02$) with a higher mean score ($M = 2.91$) for maintenance, termination ($M_{diff} = -1.66, SD = .247, p < .01$) with a higher mean score ($M = 3.63$) for termination. There was also a significant difference in the mean scores between preparation and action ($M_{diff} = -.556, SD = .27, p = .04$) with a higher mean score ($M = 3.27$) for action, along with preparation and termination ($M_{diff} = -.915, SD = .211, p < .01$) with a higher mean score ($M = 3.63$) for termination. The likeliness to “purchase exercise equipment” continued to increase as stages of change increased, with the exception of those in action ($M = 3.27$).

Purchase Exercise Clothing - CB2

There was a significant difference in the mean scores for CB2, between precontemplation ($M = 2.50$) and the last four stages of change: preparation ($M_{diff} = -1.91, SD = .605, p = .002$) with a higher mean score ($M = 4.41$) for preparation, action ($M_{diff} = -2.11, SD = .622, p = .001$) with a higher mean score ($M = 4.61$) for action, maintenance ($M_{diff} = -2.15, SD = .678, p = .002$) with a higher mean score ($M = 4.65$) for maintenance, termination ($M_{diff} = -2.90, SD = .599, p < .01$) with a higher mean score ($M = 5.41$) for termination. Significant differences in the mean

scores were also present between contemplation ($M = 3.23$) and the last four stages of change: preparation ($M_{diff} = -1.19, SD = .258, p < .01$) with a higher mean score ($M = 4.41$) for preparation, action ($M_{diff} = -1.38, SD = .296, p < .01$) with a higher mean score ($M = 4.61$) for action, maintenance ($M_{diff} = -1.43, SD = .400, p < .01$) with a higher mean score ($M = 4.65$) for maintenance, termination ($M_{diff} = -2.18, SD = .244, p < .01$) with a higher mean score ($M = 5.41$) for termination. There was also a significant difference in the mean scores between preparation and termination ($M_{diff} = -.997, SD = .208, p < .01$), action and termination ($M_{diff} = -.799, SD = .254, p = .002$) and maintenance and termination ($M_{diff} = -.757, SD = .37, p = .041$) with a higher mean score ($M = 5.41$) for termination overall. The likeliness to “purchase exercise clothing” continued to increase as stage of change increased.

Participate Advanced - CB3

There was a significant difference in the mean scores for CB3, between precontemplation ($M = 2.38$) and the last four stages of change: preparation ($M_{diff} = -1.33, SD = .617, p = .031$) with a higher mean score ($M = 3.71$) for preparation, action ($M_{diff} = -1.42, SD = .634, p = .026$) with a higher mean score ($M = 3.80$) for action, maintenance ($M_{diff} = -1.71, SD = .691, p = .014$) with a higher mean score ($M = 4.09$) for maintenance, termination ($M_{diff} = -2.70, SD = .611, p < .01$) with a higher mean score ($M = 5.07$) for termination. Significant differences in the mean scores were also present between contemplation ($M = 2.45$) and the last four stages of change: preparation ($M_{diff} = -1.25, SD = .263, p < .01$) with a higher mean score ($M = 3.71$) for preparation, action ($M_{diff} = -1.34, SD = .302, p < .01$) with a higher mean score ($M = 3.80$) for action, maintenance ($M_{diff} = -1.63, SD = .408, p < .01$) with a higher mean score ($M = 4.09$) for maintenance, termination ($M_{diff} = -2.62, SD = .249, p < .01$) with a higher mean score ($M = 5.07$) for termination. There was also a significant difference in the mean scores between preparation and termination ($M_{diff} = -1.37, SD = .212, p < .01$), action and termination ($M_{diff} = -1.28, SD =$

.259, $p < .01$) and maintenance and termination ($M_{diff} = -.987$, $SD = .377$, $p = .009$) with a higher mean score ($M = 5.07$) for termination overall. The likeliness to “participate in advanced level/high intensity recreational programs or activities” continued to increase as stage of change increased.

Participate Beginner - CB4

There were no significant differences present in the mean scores between stages of change and the dependent variable, CB4.

Intramural Sports Competitive League - CB5

There was a significant difference in the mean scores for CB5, between precontemplation and termination ($M_{diff} = -2.06$, $SD = .718$, $p = .004$) with a higher mean score ($M = 3.93$) for termination. There was a significant difference in the mean scores between contemplation ($M = 1.82$) and the last four stages of change: preparation ($M_{diff} = -1.33$, $SD = .308$, $p < .01$) with a higher mean score ($M = 3.15$) for preparation, action ($M_{diff} = -1.30$, $SD = .354$, $p < .01$) with a higher mean score ($M = 3.12$) for action, maintenance ($M_{diff} = -1.10$, $SD = .479$, $p = .023$) with a higher mean score ($M = 2.91$) for maintenance, termination ($M_{diff} = -2.12$, $SD = .292$, $p < .01$) with a higher mean score ($M = 3.93$) for termination. There was also a significant difference in the mean scores between preparation and termination ($M_{diff} = -.786$, $SD = .249$, $p = .002$), action and termination ($M_{diff} = -.814$, $SD = .304$, $p = .008$) and maintenance and termination ($M_{diff} = -1.02$, $SD = .443$, $p = .022$) with a higher mean score ($M = 3.93$) for termination overall. The likeliness to “join an intramural sports competitive league” did not increase at a steady rate in with stage of change. Termination received the highest mean score ($M = 3.93$) followed by the third stage of change, preparation ($M = 3.15$).

Intramural Sports Recreational League - CB6

There was a significant difference in the mean scores for CB6, between precontemplation ($M = 2.00$) and the last four stages of change: preparation ($M_{diff} = -1.89, SD = .750, p = .012$) with a higher mean score ($M = 3.89$) for preparation, action ($M_{diff} = -1.61, SD = .771, p = .037$) with a higher mean score ($M = 3.61$) for action, maintenance ($M_{diff} = -1.70, SD = .84, p = .044$) with a higher mean score ($M = 3.70$) for maintenance, termination ($M_{diff} = -2.34, SD = .743, p = .002$) with the highest mean score ($M = 4.34$) for termination. Significant differences in the mean scores were also present between contemplation ($M = 2.30$) and the last four stages: preparation ($M_{diff} = -1.59, SD = .319, p < .01$) with a higher mean score ($M = 3.89$) for preparation, action ($M_{diff} = -1.31, SD = .367, p < .01$) with a higher mean score ($M = 3.61$) for action, maintenance ($M_{diff} = -1.39, SD = .496, p = .01$) with a higher mean score ($M = 3.70$) for maintenance, termination ($M_{diff} = -2.03, SD = .303, p < .01$) with a higher mean score ($M = 4.34$) for termination. There was also a significant difference in the mean scores between action and termination ($M_{diff} = -.725, SD = .315, p = .02$) with a higher mean score ($M = 4.34$) for termination. The likeliness to “join an intramural recreational league” showed a steady increase as stage of change increased with the exception of preparation ($M = 3.89$) receiving the second highest mean score.

Obtain a Fitness Assessment - CB7

There was a significant difference in the mean scores for CB7, between the first four stages of change and termination ($M = 3.86$) as follows: precontemplation ($M_{diff} = -1.61, SD = .659, p = .015$), contemplation ($M_{diff} = -1.16, SD = .268, p < .01$), preparation ($M_{diff} = -.960, SD = .229, p < .01$), action ($M_{diff} = -.690, SD = .279, p = .014$) with a higher mean score ($M = 3.86$) for termination overall. The likeliness to “obtain a fitness assessment” increased as stage of change increased.

Hire a Personal Trainer - CB8

There was a significant difference in the mean scores for CB8, between the first three stages of change and maintenance ($M = 3.17$) as follows: precontemplation ($M_{diff} = -1.67, SD = .721, p = .021$), contemplation ($M_{diff} = -1.08, SD = .425, p = .011$), preparation ($M_{diff} = -.908, SD = .403, p = .025$) with a higher mean score ($M = 3.17$) for maintenance overall. There was also a significant difference in the mean scores between the first three stages of change and termination ($M = 3.00$) as follows: precontemplation ($M_{diff} = -1.50, SD = .637, p = .019$), contemplation ($M_{diff} = -.909, SD = .260, p = .001$), preparation ($M_{diff} = -.734, SD = .221, p = .001$) with a higher mean score ($M = 3.00$) for termination overall. The likeliness to “hire a personal trainer” showed a steady increase as stage of change increased with the exception of maintenance ($M = 3.17$) receiving a higher mean score than termination ($M = 3.00$).

Visit the RecSports Web Site - CB9

There was a significant difference in the mean scores for CB9, between the first three stages of change and maintenance ($M = 5.13$) as follows: precontemplation ($M_{diff} = -1.88, SD = .827, p = .024$), contemplation ($M_{diff} = -1.22, SD = .488, p = .013$), preparation ($M_{diff} = -1.02, SD = .462, p = .028$) with a higher mean score ($M = 5.13$) for maintenance overall. There was also a significant difference in the mean scores between the first three stages of change and termination ($M = 4.84$) as follows: precontemplation ($M_{diff} = -1.59, SD = .731, p = .03$), contemplation ($M_{diff} = -.930, SD = .298, p = .002$), preparation ($M_{diff} = -.729, SD = .254, p = .004$) with a higher mean score ($M = 4.84$) for termination overall. The likeliness to “visit the RecSports Web site” increased as stage of change increased with the exception of maintenance ($M = 5.13$) receiving a higher mean score than termination ($M = 4.84$).

CHAPTER 5 DISCUSSION AND CONCLUSIONS

The main objective of this study was to determine the relationship between the transtheoretical model of behavior change and motivation and the impact of motivation on exercise consumer behavior among college students. The relationship between the type of motivation and exercise consumer behavior was tested in an effort to determine what type of motivation better predicts consumer behavior across the stages of change. The results from the study presented support for all three hypotheses. Significant differences in motivation across all stages of change were found while certain types of intrinsic, extrinsic and amotivation proved to be significant predictors of exercise consumer behavior. In addition, significant differences among all stages of change and exercise consumer behavior were found. The following section will focus on the discussion of the findings and how they compare and contrast with the existing literature. Theoretical and managerial implications will be provided along with future research suggestions. The chapter will conclude with a discussion of study limitations and additional marketing implications.

Discussion

Hypothesis One

After examining the results pertaining to hypothesis one, it was evident that motivation does significantly differ across the stages of change in accordance with previous literature (Hagger & Chatzisarantis, 2005; Mullan & Markland, 1997). Based on previous literature (Mullan & Markland, 1997; Thogersen-Ntoumani & Ntoumanis, 2006), amotivation was expected to be more closely significant within the earlier stages of change or under some circumstances, the later stages. Amotivation has been found to be negatively related to behavioral persistence (Vallerand & Bissonnette, 1992). Individuals who are amotivated tend to

experience a sense of incompetence and a lack of control (Vallerand & Bissonnette, 1992).

Amotivated behaviors are considered the least self-determined type of motivation with no sense of purpose or the possibility of change (Vallerand & Bissonnette, 1992). This trend was evident within the results of this study. There were significant differences in the level of amotivation between preparation and the two stages of change, action and termination. There were also significant differences between maintenance and the two stages of change, action and termination. Overall, preparation exhibited the highest mean score. Those within the preparation stage of change have not fully internalized the behavior and may not fully understand how to or why they should exercise. Maintenance proved to have the second largest mean score for amotivation. According to Ryan & Deci (2000), amotivation refers to the state of lacking the intention to act, those exhibiting amotivation either do not act at all or act without actual intent. Those in the maintenance stage of change may be exhibiting this form of motivation because they have been exercising for quite some time and may be in need of a new challenge or a change in routine.

There was a significant difference in the level of external regulation between preparation and termination with a higher mean score for termination. This was not an expected result as those within the preparation stage of change would be expected to exhibit higher levels of extrinsic factors for exercising. Overall, termination still exhibited a higher mean score of intrinsic motivation which is supported by the literature (Mullan & Markland, 1997). While the behavior may be more internalized, individuals may still have underlying extrinsic goals (e.g., good physical shape, social benefits, well regarded by others) that coincide with the intrinsic motivation to exercise. As discussed in previous literature (Mullan & Markland, 1997; Deci & Ryan, 1990), intrinsic motivation appears to be a fundamental component of exercise adherence,

however, the enjoyment and stimulation from the activity itself may not be sufficient enough to encourage continued participation. Often, the extrinsic motives lend themselves over time, to intrinsic interest in exercise and long-term participation.

As expected moving along the self-determination continuum, higher levels of introjected regulation were present among the later stages of change. Introjected regulation can involve the sense of coercion to exercise in an effort to avoid negative emotions (i.e. “I must exercise to feel good about myself”), which would be more evident in the earlier stages of change, or to support conditional self-worth (i.e. “absolutely necessary if one wants to be in shape, must exercise regularly”) (Wilson et al., 2002). Again, as seen in previous literature, this type of motivation pertains to an incomplete internalization of a regulation that was previously considered external (Vallerand & Losier, 1999).

Continuing along the self-determination continuum to identified regulation, the results presented significant differences in mean scores between the first two stages of change and the last two, with higher mean scores for maintenance and termination. These results were in accordance with the study conducted by Thogersen-Ntoumani and Ntoumanis (2006) where individuals within the maintenance stage of change displayed a significant amount more self-determined motivation to exercise compared to those within the preparation and action stages. With the addition of the termination stage of change in the context of this study, the results follow this trend as termination is the last stage of change following maintenance.

As anticipated, similar findings were present in regards to integrated regulation. Both maintenance and termination exhibited higher mean scores that were significantly different from preparation and action stages of change. Those exhibiting integrated regulation, exercise

because it is fun, they find the behavior personally valuable and freely done, becoming more self-determined (Deci & Ryan, 1990).

Lastly, there was a significant difference present for intrinsic motivation between the mean scores of preparation and termination and action and termination, with a higher mean score for termination. There was not a significant difference present between maintenance and termination most likely due to the fact that those residing within the maintenance stage of change are beginning to truly internalize the behavior and exhibit similar motivation to those within the termination stage of change.

Overall, it was evident that motivation does significantly differ across the stages of change in accordance with previous literature (Hagger & Chatzisarantis, 2005; Mullan & Markland, 1997). The level of self-determination increased alongside the stages of change.

Hypothesis Two

The results pertaining to hypothesis two, testing the relationship between motivation and exercise consumer behavior, presented motivation variables that were significant predictors of exercise consumer behavior. It is important to note that these results involved only those within the last four stages of change, the current exercisers. Based on previous studies (Teo et al., 1999; Shang et al., 2005; Satia & Galanko, 2007; James & Ross, 2004; Kilpatrick et al., 2005), motivation has proved to influence behavior. As explained in the previous chapter discussing the results of the study, the last two motivation variables, integrated regulation and intrinsic motivation, were dropped from the regression analysis as identified regulation, integrated regulation and intrinsic motivation were highly correlated. The last two motivation variables proved to measure the same as identified regulation in the likeliness to engage in exercise behavior. These variables were more self-determined forms of motivation and have been found to influence persistence in behavior (Vallerand & Bissonnette, 1992). When the behavior at

hand is to be performed relatively free and unconstrained, Vallerand and Bissonnette (1992) found intrinsic motivation, integrated regulation and identified regulation to be the main influencers. Therefore, it can be assumed that the higher the internalization and self-determination the more likely to influence exercise consumer behavior given that identified regulation proved to be significant for all exercise consumer behavior variables.

In regards to CB1 and CB2, the more self-determined forms of motivation, introjected regulation and identified regulation, proved to be significant predictors of likeliness to “purchase exercise equipment” and the likeliness to “purchase exercise clothing.” This behavior may be attributed to the idea that those exhibiting introjected regulation exercise to feel good about themselves and therefore may need additional extrinsic motivators to make them feel more adequate while exercising, avoiding guilt. While those exhibiting identified regulation may need additional clothing or equipment to accomplish their exercise goals most effectively, further internalizing the overall behavior.

As expected, amotivation proved to negatively predict, the likelihood to “participate in advanced level/high intensity recreational sports programs or activities” while identified regulation positively influenced the behavior. This finding follows the literature for individuals that exhibit amotivation, these individuals simply go through the motions and are generally either not exercising regularly or do not know why they exercise anymore (Ryan & Deci, 2000; Vallerand & Losier, 1999). They may not feel competent enough to engage in the behavior. Those exhibiting identified regulation may want to participate in the activity in order to improve other aspects of their training program (Vallerand & Losier, 1999).

Identified regulation positively influenced CB4, “participate in beginner level/low intensity recreational sports programs or activities.” These individuals exercise for more intrinsic reasons

and value the importance of exercise. They are more apt to try new forms of exercise, bringing diversity to their exercise routine.

When examining the results pertaining to CB5, “join an intramural sports competitive league,” external regulation positively influenced this behavior while introjected regulation negatively influenced this behavior. Lastly, identified regulation positively influenced the behavior. The negative influence may be attributed to the idea that competition can negatively affect intrinsic motivation (Vallerand & Losier, 1999). While competition is an integral component of sport, where athletes are given the opportunity to measure their skills against others in a particular activity, the focus often becomes the beating of the opponent rather than skill mastery itself (Vallerand & Losier, 1999). This change in focus away from the activity (task involvement) towards a more self-pride focus (self-ego), is said to undermine intrinsic motivation (Vallerand & Losier, 1999). This could explain the drop in motivation at the introjected level, later increasing as the individual begins to truly identify with the activity and the competition itself, when the social context of competition might begin to influence their perceptions of autonomy and competence (Vallerand & Losier, 1999). Vallerand and Losier (1999) have found that those who are “winners” in sport or have subjectively felt that they have done well in competition display higher levels of intrinsic motivation than those that are “losers” or who feel as if they have not done well. Similar results followed for CB6, “join an intramural sports recreational league.” External regulation positively influenced the behavior while introjected regulation negatively influenced the behavior. Again, identified regulation positively influenced the likeliness of joining an intramural sports recreational league. Similar conclusions can be drawn from these results as those explaining CB5. Sport may be assimilated with

competition to the average person whether recreational or competitive is attached to the description, resulting in similar findings.

Introjected regulation and identified regulation both positively influenced CB7, “obtain a fitness assessment from the Personal Training & Assessment Center.” These individuals reported exercising “to improve their overall fitness level” and may state exercising as being “absolutely necessary if they want to be in shape.” A fitness assessment will provide these individuals with results and evidence of the overall effectiveness of their exercise routine. Those just beginning to exercise might be intimidated to hear the results of a fitness test or may not value the importance.

Identified regulation proved to be the only significant predictor of CB8, “hire a personal trainer.” This type of motivation is marked by value, seeking autonomy and competence for the given activity (Ryan & Deci, 2000). Individuals exhibiting identified regulation value the social, physical and cognitive aspects of exercise where the activity has become of personal importance (Ryan & Deci, 2000). These individuals would want to learn how to improve their overall effectiveness in regards to exercising in an effort to improve their fitness level while seeking a social outlet to facilitate the process. A personal trainer is valued as the means to achieve this goal. Individuals being less self-determined may need to be educated on the benefits of hiring a personal trainer to understand the importance and benefits.

Lastly, identified regulation was found to positively influence CB9, “visit the RecSports Web site.” As explained previously, this type of motivation is defined by value and personal importance (Ryan & Deci, 2000). These individuals are active in seeking the information and opportunity to continue to improve themselves both physically and mentally on their own. Those exhibiting less self-determined motivation will be less inclined to do research or exert

effort on their own. They need more external reinforcement and factors to coerce them into becoming involved or understanding the value of exercise rather than seeking out the information on their own behalf.

Overall, the more self-determined forms of motivation positively influenced exercise consumer behavior. This finding was consistent with a previous study conducted by Wilson et al. (2003), where identified and intrinsic regulations positively predicted both physical fitness and exercise behavior. Identified regulation was associated with positive motivational consequences leading to more frequent exercise behavior. This type of influence would be expected to increase the likelihood of the previous mentioned exercise consumer behaviors as seen in the results of this study.

Hypothesis Three

The results pertaining to hypothesis 3, presented significant differences between stages of change and exercise consumer behavior as expected. It is important to note that these results involve all stages of change. While this hypothesis was exploratory in nature, a connection can be drawn from previous literature establishing a link between motivation and stages of change (Hagger & Chatzisarantis, 2005; Mullan & Markland, 1997; Thøgersen-Ntoumani & Ntoumanis, 2006), and motivation and behavioral intentions (James & Ross, 2004; Kilpatrick et al., 2005; Satia and Galanko, 2007; Shang et al., 2005; Teo et al., 1999). These results further examine the relationship between stages of change and behavioral intentions, drawing conclusions from the previous results on how individuals within earlier stages of change may have different behavioral intentions than those in later stages of change.

The first three consumer behavior items “purchase exercise equipment,” “purchase exercise clothing” and “participate in advanced level/high intensity recreational sports programs or activities” displayed similar findings. The first two stages, precontemplation and

contemplation, significantly differed from the last four stages of change (preparation, action, maintenance and termination) in the likelihood to engage in the first three exercise consumer behaviors. Individuals residing in the beginning stages of change are expected to exhibit similar behavioral intentions in contrast to those residing in the later stages of change. This can be attributed to the fact that motivation is a reference to the origins of the desire to engage in a particular behavior (Satia & Galanko, 2007) and the type of motivation differs across stages of change along the self-determination continuum (Mullan & Markland, 1990; Thøgersen-Ntoumani & Ntoumanis, 2006). Therefore, those in the earlier stages of change would exhibit similar types of motivation and be more likely to engage in similar consumer behaviors based on the type of motivation exhibited. Those residing in the preparation stage of change are just beginning to exercise but do not exercise on a regular basis (Prochaska & Norcross, 2001). Those within the preparation stage are closely related to the first two stages of change, precontemplation and contemplation, and would be expected to exhibit similar motivation levels, explaining the significant difference in the likeliness to engage in exercise consumer behaviors between those residing in the first two stages of change from those in the last four stages of change.

There were no significant differences in mean scores for “participate in beginner level/low intensity recreational sports programs or activities.” This finding could be due to the fact that those within the earlier stages of change are likely to participate in beginner level classes to learn how to begin to exercise while those in the later stages of change may also participate in the beginner level classes to learn how to implement new exercise elements into their overall fitness program. Those residing in the later stages of change may be searching for something different and new to decrease the onset of amotivated tendencies described in the previous results. All

stages are just as likely to engage in the behavior but for differing reasons, displaying no significant differences.

While the mean scores did not increase at a steady rate for “join an intramural sports competitive league,” there were still significant differences present between the first stage of change, precontemplation, and the last stage of change, termination. There were also significant differences in the mean scores between the second stage of change, contemplation, and the last four stages. Lastly, there were significant differences between all stages of change and termination. In regards to the stages of change that differed from one another, the later stage of change always received the higher mean score, further demonstrating the idea that as stage of change increases, the likeliness to engage in a particular behavior increases. This would be expected due to the type of motivation that is evident within the later stages of change. The motivation is more internalized, resulting in the behavior being performed more freely, increasing the likeliness for an individual to engage in a particular behavior (Satia & Galanko, 2007; Vallerand & Bissonnette, 1992).

The likeliness to “join an intramural recreational league” showed a steady increase as stage of change increased with the exception of preparation receiving the second highest mean score, however, all significant differences followed the trend explained previously where the earlier stages of change differed from the later stages of change but not from each other. Of the stages that received significant differences between mean scores, the later stage of change always resulted in a higher mean score for likeliness to engage in the behavior “join an intramural recreational league,” further demonstrating the idea that the individuals residing in the later stages of change will engage in a behavior repeatedly or again. This finding follows the literature regarding motivation, where the later stages of change exhibit more internalized

motivation and self-determined behavior influencing persistence in behavior (Mullan & Markland, 1997; Vallerand & Bissonnette, 1992).

There were significant differences between mean scores involving the likeliness to “obtain a fitness assessment” between the first four stages of change and termination. The mean scores steadily increased across all stages of change. The motivation that significantly predicted this behavior, introjected regulation and identified regulation, were also significantly different with a higher mean score in the later stages of change compared to the earlier stages of change. This represents the continuum of self-determined behavior, where those in the later stages of change exhibit more self-determined forms of regulation, valuing exercise on a personal level, beginning to internalize the behavior (Vallerand & Bissonnette, 1997).

There were significant differences in the mean scores present for the likeliness to “hire a personal trainer” between the first three stages of change and termination, along with the first three stages of change and maintenance. Both termination and maintenance received hire mean scores when compared to the mean scores of the first three stages of change. As seen previously, the likeliness to engage in a particular behavior increased as the stage of change increased. Identified regulation significantly predicted the likeliness to “hire a personal trainer,” and received the highest mean scores within the maintenance and termination stages of change, following the similar trend discussed earlier regarding motivation, where the later stages of change exhibit more internalized motivation and self-determined behavior influencing persistence in behavior (Mullan & Markland, 1997; Vallerand & Bissonnette, 1992).

Similar to the preceding results for “hire a personal trainer,” the likeliness to “visit the RecSports Web site” increased as stage of change increased with the exception of maintenance receiving a higher mean score than termination. This unexpected shift in mean scores did not

present a significant difference between maintenance and termination, however, those individuals residing in the maintenance stage of change may be more active in attempting to find information pertaining to exercise and fitness in an effort to progress to the last stage of change, where exercise is a part of the individual's lifestyle. Those in the termination stage of change may have already established a routine of their own and have internalized the behavior, no longer needing as much external reinforcements. This can be explained partially through the type of motivation that significantly predicted the likelihood to "visit the RecSports Web site," identified regulation. Individuals residing in the termination and maintenance stages of change exhibited significantly higher mean scores for identified regulation than those in the earlier stages of change, further explaining the likelihood to "visit the RecSports Web site." As explained previously, the later stages of change exhibit more internalized motivation and self-determined behavior influencing persistence in behavior, explaining an increased likelihood to "visit the RecSports Web site" for those residing in the later stages of change (Mullan & Markland, 1997; Vallerand & Bissonnette, 1992). Overall, the likeliness to engage in exercise consumer behavior steadily increased as stage of change increased.

Managerial Implications

Understanding the motivation that drives exercise consumer behavior will provide practitioners within the sport marketing field with information to develop targeted promotional campaigns to drive participation and interest, specific to consumers' current exercise behavior (James & Ross, 2004). Stage specific campaigns that target specific motivational frameworks would help progress individuals to move through the stages of change (Hagger & Chatzisarantis, 2005). This progression can be attributed to the idea that intentions and behavior are moderated by motivation (Chatzisarantis & Biddle, 1998).

Kaltcheva and Weitz (2006) determined that by identifying and examining motivational orientation of individuals, strategies can be developed to influence consumer behavior. As people progress through the stages of change, they begin to engage in more exercise and become increasingly more self-determined in the regulation of their exercise behavior (Mullan & Markland, 1990). Individuals residing in the maintenance and termination stages of change exhibit higher levels of identified and integrated motivation compared to those in the preparation and action stages of change as seen in the results in this study and previous studies (Mullan & Markland, 1990; Ingeldew et al., 2004; Thogersen-Ntoumani & Ntoumanis, 2006). These individuals reported exercising an average of “3-4 days per week” (53%, $N = 122$) and “5-6 days per week” (35%, $N = 83$). Managers should focus on implementing marketing campaigns and interventions that progress individuals through the stages of change, producing more engaged and loyal customers.

Marketing Implications

Marketing campaigns should be tailored to the specific stage of change and motivation of the targeted consumer demographic. This section discusses the differences among stages of change in regards to motivation and presents marketing and outreach strategies that may be utilized while taking into account the stage of change and motivation differences.

Within the initial stages of change, individuals are focused on making the decision to begin exercising and taking the initial steps to become more physically fit (Mullan & Markland, 1990). A majority of the individuals in this study residing within the first three stages of change reported “time” as the number one reason preventing them from exercising or exercising on a regular basis, with “lack of motivation and energy” being the second highest reported reason. A marketing campaign should focus on these characteristics, educating those in the earlier stages of change regarding the importance of exercise and ways to begin; stressing the fact that “time”

should not be an excuse. Beginner level classes, teaching the basics of exercise should be highlighted for this target market. This may include workshops, introductory/beginner classes and educational seminars. Fitness assessments should be promoted in a way to encourage individuals to provide a starting point and frame of reference for setting attainable and reasonable exercise goals. A personal trainer should be marketed as a way to begin a fitness program, provide the knowledge necessary to be effective, along with the motivation to continue and accountability. Additional marketing mediums other than a Web site may be needed to reach this target market, as they are not actively seeking information on their own.

Marketing should focus on highlighting more advanced classes, tailored to improving the effectiveness and the overall fitness level of those in the later stages of change who are currently exercising and have been doing so for an extended period of time. This may include high intensity classes such as Bootcamp or special events (e.g. Bench Press Competition, Adventure Race and Strongman Competition) where individuals can train and challenge themselves to compete against others. Fitness assessments should be promoted as a way of providing a reference point for goal setting and assessing the overall effectiveness of an individual's fitness program. A personal trainer should be promoted as means of providing a more challenging workout regime, along with sport specific program design and correcting muscle imbalances or form resulting from previous exercise routines. Information about programs and services should be relayed through the Web site for current exercisers.

Theoretical Implications

The TTM was utilized in this study to identify exercise behavior. In this context, the TTM provided the theoretical background to profile the subjects of the study. The subjects were asked to classify their current exercise behavior based on the Stages of Exercise Change Questionnaire (SECQ). In addition, the researcher included a sixth item within the SECQ to address those that

reside within the last stage of change, termination. The SDT was utilized within this study in conjunction with the TTM to provide the motivational construct. The SDT provided insight into the subjects' motivational regulation across the stages of change. Lastly, this relationship was examined to determine the link between motivation and exercise consumer behavioral intentions within a university recreational sports setting. The results provided support for the use of the TTM and SDT as an adequate indicator of exercise consumer behavior within the college setting. Support was found at the multivariate level ($p < .05$) for all three hypotheses, concluding that motivation differs across stages of change, increasing as stage of change increases, more self-determined motivation positively predicts exercise consumer behavior and exercise consumer behavior differs across stages of change, increasing the likeliness to engage in the mentioned consumer behaviors as stage of change increases.

Limitations of the Findings and Future Research

This study was delimited to the college student population and exercise consumer behavior related to recreational sports programs and services. Consequently, the results cannot be generalized to describe consumer behavior of an older population or corporate fitness centers. In addition, there was a disproportionate representation of each stage of change, however the focus of the study was on comparing individuals within the different stages of change and not providing an accurate estimate of the population within each stage. This disproportionate representation could be attributed to the topic and purpose of the study, attracting those who are currently exercising to be more inclined to complete the questionnaire. The low response rate (10%) may be attributed to the time in which the study was conducted (the end of the academic semester) when final projects were due and studying for finals had begun. Additional work is needed to refine and improve the items used to measure exercise consumer behavior. Future research is warranted in determining the impact of marketing campaigns on consumers' exercise

behavioral intentions. Work should continue in this area to provide sport marketers with a more thorough understanding of the multiple factors that influence exercise consumer behavior. In addition, further analysis of the results is warranted to assist in the development of a model linking the different stages of change and the motivations specific to each stage of change in connection with the anticipated exercise consumer behavior.

Conclusion

In conclusion, there is a significant difference in the motivational regulation across stages of change as shown in this study and in others (Hagger & Chatzisarantis, 2005; Mullan & Markland, 1997; Thogersen-Ntoumani & Ntoumanis, 2006), increasing in self-determination as stage of change increases. In addition, more self-determined motivation was found to positively influence exercise consumer behavior within the context of this study, as expected through prior research seen both in and outside of the health field (James & Ross, 2004; Kilpatrick et al., 2005; Satia & Galanko, 2007; Shang et al., 2005; Teo et al., 1999). Identified regulation proved to significantly predict all exercise consumer behavior variables within the context of this study. Lastly, exercise consumer behavior was found to significantly differ across stages of change, increasing the likelihood to engage in a specified exercise consumer behavior for those residing in the later stages of change as prevalent in previous research (Hagger & Chatzisarantis, 2005; Mullan & Markland, 1997; Thogersen-Ntoumani & Ntoumanis, 2006).

As marketing managers, it is important to understand that the consumers who are more engaged and have internalized their current exercise behavior (maintenance and termination), are more likely to participate, purchase and attend program and service offerings. Managers should focus not only on attracting new customers but trying to progress the existing customers through the stages of change in an effort to shift their motivation along the self-determination continuum towards identified regulation and beyond, retaining loyal customers for the future. These

customers will hopefully begin to internalize the behavior and not only be repeat customers, but begin to increase the amount of exercise in their overall lifestyle preventing the onset of disease and illness for the future.

APPENDIX A
EXERCISE MOTIVATION SCALE BY ITEM

Exercise Motivation Scale by Item (Adapted from Mallet et al., 2007)

Item

Amotivation

- 5. I don't know anymore; I have the impression of being incapable of continuing to exercise at a successful rate
- 12. I don't know if I want to continue to invest my time and effort to exercise as much anymore
- 17. It is not clear to me anymore; I don't really think I can achieve my fitness goals
- 22. I don't seem to be enjoying exercising as much as I previously did

External Regulation

- 4. Because it allows me to be well regarded by people that I know
- 11. For the prestige of being in good physical shape
- 19. For the material and/or social benefits of being in good physical shape
- 24. To be perceived by others as being in good physical shape

Introjected Regulation

- 7. Because it is absolutely necessary to exercise if one wants to be in shape
- 10. Because I must exercise to feel good about myself
- 16. Because I would feel bad if I was not taking time to exercise
- 23. Because I must exercise regularly

Identified Regulation

- 3. Because it is a good way to learn a lot of things which could be useful to me in other areas of my life
- 8. Because it is one of the best ways I have chosen to develop other aspects of my life

15. Because it is one of the best ways to maintain good relationships with my friends or meet new people

20. Because exercising hard will improve my fitness level

Integrated Regulation

2. Because it's part of the way in which I've chosen to live my life

9. Because it is an extension of me

13. Because participating in exercise is consistent with my deepest principles

21. Because participation in exercise is an integral part of my life

Intrinsic Motivation

1. For the excitement I feel when I am really involved in exercise

6. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques

14. For the satisfaction I experience while I am achieving or exceeding my exercise goals

18. For the pleasure of discovering new performance strategies

APPENDIX B
QUESTIONNAIRE

Exercise and Consumer Behavior Questionnaire

Please take a few moments to complete this questionnaire. Your participation is voluntary and anonymous. Please answer the questions accordingly and with your best judgment. Thank you for your time and input.

1. Which of the following statements most accurately reflects your current exercise behavior?

Exercise is defined as any planned physical activity (e.g., brisk walking, aerobics, group fitness classes, intramural sports games, jogging, bicycling and swimming) performed to increase physical fitness. Such activity should be performed 3-5 times per week for 20-60 minutes per session. Exercise does not need to be painful to be effective, but should be done at a level that increases their heart rate and causes you to break a sweat. (Check One)

I currently do not exercise, and do not intend to start in the next six months _____

I currently do not exercise, but I have been thinking about starting to exercise in the next six months _____

IF YOU CHECKED ONE OF THE ABOVE CATEGORIES, MOVE TO QUESTION 5 _____

I currently exercise, but do not exercise on a regular basis _____

IF YOU CHECKED THE ABOVE CATEGORY, MOVE TO QUESTION 2 _____

I currently exercise on a regular basis, but have only begun doing so within the last six months _____

I currently exercise on a regular basis, and have been doing so for six months to a year _____

I currently exercise on a regular basis, and have been doing so for more than a year, exercise is a part of my lifestyle. _____

IF YOU CHECKED ONE OF THE ABOVE TWO CATEGORIES, MOVE TO QUESTION 3 _____

2. What prevents you from exercising or exercising on a regular basis? (Rank top three in order)

Time _____ Money _____ Lack of Skill _____ Illness _____ Injuries _____

Lack of Social Support _____ Not Important _____ Lack of Motivation & Energy _____

Lack of Access to Facilities _____ Other (Please Explain) _____

3. On average, how many days a week do you exercise? (Check one)

1-2 days _____ 3-4 days _____ 5-6 days _____ 7 days _____

4. Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently engaging in exercise. (Circle the corresponding number)

Why do you engage in exercise? 1=Does not correspond at all 7=Corresponds exactly

For the excitement I feel when I am really involved in exercise	1	2	3	4	5	6	7
Because it's part of the way in which I've chosen to live my life	1	2	3	4	5	6	7
Because it is a good way to learn a lot of things which could be useful to me in other areas of my life	1	2	3	4	5	6	7
Because it allows me to be well regarded by people that I know	1	2	3	4	5	6	7
I don't know anymore, I have the impression of being incapable of continuing to exercise at a successful rate	1	2	3	4	5	6	7
Because I feel a lot of personal satisfaction while mastering certain difficult training techniques	1	2	3	4	5	6	7
Because it is absolutely necessary to exercise if one wants to be in shape	1	2	3	4	5	6	7
Because it is one of the best ways I have chosen to develop other aspects of my life	1	2	3	4	5	6	7
Because it is an extension of me	1	2	3	4	5	6	7
Because I must exercise to feel good about myself	1	2	3	4	5	6	7
For the prestige of being in good physical shape	1	2	3	4	5	6	7
I don't know if I want to continue to invest my time and effort to exercise as much anymore	1	2	3	4	5	6	7
1=Does not correspond at all 7=Corresponds exactly							
Because participating in exercise is consistent with my deepest principles	1	2	3	4	5	6	7
For the satisfaction I experience while I am achieving or exceeding my exercise goals	1	2	3	4	5	6	7
Because it is one of the best ways to maintain good relationships with my friends or meet new people	1	2	3	4	5	6	7
Because I would feel bad if I was not taking time to exercise	1	2	3	4	5	6	7
It is not clear to me anymore, I don't really think I can achieve my fitness goals	1	2	3	4	5	6	7
For the pleasure of discovering new performance strategies	1	2	3	4	5	6	7
For the material and/or social benefits of being in good physical shape	1	2	3	4	5	6	7
Because exercising hard will improve my fitness level	1	2	3	4	5	6	7
Because participation in exercise is an integral part of my life	1	2	3	4	5	6	7
I don't seem to be enjoying exercising as much as I previously did	1	2	3	4	5	6	7
Because I must exercise regularly	1	2	3	4	5	6	7
To be perceived by others as being in good physical shape	1	2	3	4	5	6	7

PROCEED TO QUESTION 6

5. What prevents you from exercising or exercising on a regular basis? (Rank top three in order)

Time _____ Money _____ Lack of Skill _____ Illness _____ Injuries _____
 Lack of Social Support _____ Not Important _____ Lack of Motivation & Energy _____
 Lack of Access to Facilities _____ Other (Please Explain) _____

6. Using the scale below, please indicate how likely you are to engage in the following actions.
 (Circle the corresponding number)

How likely are you to engage in the following within the next 6 months? 1=Not likely at all 7=Extremely likely

Purchase exercise equipment.	1	2	3	4	5	6	7
Purchase exercise clothing.	1	2	3	4	5	6	7
Participate in an advanced level/high intensity recreational sports program or activity.	1	2	3	4	5	6	7
Participate in a beginner level/low intensity recreational sports program or activity.	1	2	3	4	5	6	7
Join an Intramural Sports competitive league.	1	2	3	4	5	6	7
Join an Intramural Sports recreational league.	1	2	3	4	5	6	7
Obtain a fitness assessment from the Personal Training & Assessment Center.	1	2	3	4	5	6	7
Hire a personal trainer to assist me in reaching my personal fitness goals.	1	2	3	4	5	6	7
Visit the RecSports Web site.	1	2	3	4	5	6	7

Gender: M ___ F ___

Year in school: 1st ___ 2nd ___ 3rd ___ 4th ___ 5th or more ___ Grad Student ___

Residence: On Campus ___ Off Campus ___

College: Agricultural and Life Sciences, Warrington Business Administration, Design, Construction and Planning, Dentistry, Education, Engineering, Fine Arts, Health and Human Performance, Journalism and Communications, Levin Law, Liberal Arts and Sciences, Medicine, Nursing, Pharmacy, Public Health and Health Professions, Veterinary Medicine (Drop Down Menu)

Major: (Fill In)

Race/Ethnic Background: American Indian and Alaska Native ___ Asian ___

Black or African American ___ Native Hawaiian and Other Pacific Islander ___

White/Caucasian ___

Hispanic ___ Multiracial ___ Other _____

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BIOGRAPHICAL SKETCH

Jessica Gates completed her Bachelor of Science in recreation administration with a concentration in sport marketing and a minor in law and society in 2007. She then accepted the marketing graduate assistantship with the Department of Recreational Sports at the University of Florida where she completed her Master of Science in 2009.