Exercise and sports participation: Understanding student motivations

by

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Abstract

The purpose of the present study was to examine motivations for participating in physical activity in an emerging adulthood sample, using Eccles et al.'s (1983) expectancy-value model. Of particular interest was how this model varied for individuals engaging in sports versus exercise. Three hundred and twenty eight undergraduate students completed questionnaires assessing expectancy beliefs, subjective task values, participation indicators as well as health outcomes. Model effectiveness varied as a function of both the activity itself as well as the specific participation indicator. For both sports and exercise activities, however, emerging adults appeared to be more driven by internal rewards (e.g., demonstrating competence, having fun) than by external incentives (e.g., attention and career goals). Findings of the present study partially support the use of the expectancy-value model in this research context, although future research might consider some revision to the measure, to better reflect motivations specific to physical activity engagement.

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Exercise and sports participation: Understanding student motivations

Why a person would choose to participate, or not participate, in a particular activity is at the heart of motivation research. It is in the answer to this and many other ‘why’ questions that a greater understanding of what motivates behaviour can occur. When looking at schools, questions such as “Why do some students study harder than others?” or “Why do some students not seem interested at all?” are asked in an effort to answer the simple question, what motivates students? Similar questions can be asked across a wide range of life areas, including sports and other physical activities. The present study focused on a comparison between the motivations for sports participation and the motivations for physical activity in general.

There are many reasons why individuals choose to engage in physical activity, including sports and exercise, such having fun, belonging to a group, getting fit, improving skills, being successful, gaining recognition, and finding excitement. The aim of this study was to examine emerging adults’ motivations for engaging in sports and exercise, using Eccles et al.’s (1983) expectancy-value model as a framework. Eccles’ models have been used predominantly to study children and adolescent motivations in a variety of areas, including sports, as well as adult motivations, in non-sport activities. Therefore, the goal of this study was to gain a better understanding of why emerging adults are choosing to participate in sports or exercise.

Why is the issue of participation in regular physical activity important to study? At a very basic level, there is a strong body of research linking physical activity to health and well-being, both physical and mental; it reduces anxiety, depression and negative mood, and improves self-esteem and cognitive functioning (Callaghan, 2004).

Benefits of Physical Activity

First and foremost, being physically active is important for one's physical health. Numerous studies have demonstrated a link between physical activity and physical health. For example, Sabia et al. (2012) looked at the effects of physical activity on mortality. Participants were asked about time spent on a variety of activities, including walking, sports, gardening, housework, and do-it yourself (i.e., building, decorating), as well as the intensity level when participating in each activity. Results indicated that regular physical activity was associated with a lower risk of mortality. Individuals who reported at least 1 hour of moderate physical activity a week, had a 33% lower risk of death than those who reported less than 1 hour. When comparing each individual activity, sport was found to be the strongest protector against mortality. The authors suggest that it is important to consider both type of activity and intensity level when examining the impact of physical activity on health related issues, such as mortality.

Reiner, Niermann, Jekauc, and Woll (2013) investigated the long-term health benefits of regular physical activity, with a systematic review of 18 longitudinal studies that focus on the relations between participation in physical activity and a variety of health related issues. Results of this review led to several important findings. First, studies investigating the effect of physical activity on weight gain and obesity found a negative relationship between the two over time. Studies investigating the effect of physical activity on coronary heart disease once again found that in general, a negative relationship existed between the two. However, upon further examination, it would appear that the relationship shows a more u-shaped pattern. While certain levels of physical activity (i.e., moderate or vigorous) are more beneficial over others,

overexertion will have negative consequences. Studies also showed a negative relationship between physical activity and type 2 diabetes. Finally, it was found that healthy individuals who engage in regular physical activity are at a lower risk for developing Alzheimer's disease and dementia.

The importance of physical activity goes beyond the physical health benefits. Jurakić, Pedišić, and Greblo (2010) investigated the link between physical activity and health-related quality of life (HRQoL). Participants in this study were aged 15 years and older. Physical activity was tested using the International physical activity questionnaire (IPAQ), which covers four domains of physical activity (job-related, transportation, domestic, and leisure-time) and is structured so as to provide domain-specific scores for walking, moderate-intensity, and vigorous-intensity activity. Health-related quality of life included both a physical health score and a mental health score. In general, physical activity was a significant predictor of mental health scores in females, and physical health scores in males. Looking specifically at leisure-time physical activities, this domain only predicted mental health scores in female participants. There was no significant relationship between leisure-time physical activities and mental or physical health in male participants. One possible explanation for this is that IPAQ only asked participants to measure activities during the previous seven days as oppose to obtaining an average over several weeks or months. As such, a proper assessment of leisure time physical activity may not have been obtained and its relationship to health-related quality of life was not fully explored.

Yiğiter (2014) examined the effect that regular participation in physical activity has on self-esteem and hopelessness amongst female university students. Participants

were randomly assigned to either an experimental group or a control group. In the experimental group, participants took part in regular organized sessions of moderate physical activity for 60 minutes a day, 3 days a week for 12 weeks. Sessions include a 15 minute warm-up, a 30 minute activity (e.g., jogging, swimming, volleyball), and a 15 minute cool down. The control group was told to continue with their normal routine, with no specific instructions about their physical activity. Pre- and post-test indicated that self-esteem significantly increased and hopelessness significantly decreased in the experimental group following the completion of the physical activity sessions, as compared to the control group.

Clearly, physical activity plays a large role in the prevention of disease and other health-related issues, and may even have differential benefits, depending on gender. While many forms of physical activity are beneficial, the focus of this study was to compare general physical activity (i.e., exercise) to more specific sports participation. Playing sports is a form of physical activity and as such, can be associated with the health-related benefits stated above. For example, Oja et al. (2011) performed a systematic review of the studies that investigated the health benefits of cycling. The main finding of this review indicated that regular cycling was associated with higher levels of cardiovascular fitness, lower levels of obesity, and lower risk of death and certain cancers. However, there are several additional benefits that are unique to sports participation.

In looking at the relationship between sports participation and obesity, since the late 1970's, the rates of overweight and obese children and adolescents has been on a steady rise (Shields, 2006). Being overweight in childhood has been linked to various

health-related problems such as type 2 diabetes, poor emotional health, and diminished well-being (Reilly et al., 2003; Singh, Mulder, Twisk, van Mechelen, & Chinapaw, 2008). Furthermore, overweight and obese children and adolescents tend to become overweight and obese adults, which leads to another list of health-related issues.

Looking specifically at the issue of obesity, Alfano, Klesges, Murray, and McClanahan (2002) investigated the role that youth sports participation has on adult obesity among women. 486 women completed a survey assessing past sports participation as well as current physical activity level. Obesity levels were measured using the body mass index (BMI). Past sports participation was related to a decrease in adult BMI, and to current physical activity level. The authors suggest that early sports participation may lay the foundation for a healthier adult lifestyle. Regular involvement in sports and exercise results in an increased quality of life and those who participate at young ages will be more likely to continue the trend into later adulthood.

While physical activity, and specifically sports participation, is crucial to maintaining a high quality of physical health, it is the unique qualities of playing sports that have been shown to be beneficial for one's emotional and mental health. Previous studies have investigated the role that sports participation plays in promoting psychological well-being. Eime, Young, Harvey, Charity, and Payne (2013) performed a systematic review on the psychological benefits of sports participation. The review identified a multitude of psychological and psychosocial benefits that can be derived from sports participation, including improved well-being, reduced stress, reduced distress, vitality, hedonic enjoyment, improved subjective well-being, increased sense of

belonging, improved life satisfaction, lower depression, improved mental health, role emotion, and improved sense of community.

Miller and Hoffman (2009) investigated the relationship between sports participation and mental well-being among college students. Participation in sports, as well as identifying oneself as an athlete, were both associated with lower depression scores. Athletic identity was further associated with lower odds of a past-year suicide attempt. Décamps, Boujut, and Brisset (2012) aimed to determine whether the intensity of sports participation had an effect on stress, self-efficacy, and coping strategies among college students. In comparison to those who rarely participated in sports, those who indicated intense sports participation (i.e., 8 or more hours per week) had lower levels of general stress and academic stress as well as higher levels of self-efficacy and adaptive coping strategies.

Slutzsky and Simpkins (2009) observed the role that sports participation plays in the development of sports self-concept and self-esteem in children. Data was collected from children in kindergarten, grade 1 and grade 3 over a 4-year period. Sports participation was divided into team-based and individual sports. Children who spent more time in team-based sports reported higher levels of sport self-concept and self-esteem. This suggests that, at least in young children, the relationship between sports participation and self-esteem may depend on whether or not they are playing a team-based sport. While investigating college-aged individuals, Chen, Chen, Lin, and Chen (2012) found a significant positive relationship between sports participation and self-esteem, mediated through perceived peer acceptance, that is, sports participation led to greater peer acceptance, which in turn predicted more positive self-esteem. Clearly, regular sports

participation can have a significant effect on the mental health of an individual across the life span, and an important component of sports participation is the opportunity to interact with one's peers.

Sports participation has also been linked to a number of social benefits. Participating in sports can lead to the development of pro-social skills and behaviours (e.g., cooperation, personal responsibility) in youth and may even combat antisocial and criminal behaviour (Bailey et al., 2009). Another such benefit of sports participation is that it allows individuals to develop a number of social networks, which in turn have many benefits of their own such as those mentioned in the section on emotional and mental health. Often, lifelong friendships are first developed on the playing field and at the very least, sports involvement offers the opportunity for friends to get together and participate in a fun activity. While not every sport can be described as a team sport, all sports allow individuals to meet and be with others who have like-minded interests.

Hoye, Nicholson, and Brown (2015) investigated the relationship between involvement in sports and non-sport community organisations and social connectedness (i.e., level of connections in a social network). They found that involvement in one or more sports organisations was a significant predictor of social connectedness, while involvement in non-sport organisations was not significantly associated with social connectedness. Similarly, Armstrong and Oomen-Early compared collegiate athletes to non-athletes with respect to their level of social connectedness and found that athletes had significantly higher levels of social-connectedness than non-athletes.

Spaaij (2012) examined the ways participation in sports contributes to bonding between Somalis and Australians. The focus of the study was on Somali individuals with

refugee backgrounds and their participation in the sport of football (soccer) in the country of Australia. Results of the study indicated that participants were using sports as a context for facilitating the development of social bonds, which in turn were used to help build community networks outside of sports that may have been previously disrupted. Walseth (2008) found similar results while examining second-generation female immigrants in Norway. Through the context of sports, these individuals were able to bond amongst themselves and create bridges with those of other cultures.

While many adolescents and their parents express concern over the effect continued participation in sports may have on their academic career, many studies have found that sports participation leads to positive academic outcomes. Sports participation has a more positive effect on academic self-concept, senior and postsecondary educational aspirations, college attendance, and social self-concept than participation in any other extracurricular activity (Marsh, 1992; Snyder & Spreitzer, 1990; Videon, 2002).

Identifying oneself as an athlete holds varying value depending on the community context. At the school level, studies have shown that sports participants were more likely to be seen as good students at schools with low academic expectations and in poor communities, whereas, participants in non-sport activities were more likely to be seen as good students at schools with high academic expectations and in wealthier communities (Guest & Schneider, 2003).

Even with all the benefits listed above and the fact that watching professional sporting events remains very popular, the rates of sports participation have been on the decline. According to the Nielsen Twitter TV Ratings, the topic of sports dominated

Twitter conversations in 2013 with 492 million tweets about sports events and 50% of tweets about TV were related to sports events (Nielsen SocialGuide, 2014). Conversely, the 2010 Statistics Canada General Social Survey indicated that the sports participation rate among Canadians aged 15 years and older has decreased from a high of 45% in 1992 to just 26% in 2010 (Statistics Canada, 2011). While Canadian youth, aged 15 to 19, had the highest overall participation rates, they also saw a major decline from 77% in 1992 to 54% in 2010. Not only do large declines in participation exist over time, they also exist across age groups within the same year. The largest decline exists between adolescence and emerging adulthood, such that those individuals aged 20 to 24, only had a participation rate of 37%.

With regard to general physical activity participation rates, Bray and Born (2004) investigated the relationship between the transition from high school to university and rates of vigorous physical activity. Vigorous physical activities are ones that cause individuals to sweat and breathe hard. In order to achieve an adequate level of weekly vigorous physical activity, participants must have indicated an average session duration of 20 minutes or more and a frequency of at least 3 days a week. Participants were asked to report their activity levels for the last 2 months of high school and their first 2 months of university. Approximately 66% of participants indicated that they were achieving adequate levels in their last 2 months of high school. That number dropped to 44% for the first two months of university. While this study did not differentiate between general physical activity and sports participation, it shows that this age group struggles with maintaining adequate levels of physical activity.

Using similar methods, Han et al. (2008) reported that moderate, vigorous, and moderate-to-vigorous levels of physical activity declined from high school to university in female students. Kwan, Cairney, Faulkner, and Pullenayegum (2012) used a longitudinal approach to study the declining rates of physical activity for participants between the ages of 12 and 27. Physical activity was measured by asking participants to list the number of physical activities they had participated in the previous 3 months as well as the length of the time spent on each. The results once again highlighted the steep decline in physical activity participation in the transition from late adolescence to early adulthood. The steepest decline occurred amongst males entering post-secondary education. Conversely, females entering post-secondary education had the most modest decline. While overall, females had lower participation rates than males, it was suggested by the authors that the steepest decline for females may occur prior to adolescence.

Given all this information, it was the interest of the present study to focus on the age group of emerging adults, to better understand why there is such a large decline in sports and exercise participation after adolescence. To date, little research has focused on this age group and the factors that affect their decision to be physically active.

Emerging adulthood is a relatively new term focusing on individuals between the ages of 18 and 25, first proposed by Arnett (2000). This classification is reflective of certain societal changes such as an increase in the attendance of post-secondary education and later age of marriage, which have extended that transitional period between adolescence and adulthood (Côté, 2006). Arnett (2000) argues that emerging adulthood is a distinctive stage in the development process marked by a period of relative independence and exploration. No longer do these individuals exhibit the same levels of

dependency seen in childhood and adolescence, nor are they expected to have the level of responsibility seen in adulthood. The major developmental tasks that individual seek to accomplish during this stage are related to achievement, affiliation, and identity (Schulenberg, Bryant, & O'Malley, 2004).

A clear connection can be made between these development tasks and sports participation, as advancement in each can be accomplished through sports participation. Achievement experiences, developing and strengthening peer relations, and forging a sense of self-identity can all be facilitated through participation in sports. This is why it is so important to study sports participation among this developmental age group. It is during this self-focused stage that the foundation is set for the transition into adulthood. The decisions that are made during this stage will have a significant impact for the future of an individual. It is important to understand why that participation rates are declining so quickly for this age group and how motivations at this stage differ from other stages.

A topic that is of concern among this age group, specifically those entering post-secondary education is the notion of the 'freshman 15', or the idea that many university students gain unwanted weight during their first year at school (Jung, Bray, & Ginis, 2008). While some may guess that this extra weight is due to an increase in caloric intake (perhaps from binge-drinking and unhealthy snacks), it is also possible that it is due to the aforementioned decreases in physical activity. Jung et al. (2008) looked at both caloric intake and physical activity levels in relation to weight gain among females in first-year university. Measurements included participant's height and weight, frequency of mild, moderate, and vigorous physical activity during the previous 3 months, and finally a 3 day food log was kept. While dietary behaviour did not predict weight patterns, physical

activity patterns differed significantly between those who gained weight and those who lost weight. Specifically, a decline in physical activity participation was associated with gaining weight. While a healthy diet is important, it would appear that physical activity plays a larger role in living a healthy lifestyle, at least amongst university students.

In studying the longitudinal patterns of physical activity rates, Kwan et al. (2012) also investigated patterns in health risk behaviour, such as smoking and binge-drinking. Although health-risk behaviours initially increase in the transition to emerging adulthood, a curvilinear pattern was seen as part of what the authors described as a ‘maturing out’ hypothesis. Binge drinking and smoking behaviours tend to decrease as adult responsibilities increase. This is in contrast to what was found with regard to physical activity participation, which declined steadily with age. Why is it that physical activity, which has been shown to have numerous health benefits, is still declining?

Motivations for Participation

Clearly, while sports and exercise offer multiple benefits, this does not necessarily lead individuals to seek out sports or other physical activity opportunities. The main focus of this study is to understand the reasons behind why a person would choose to participate in sports versus general physical activities, such as jogging or lifting weights. The reasons for participating are not always consistent with the research on physical and mental health benefits. While it may be true that some individuals might talk about the benefits when giving reasons for their participation, the majority of individuals are not talking about lower mortality rates or an improved sense of community. The motives behind deciding to play a sport tend to come from a more personal, subjective

perspective. Apart from the health and social benefits, what is it that individuals are looking to get out of their sports participation?

A synthesis of early research in the area (Weiss & Ferrer-Caja, 2002) suggests that among adolescent athletes, three consistent reasons for participating in sports have emerged: (1) *physical competence/ adequacy* (e.g., learning, improving, and mastering skills; getting in shape), (2) *social acceptance and approval* (e.g., make friends, feel part of a team, adult approval), and (3) *enjoyment* (e.g., have fun, excitement, and arousal). It is clear that these reasons for sports participation go beyond the benefits described earlier. While there are some similarities (e.g., getting in shape, feel part of team), the reasons individuals give provide a deeper insight into what individuals want to get out of sports. They want to improve themselves in many ways, as well as see those improvements recognised by themselves and by others, and they want to enjoy themselves at the same time. These three categories provide the basic foundation for an individual's participation motivation in sports.

When asked about their motivation for sports participation, respondents to a Statistics Canada survey (Stats Canada, 2011) almost unanimously (97%) cited 'having fun' as a major reason for participation. Health and fitness were reported as the second most important reason among all age groups, followed by a sense of achievement. The primary reason that individuals continue participation is because it is fun. Playing sports provides a safe and effective opportunity to experience excitement, challenge, arousal, and enjoyment (Weiss & Williams, 2004).

Scanlan and Lewthwaite (1986) developed a two-dimensional model for understanding sports enjoyment, distinguishing between achievement/nonachievement

and intrinsic/extrinsic reasons for sports participation. The model (see Figure 1) provides four quadrants which each provide a unique explanation for engagement in sports.

The first quadrant, achievement-intrinsic, indicated that individuals play sports in order to obtain a personal sense of competence and control through mastery and perceived ability. The achievement-extrinsic quadrant suggests that participation is also a result of a need for personal perceptions of competence and control derived from other individuals such as social recognition of sports achievement. The nonachievement-intrinsic quadrant suggests participation is due to an enjoyment of physical activity and the excitement of competition. Finally, the nonachievement-extrinsic quadrant focuses on affiliation with peers and positive interaction with adults as reasons for sports participation.

Figure 1. Model of Sport Enjoyment

To further illustrate this point, Scanlan, Stein, and Ravizza (1989) looked at reasons for sports participation among elite level figure skaters. Four major reasons for sports participation emerged: perceived competence (e.g., mastery, competitive achievement, performance achievement, demonstration of athletic ability), social recognition of competence (e.g., achievement recognition, performance recognition), social and life opportunities (e.g., making friends, travelling, positive adult relationships), and the act of skating (e.g., movement and sensation, self-expression, athleticism, flow). These reasons mirror the three major reasons for sports participation mentioned earlier (i.e., physical competence/ adequacy, social acceptance and approval, and enjoyment). If individuals can agree that sports participation is fun, then why are participation rates decreasing? Fun and enjoyment are necessary components for sports participation, however, if they were the only reasons, it would be easy to create programs to get more individuals involved. Clearly, individuals are looking to get more from sports when they are deciding whether or not to participate.

As mentioned above, sports participation is seen as a great way to attain approval and recognition from parents, coaches, and peers, and along with this approval and recognition comes a degree of social status (Wallhead, Garn, & Vidoni, 2013). In our society, sports figures are seen among the elites of society and many younger athletes seek to reach these levels. These social reasons for playing sports can also affect long-term goals and career plans. Meeting the right individuals through sports can lead to scholarships and job offers. However, an over-reliance on the importance of recognition from others could have a significant impact on one's motivations to participate in sports. For example, Medic, Mack, Wilson, and Starkes (2007) examined the effects of

scholarship status on athletes' motivation for sports. Scholarship athletes reported greater levels of external motivation and decreases in intrinsic motivation, which could decrease the potential positive impact of sports participation.

Researchers have looked at common issues affecting the decision making process of whether or not to engage in regular sports. Coakley and White (1992) interviewed young men and women between the ages of 13 and 23 about their sports experiences, how they interpreted their experiences, how their interpretations affected their decision to participate, and finally, how sports participation fit into the rest of their lives. The findings uncovered five common issues that affected how adolescents decided whether or not to participate in sports. These issues were 1) considering the future, especially concerns about becoming an adult; 2) a desire to demonstrate personal competence and autonomy; 3) social constraints; 4) social support; and 5) past experiences.

Many of these issues can be compared with the reasons given for sports participation (Weiss & Ferrer-Caja, 2002). The reasons that individuals give for participating in sports are heavily influenced by a variety of factors that will affect present and future decisions. It is important to understand these factors in order to gain a better appreciation for the reasons individuals give for their participation motivation. The first issue that was addressed in Coakley and White (1992) is split between demonstrating competence while attaining acceptance and approval. When considering the future, individuals are worried about skill development and achieving goals, but are also looking to gain social status, as this can get them further in life (Wallhead et al., 2013). The second issue is also about demonstrating competence, but it is more concerned with the present than the future. Individuals want to prove that they are capable and often sports

can provide that outlet for them to better themselves at the current moment. The third and fourth issues are related to social acceptance and approval. Adolescents are constantly seeking social recognition and approval from adults (parents, coaches) and peers. For some, participating in sports is met with widespread approval. For others, sports participation is seen as a distraction from more important areas of life. The decision whether or not to participate in sports is not always an individual decision. The social environment often comes into play and whether it is supporting or constraining will certainly have an influence (Patrick et al., 1999; Garn, Ware, & Solomon, 2011). The final issue, past experience, could possibly be linked to all three reasons for sports participation but it is predominantly seen as part of enjoyment. Whether they have fun in previous involvement with the sport will affect their decision to participate in the future.

One motivational factor that is not covered by the three primary reason for sports participation given above is the notion of identity. How much of an individual's motivation to participate is due to how a sport fits into their sense of self, family, and culture? Fostering a sense of identity is one of the major focuses among emerging adults. Athletic identity is described as the degree to which an individual identifies with the athletic role (Brewer, Van Raalte, & Linder, 1993). The more an individual thinks of him/herself as an athlete, the more likely they are to seek out situations to affirm this identity. Houle, Brewer, and Kluck (2010) investigated the levels of athletic identity in current athletes, former athletes, and non-athletes at the collegiate level. Results indicated that athletic identity was significantly higher among current athletes than the other two groups and former athletes had a higher athletic identity than non-athletes. How

individuals perceives themselves and how they want others to see them will play a large role in dictating the activities they take part in.

To summarize, participation in sports leads to an increase in physical competence. Playing sports allows individuals the opportunity to learn new skills, master difficult skills, and get in better shape. Individuals derive social acceptance and approval through making and spending time with friends, recognition and approval from others, and social status. Participating in sports also has the intrinsic value of being enjoyable as it can be highly exciting, arousing, and challenging. The focus of the present study is on emerging adulthood - a transitional period where individual are attempting to show themselves and others who they are and what they are capable of.

Given that the aim of the present study is to compare sports participation and general physical activity, it would be advantageous to look at what research has found in relation to how motivations differ for sports versus exercise. Kilpatrick, Hebert, and Bartholomew (2005) examined how motivations for sports differed from exercise among college students. Physical activity was measured using 4 single-item indicators measuring frequency, duration, intensity, and adherence. Participants responded to each item twice, once related to sports participation and once for exercise participation. Motivations for sports participation included affiliation, challenge, competition, enjoyment, and social recognition. In contrast, motivations for exercise participation included appearance, strength and endurance, stress management, weight management, health pressure, ill-health avoidance, and positive health. From this, it is clear that motivations differ for sports and general physical activity.

Motivations for exercise appear to be more health and appearance related, while motivations for sports appearing to be more social and intrinsic. Similar results were found in Frederick and Ryan (1993), where the aim was to examine differences in motivation for sports and exercise as they related to adult participation levels. Motivation was measured using the Motivation for Physical Activities Measure, which assesses three types of reasons for engaging in physical activities: interest/enjoyment, competence, and body-related. Sports participants rated interest/enjoyment and competence as higher motivations, whereas, exercise participants rated body-related motives higher. Once again, these results show that sports participants are more strongly motivated for social and intrinsic reasons, while those engaged in general physical activity are more interested in health and appearance motives.

The present study explored exercise and sports participation in a more systematic way, using motivational theory to predict and understand why individuals participate. It is important to note that the reasons individuals give for participating are not always equivalent to the factors that affect an individual's decision to participate. While a great deal of overlap does occur, there is a certain disconnect between the reasons individuals give and the motivations that are truly driving an individual to engage. In using motivational theory, it is the goal of the present study to investigate this disconnect and better understand the factors that affect the level of physical activity and sports participation in emerging adults.

In the larger context, answers to why individuals choose to participate in physical activities can be obtained through research done on the topic of motivation and engagement. Motivation and engagement are defined as "an individual's energy and drive

to engage and perform to his or her potential and the behaviors that follow from this energy and drive” (Martin, 2008, p. 143). Motivation and engagement research covers such areas as goal orientations, expectancy-value, self-determination, self-worth motivation, and self-efficacy. It is important to note that there is not a great deal of research on motivation and engagement in sports and that there is no universally accepted theory on sports motivation. Efforts have been made in an attempt to explain the variation in choice and behaviours across a variety of domains.

Current theory and research on the topic of motivation in sports uses an interactionist perspective when attempting to understand and explain behaviour and motivation (Weiss & Ferrer-Caja, 2002). In this approach, researchers are concerned with how individual differences (e.g., competence and enjoyment) and social-environmental factors (e.g., influence from significant others) interact when explaining motivated behaviour. Therefore, an individual’s decision about whether or not to play a sport will depend on their own self-perceptions as well as the beliefs and behaviours of his/her coaches, parents, and teammates.

Eccles et al. (1983) developed the Expectancy-Value Model to better explore the determinants of motivated behaviour in youth, across a variety of domains including math, reading, music, and sports. The model is multidimensional in nature as it looks at social and psychological aspects as well as age-related changes and the interrelationships between the two.

According to Eccles et al. (1983) motivated behaviours, also known as achievement behaviours, are influenced directly by two major variables, expectations of success and subjective task value. Expectation of success refers to how well an individual

believes that they will do in a given activity. Higher expectations of success are related to higher achievement behaviours. Subjective task value concerns the importance of being successful in a given activity as well as how well a task conforms to an individual's goals and his/her sense of identity. The greater the value assigned to a given task, the greater the effort, performance, and persistence of the individual. It is important to note that these variables are influenced by a variety of factors over time, such as, past experiences, parental beliefs and behaviours, gender roles and stereotypes, as well as individual interpretations of experience, including individual goals and self-identity. A summary of Eccles et al.'s (1983) expectancy-value model of achievement behaviours can be seen in Figure 2.

Figure 2. Expectancy-Value Model

The basic notion behind expectations of success can be boiled down to the question "Can I do this task?" (Eccles, Wigfield, & Schiefele, 1998). Although theoretically distinct from the self-concept of ability, researchers have found that 6- to 18-year-old youths do not differentiate between them (Eccles & Wigfield, 1995). Therefore, individuals who report high ability for a given task, will also expect to do well on that task. As such, the concept of ability beliefs can be seen as a combination of a child's self-evaluation of competence in a particular domain and his/her expectations of future success on specific tasks within that domain.

Furthermore, Eccles, Wigfield, Harold, and Blumenfeld (1993) found that young children can differentiate their abilities across various domains (e.g., math, reading, music, and sports), and that this skill becomes stronger with age. Additionally, mean levels of ability beliefs decline for many domains (e.g., math, music) as the child develops and transitions into junior high school, and for some domains, such as math, these declines continue throughout adolescence. Interestingly, Wigfield, Eccles, Mac Iver, Reuman, and Midgely (1991) found that the ability belief in sports increased for the transition from elementary to junior high school, although it is important to keep in mind that transitions in sports (e.g., moving between competitiveness levels) do not often coincide with transitions in school.

The decline in ability beliefs as a child develops may be due to a better understanding of ability as capacity, the ability to use evaluative feedback, and the introduction of social comparison and competition. A complete understanding of ability beliefs and expectations across domains and age is important as research has shown them to be among the highest predictors of academic achievement. Therefore, dropping out of

sports may be linked to a decline in ability beliefs; while continued participation is linked to a constant or increase in ability beliefs relative to the task.

Additional research has further defined expectations of success as being a result of two distinct concepts (Eccles & Wigfield, 1995). Firstly, a self-concept of one's domain-specific abilities, which is analogous to the subjective ability beliefs mentioned previously. Second, expectations of success are also defined by perceived task difficulty. In this way, the question "Can I do this task?" can be seen as being made up of the two smaller questions "How good am I at this task?" and "How hard is this task?" As such, expectations of success in a given task are positively associated with the self-concept of one's domain-specific abilities in that task and negatively associated with the perceived difficulty of the task. Therefore, expectations of success can be seen as related to the psychological concept of self-efficacy, which is described as an individual's belief in his or her ability as well as the capacity to achieve success within a given domain (Çetinkalp and Turksoy, 2011). Sports self-efficacy can be described as one's belief in one's ability within a sports context and the capacity to enact behaviours to achieve success. Several studies have found self-efficacy to be a positive predictor of participation in physical activity (Blanchard et al., 2007; Luszczynska et al., 2010). An individual's belief in how good they are and how well they will do will go a long way in determining his or her likelihood of participation.

While an expectation of success asks "Can I do this task?" subjective task value revolves more around the question of "Do I want to do this task and why?" Eccles et al. (1998) established four distinct task-value components. 1) Attainment value refers to the personal importance an individual assigns to being good at a specific task. This

component is related to how well one's perceived ability on a task confirms one's self-identity (i.e., if a boy sees himself as an athlete, then attributing high importance to doing well in sports fits with his self-schema). As such, attainment value is closely related to the notice of athletic identity mentioned earlier. The athlete who feels a sport has high attainment value will be participating in that sport because it is important to who s/he is and s/he will strive to be the best they can be.

2) Intrinsic value pertains to an individual's level of enjoyment or interest in doing a specific task for its own sake, and can be seen as similar to the idea of intrinsic motivation. A child who decides to play a sport primarily because they have fun playing it, would show higher intrinsic value scores. Enjoyment is all about excitement, arousal, and having fun and that is the basis of intrinsic value.

3) Utility value refers to how useful an individual believes a specific task is relative to long-term goals. This component may be seen as analogous to extrinsic motivation as individuals are participating to obtain something outside of the given task. Individuals who participate in sports for the sole purpose of gaining relationships with certain individuals, status or scholarships would show higher utility value scores as they seek social acceptance and approval.

4) The last task value component is cost and it is concerned with the negative side of task value. It includes the risks (e.g., performance anxiety), sacrifices (e.g., effort to be successful), and lost opportunities (e.g., other activities) that are associated with choosing one activity over another. While cost is an important component in the expectancy-value model, research to date has focused more on the positive aspects of the model. Cost might be associated with all three of the major categories reasons for participating in

sports as it can certainly negatively affect someone on a health (e.g., injuries), social (e.g., loss of friends), or enjoyment (e.g., lack of fun) level.

Similar to ability beliefs and expectation of success, task value shows developmental changes in structure and level across childhood and adolescence (Eccles et al., 1993). Younger children (i.e., grades 1 to 4) are only able to distinguish between two components, intrinsic and utility, while older children and adolescents are able to differentiate between all three positive task values. Also, as with ability beliefs, task value tends to decline as children age. Attainment and utility value decline across a variety of domains, including sports, whereas intrinsic value declines for some (e.g., reading and music) but not for others such as sports (Wigfield et al., 1991). While expectation of success is seen as a predictor of academic achievement, task value is a better predictor of choice of activity and intention to continue participation and thus more in line with the research of the present study. Therefore, it is essential to differentiate among task-value components as each one may play a unique role across age groups and domains, and thus may be differentially predictive of choices to participate/dropout, persistence, effort, and performance.

Thus, from a task-value perspective, continued sports participation would be related to a) I think it is important to my identity, to my future self, that I continue to be a hockey player; b) I enjoy myself when I play hockey; I enjoy being with my friends; c) I may be able get a hockey scholarship if I keep playing (or I won't be able to play Junior, so I'll quit now); and d) reasons that I might quit hockey would include – too much pressure, too difficult, or I want to spend more time with my friends.

Looking at more general physical activity and exercise, the motivation to participate can also be explained through the expectancy-value model, with some differences in the specifics. Similar to sports participation, the choice to participate in non-sport physical activities begins with one's expectation of success. An individual's belief about whether or not they are capable of achieving success in a given task is a strong determinant of his/her choice to participate. A key difference between sports and exercise may be in the way success is defined. In sports, success is often seen in statistics such as points scored, games won, and trophies earned. The definition of success for individuals who are participating in exercise tend to be much more subjective in nature. Success might be seen as the ability to jog a certain distance, to keep up with other members of a fitness class, or to simply not look foolish while working out at a public gym. While success in sports is guided by universal measures of achievement, success in exercise is different for each individual and can evolve as ability and ability beliefs increase.

Task-values are also important for understanding motivation for exercise, but like expectations of success, they tend to differ slightly from those applied to sports participation. Attainment value refers to the importance an individual places on doing well in a given activity as well as how much success in the activity confirms his/her self-identity. The hockey player is participating because he feels hockey is important and that it is important that others see him as a hockey player. The jogger may place some similar attainment value on her activity as she may feel it important for her self-identity to be seen as a jogger, but it also may go further in that her motivation for jogging might be due to the importance she places on maintaining physical fitness and jogging is one way

she is able to confirm her identity as a physically fit individual. Attainment value relates to ideal images of what one should be like and many individuals participating in non-sport physical activities are motivated by their drive to achieve these ideal images.

Intrinsic value relates to the enjoyment, excitement, and interest that is produced from a given task. Motivation to participate is stronger when activities are engaging and interesting to the participants. Much like sports participants, exercisers are participating in physical activities because of the excitement and arousal. At the same time, many individuals struggle with adhering to exercise regimens due to lack of interest in their choice of activity. While experiences in sports may be quite varied, for some, exercise programs can become repetitive and boring. For an individual to choose to participate and continue participating in a non-sport physical activity, it must hold intrinsic value to him/her. That is to say, an individual will be more motivated to participate in activities that s/he finds exciting, interesting, and enjoyable.

Utility value is probably where the greatest difference between sports and non-sport physical activities can be seen. Utility value refers to the usefulness of a task to areas outside of the task, particularly in the achievement of long-term goals. While both sports and exercise are useful for achieving long-term goals, it is the type of goals where major difference can be seen. Based on earlier discussions on motivation, sports participants have goals related to affiliation and social recognition. They are there to meet others and be recognized for their accomplishments. The usefulness of sports for these individuals is about building relationships and status. The goals of exercise participants are more closely related to health and appearance motives. They are using exercise as a way to both feel good and look good. Long term goals include avoiding illness, weight

management, and improving appearance. It is important for exercise participant to maintain their health and appearance and in turn, exercise is a useful way of attaining these goals.

Finally, the cost of exercise is much the same as it is for sports. Cost is all about risks, sacrifices, and lost opportunities associated with choosing one activity over another. Many of the same concerns about the cost of sports can be applied to exercise as well. Individuals are worried about getting hurt, the time and effort it will take to achieve success in their activity, and how that time is taken away from other areas such as academics, career, or even participating in other physical activities. Activities high in cost, whether they are sports or exercise, will be less attractive to individuals who are looking to engage in some form of physical activity.

While little research has been done comparing the motivations for sport and exercise, it is apparent from the above discussions, that some significant differences may exist. In using the expectancy-value model, expectation of success differ in the way success is defined. Sports tend to have universal measures of success, while success in exercise is more likely to be different for each individual. Not matter how it is defined, an individual's expectation of achieving success in a given task plays a large role in his/her motivation to participation. In terms of task-values, there are several areas where sports and exercise differ. For attainment value, the importance of sports may lie in confirming an individual's identity as an athlete, whereas exercise participants see the importance of exercise in striving to achieve the ideal self. Both sports and exercise hold high intrinsic values. While the sources and types of excitement and arousal may differ, it is imperative for both that activities are interesting and enjoyable for their own sake. The usefulness, or

utility value, of sports and exercise vary in terms of the goals participants in each are trying to achieve. Sports participants are looking for the affiliation and recognition that will help them in the future. Exercise participants are using their activities as a way to maintain physical health and improve appearance. Although slight differences in types of risks and sacrifices may exist, the cost of both sports and exercise work in the same way as the lower the cost of a given activity, the higher motivation to participate will be.

In summarizing the work done thus far on the Eccles et al.'s (1983) model, an individual's choice and persistence in an activity is a product of how well that individual expects to perform in the activity as well as the importance the individual places on being successful in the given activity and the degree to which participating in the activity fulfils requirements of the individuals goals, plans, and sense of self.

Linking back to the major reasons for participating in sport, it is clear that a connection exists between Eccles et al.'s (1983) task values and the physical, social, enjoyment, and identity categories. The physical and social reasons for playing sports can be related to the perceived utility value of the activity. Being healthy, having a good social network, as well as skill development, are all important for current and future goals, as well as career plans. The extent to which an individual experiences enjoyment in the activity is analogous to an activity's intrinsic value. Playing a sport for its own sake is seen as both a reason for, and benefit of, playing sport. Finally, identity relates to the attainment value a person places on a given task. A person will be more likely to engage in sport if it helps confirm his/her sense of self-identity.

With respect to exercise participation, the expectancy-value model may show how motivations for exercise differ from those involved in sports. Ability beliefs, interest, and

cost should have relatively the same effect on motivations for both sports and exercises. Expectations of success and having fun are most crucial element in choosing to participate in an activity. An activity having relatively few risks and sacrifices is also helpful when trying to pick one activity over another. Where difference between sports and exercise motivation may occur is in the importance and usefulness assigned to a given activity. Previous studies have found that the reasons individuals give for exercising are related to health and appearance such as stress and weight management (Kilpatrick et al., 2005; Frederick & Ryan, 1993). In this way, it can be said that exercisers are motivated by what their activity gives them. Therefore, it would be expected that exercisers would place a higher utility value (i.e., the usefulness of an activity to the outside world) on their activity of choice. Athletes, on the other hand, are highly motivated by the opportunity to demonstrate competence and as such may place a higher level of importance (i.e., attainment value) on perform well in their activity. While it still may be seen as important to been seen in one's ideal physical self, something that can be achieved through regular workouts, the relative attainment value of exercise may not be as high as that seen in sports.

Eccles et al.'s (1983) expectancy-value model has been used in a number of studies examining a wide array of achievement behaviours including choices of school subject and leisure activities. Of particular relevance to the present study are studies that have used Eccles' model in a sports or physical activity context. Guillet, Sarrazin, Fontayne, and Brustad (2006) examined attrition rates of female athletes in a stereotypical male sport, under the framework of the expectancy-value model. The goal of the study was to predict the intention to persist or continue in sport based on the

motivational factors of success expectations and perceived task values. 333 female handball players between the ages of 13 and 15 years participated in the study. Subjective task values (attainment, intrinsic, and utility) were measured by the scale of subjective activity, which is a modified version of the activity value scale taken from Eccles et al. (1983). Expectations of success measured a player's current perception of competence at a given task (Eccles et al., 1983). Four items were included on the scale (e.g., "I feel that I am better than my teammates").

Behavioural intention was measured using five questions that assessed future intention to discontinue playing handball. Those individuals with higher expectations of success (i.e., those who felt more competent at handball) and perceptions of task values (i.e., those who found handball to be highly important (attainment), interesting (intrinsic), and useful (utility)) were less likely to drop out of sport. These results are consistent with Eccles et al. (1983) in that, expectations of success and subjective task values were influential determinants of motivated behaviour.

While little research has been conducted with respect to the decreasing participation rates in sport, this study shows how Eccles et al.'s (1983) model might provide some explanation. The more value an individual assigns to a task, the less probable they are to drop out. As the study suggested, if individuals are not able to identify with a given activity or the activity does not help with respect to identity development (i.e., low in attainment value), they will be less likely to want to participate in the activity. Similarly, if individuals do not find a task to be particularly interesting or useful (i.e., low in intrinsic and utility value), the probability that they will participate will be low.

In an effort to extend and lend support for the expectancy-value model in a competitive sport context, Cox and Whaley (2004) assessed high school basketball players' expectations of success, task values, basketball identities, and achievement behaviours. 189 varsity basketball players between the ages of 14 and 19 years participated in the study. Expectations of success and subjective task values (attainment, intrinsic, and utility) were measured using the Self- and Task-Perception Questionnaire (Eccles & Wigfield, 1995) modified to make them specific to basketball. Expectations of success were assessed with ability/expectancy-related items and the subjective task values were assessed through subscales measuring attainment value, intrinsic value, and utility value. Additionally, a cost measure assessed costs associated with playing basketball. Achievement behaviours were measured as a coach's rating of a player's effort and persistence throughout the season.

Expectations of success and task values were significant predictors of effort and persistence. Conclusions from the author suggest a need for coaches to emphasize positive expectancies in their players through frequent encouragement and direction following unsuccessful performances. Other studies have found that higher expectations of success and stronger task values lead to higher motivation for continued participation (Xiang, McBride, & Bruene, 2006; Gao, 2008)

Given that task value is a better predictor of choice of activity and intention to continue participation, Stuart (2003) looked at the sources of subjective task values among adolescent athletes. Participants were given a value questionnaire and 10 male and 10 female eighth grade students were selected and placed in groups based on those who place a low value on sports and those who place a high value on sports. Follow up

interviews were conducted on these selected participants. The main questions focused on each task value component (i.e., attainment, intrinsic, utility) separately and participants were asked to give reasons for their ratings. Content analysis revealed that positive experiences such as pride, movement sensations, and building strength and fitness had a positive impact on subjective task value. On the other hand, negative experiences such as fear of injury, negative coach and peer experiences, and loss of other opportunities reflected negative sources of subjective task value. Results of this study further strengthen Eccles et al.'s (1983) model and show how choice of activity is largely dependent on the value an individual assigns to that activity. An individual is more likely to participate in sport if s/he feels that the value of playing the sport outweighs the costs associated with it.

Looking at how the expectancy-value model has been used in exercise research, Vernadakis, Kouli, Tsitskari, Gioftsidou, and Antoniou (2014) examined university students' expectancy beliefs and tasks value associated with exergaming (i.e., exercising through the use of video games) and physical education. 232 first-year undergraduate students participated in the study. A survey developed as a modified version of the scale taken from Eccles et al. (1983) was used to evaluate participants' ability beliefs, expectations of success, and subjective task values associated with choice in exergaming and physical education. An additional question was asked to determine participants' intention to engage in exergaming or physical education in the future. Physical activity was measured through self-report using Godin's Leisure-Time Exercise Questionnaire (GLTEQ) (Godin & Shepard, 1985). The questionnaire assesses physical activity over a

seven-day period and asks individuals to report the days per week they participate in various levels of exercise.

Expectancy beliefs and task values were positively associated with the intention to continue participation in both exergaming and physical education. While expectancy beliefs did not differ across domains, exergaming was found to have a higher intrinsic value, while physical education had higher attainment and utility value. This is an important finding as it indicates that individuals may choose different tasks for different reasons. Some activities are chosen merely because they are deemed fun and entertaining, whereas others are chosen for their personal importance and usefulness. Choice of activity does not always depend on all three positive task values; high levels in one (e.g., attainment, intrinsic, or utility) could be enough to engage in an activity.

Another study looking at motivations of exercisers, Gao and Xiang (2008) used the expectancy-value model to determine achievement outcomes (i.e., intention, engagement, and performance) in a college-level beginner's weight training class. 156 undergraduate students between the ages of 17 and 28 participated in the study. Participants filled out a self-report questionnaire designed to assess their ability beliefs, expectations of success, and subjective task values (attainment, intrinsic, and utility). The intention to continue participation in weight training was measured by three items on a 100-point scale (0 = certainly will not to 100 = certainly will). The three items asked the degree of certainty they would continue, the likelihood of finding a training partner, and the likelihood of gaining knowledge about weight training. Engagement was measured by workout logs recorded by participants over the semester that maintained the number of exercises and sets completed during each workout. Performance was measured by two

skill tests given at the middle and end of the semester which involve performing specific exercise, demonstrating proper technique, and identifying muscle groups associated with each exercise.

Attainment and intrinsic value, but not utility value, were found to be positive predictors of intention of future participation as well as engagement in the class. The authors suggest that this result may indicate that importance and interest may represent more intrinsic aspects of the subjective task value construct and therefore may be more powerful predictors of intention and engagement. Participants' expectancy beliefs were found to be the only positive predictor of performance. This is in line with previous research that shows that expectations of success are better predictors of achievement and performance, whereas task values are better predictors of choice and intention to continue (Weiss & Ferrer-Caja, 2002).

What is missing from the research that has been done up until this point is the application of Eccles et al.'s (1983) expectancy-value model to study and compare factors that may affect adult motivations for sport versus exercise. Studies have been conducted using Eccles et al.'s (1983) model examining the achievement behaviours related to child and adolescent participation in sport, as well adult choice of activity in areas of academics and exercise. However, little to no research has been done to investigate adult expectations of success and task values associated with sport participation and how these may differ for individuals engaged in exercise. The model has been used to examine sport participation and adult choice and intention, but never the two together. Therefore, the groundwork has been laid and it is the aim of the present study to fill in this gap in the research and examine the usefulness of Eccles et al.'s

(1983) expectancy-value model to further our understanding of sports vs exercise participation, in a university sample of emerging adults. Through the exploration of adult motivations for sport and exercise participation, it is hoped that a better understanding of the factors that affect the decision to participate in a variety of physical activities can be obtained.

Overview of the Present Study

The goal of the present study was to better understand how motivations for participation in sport differ from motivations for participation in exercise, among emerging adults using Eccles et al.'s (1983) Expectancy-Value Model. The largest decline in participation rates across age groups exists between adolescence and emerging adulthood (Statistics Canada, 2011), however, little research has been dedicated to understanding the factors that affect the decision to participate in physical among emerging adults.

Eccles et al.'s (1983) Expectancy-Value Model focuses on two major variables, expectations of success and subjective task value, which influence achievement behaviours, in this case, level of sport and exercise participation. For the present study, all definitions were taken from Eccles and Wigfield (1995). Expectations of success was defined as an individual's self-determined probability of success for a given task. Subjective task value was broken down into four separate variables. Attainment value was defined as the amount of importance of doing well on a task in terms of one's self-schema and core personal values. Intrinsic value was defined as the inherent enjoyment or pleasure one gets from participating in an activity. Utility value was defined as the usefulness a task possesses in terms of reaching short-term and long-term goals. Cost was

defined as what is lost, or given up, or suffered as a consequence of participating in an activity (see Figure 3).

Figure 3. Expectancy-value model predicting participation for sports and exercise participants.

Rather than use a dichotomous measure of physical activity participation (e.g. Yes I participate or No I don't), the present study asked participants to choose a single activity (either a sport or an exercise) and examined four indicators of participation, looking at frequency, duration, intensity, and adherence. Frequency refers to the number of times an individual participate in a given activity during a set time period. Intensity refers to the amount of energy expended while participating in the activity. Duration refers to the

length of an activity session. Adherence refers to conforming faithfully to a standard of behaviour and maintaining strict attendance of the activity. Taken together, these four elements make up an individual's level of participation and give an indication of how much physical activity/sport is a part of their life.

Each of these four indicators of participation were analyzed separately, to examine the possibility that these variables may be differentially predicted by expectations of success and task values.

Finally, it was of interest to the present study to investigate how the benefits obtained from sports participation may differ from those obtained from participating in exercise activities such as jogging or going to the gym. The present study explored subjective ratings of general health, physical health, mental health, and self-esteem.

In order to test the model's application to the sport participation and physical activity of emerging adults, the following hypotheses were proposed:

- 1) It was expected that participation levels (for both athletes and exercisers) would be predicted by Eccles et al.'s (1983) Expectancy-Value Model. More specifically, it was expected that higher expectations of success along with higher levels of attainment value, intrinsic value, utility value, and lower levels of cost would predict higher levels of participation (i.e., participating more days a week, participating for longer sessions, putting forth more effort during sessions, and being more diligent in sticking to a sport or exercise schedule).
- 2) It was expected that the intrinsic subjective task value would be the strongest predictor of participation in both athletes and exercisers

- 3) It was expected that attainment value would be higher among sport participants and utility value would be higher among non-sport participants, given that previous research has found that athletes are motivated by need to demonstrate competence, whereas exercisers are more motivated by reasons related to health and appearance.
- 4) It was expected that higher participation levels, for both athletes and exercisers, would be associated with higher ratings of general health, physical health, mental health, and self-esteem.
- 5) It was expected that mental well-being (e.g., mental health and self-esteem) would be more strongly associated with higher participation levels in sports than for exercise.

Method

Participants

Participants for the present study were 328 undergraduate students (71 males and 255 females) from Carleton University. The sample was recruited through the Carleton University SONA participant pool. Participation was restricted to those individual with current or recent (i.e., with the last 2 years) participation in physical activity.

Measures

Background information questionnaire. The background information questionnaire was used to obtain demographic information such as the age, gender and SES of the participants. Participants also provided information about the physical

activities in which they regularly participated. Participants were asked to list all the organized sports in which they participated, the number of years they had participated in each activity, the level of competitiveness, as well as the location (e.g., school or community). Participants were also asked to list all the non sport physical activities in which they participated, the number of years they had participated in each activity, as well as competitive level and location. See Appendix A for complete measure. From these two lists of activities, participants were asked to choose the one activity that was the most important to them, and to keep this activity in mind, as they completed the remainder of the questionnaires. Activities were assigned as being either Sport or Exercise/Non Sport, based on how they were categorized by the participants.

Self- and Task-Perception Questionnaire. A modified version of Eccles and Wigfield (1995) was used to measure expectations of success and subjective task values. Participants were asked to think about their most important activity and to rate their level of agreement with various statements related to their expectations of success and subjective task values. An example item for expectation of success was, “Compare to others, I am very good at my activity” An example item of attainment value was, “It is very important for me to be good at my activity” An example item of intrinsic value was, “I really enjoy my activity” An example item of utility value was, “I find what I learn while playing my activity to be useful for my life outside of my activity” An example item of cost was, “I am really worried about getting injured from my activity” All items from the questionnaire were measured using a 7-point Likert scale. The original expectancy beliefs subscale contained 5 items and had an alpha coefficient of .92. The original task value subscales contained included 3 items for attainment value, 2 items for

intrinsic value and 2 items for utility value. Reliability for these three subscales of task value was demonstrated in Eccles and Wigfield (1995), with attainment value having an alpha coefficient of .70, intrinsic value, .76, and utility value, .62. Reliability scores for the present study were as follows: Expectations of Success, .80; Attainment Value, .85; Intrinsic Value, .83; Utility Value, .61; and Cost, .58. See Appendix B for complete measure.

Behavioural measure of physical activity participation level. In order to determine the participation level of each participant, they were asked to fill out a behavioural measure (Kilpatrick, Hebert, & Bartholomew, 2005) that covers various aspects of physical activity participation. Participants provided descriptive information about their level of participation, responding to 4 single-item indicators measuring frequency, duration, intensity, and adherence. Frequency refers to the number of times an activity is performed in a day or week. For the present study, frequency was measured by the question, “In an average week, how many times do you participate in your activity?” Duration, on the other hand, refers to the length of an individual activity session. Duration was measured by the question, “How long is an average session of playing your activity?” (<15 min/session – 1+ hrs/ session). Intensity refers to the amount of effort an individual expends while participating in an activity. Intensity was measured by asking participants, “In an average session, how much effort are you putting in?” (ranging from 0 (no effort) to 10 (absolute maximum effort)). Finally, adherence refers the level in which one conforms to a set of behaviours that are part of a pre-existing agreement. In other words, if an individual has signed up to play on a particular sports team, how likely is it that he/she will show up to every game and practice. Adherence will be measured by

asking, “How often do you skip sessions of your activity?” (ranging from 0 (never) to 10 (very often)). See Appendix C for complete measure.

SF-12 Health Survey. The SF-12 Health Survey consists of 12 items used to measure physical and mental health which results in two summary scores: Physical Health and Mental Health as well as a subjective rating of general health. Physical Health indexes consists of limitations due to physical health and pain. Mental Health indexes look at self-reported mental health and limitation due to emotional problems (e.g., depression or anxiety). Given that individual questions on the SF-12 Health Survey have different answer ranges, the scores for each question were standardized. Following this, a mean score was obtain from the relevant standardized questions for both Physical Health and Mental Health. The subjective rating of General Health was obtained with the question, “In general, would you say your health is: Excellent, Very good, Good, Fair, or Poor?” See Appendix D for complete measure.

Rosenberg Self-Esteem Scale (RSE). The RSE is a scale designed to measure state self-esteem by asking individuals about their current thoughts and feelings about themselves (Rosenburg, 1965). The scale consists of 10 items, which are all answered on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Previous studies have found the RSE to have an alpha of .91, indicate a high level of internal consistency (Sinclair et al., 2010). See Appendix E for complete measure.

Procedure

The entire study was administered online with Qualtrics survey software.

Results

The purpose of the present study was to examine motivations for participating in physical activity in an emerging adulthood sample, using Eccles et al.'s (1983) expectancy-value model of motivation. Eccles' model argues that motivation for a specific task is predicted by how well one expects to perform in the task, the value s/he assigns the task, and limited costs associated with the task. Measures of participation included Frequency, Duration, Intensity, and Adherence. The goal of the present study was to determine how appropriate the expectancy-value model was for predicting participation motivation in a college sample. Of particular interest was how this model varied for individuals engaging in sports versus individuals engaging in exercise such as running and working out in a gym. A secondary interest of the present study was to investigate how the indicators of participation (i.e., Frequency, Duration, Intensity, and Adherence) might predict various health measures (e.g., General Health, Physical Health, Mental Health, and Self-Esteem).

176 individuals chose a sport as their favourite activity (53.7%), while 152 chose an exercise (46.3%). The most frequent sports were soccer, hockey, and basketball. Frequent exercise included going to the gym, jogging, and dance. For a detailed list of the types of physical activities chosen by participants, please refer to Appendix M. Overall, sports participants indicated that they had played their chosen sport for an average of 8.39 years. For individuals who chose an exercise, average experience was 4.94 years.

There were significantly more female participants than male participants. As such, any results that are related to gender should be interpreted with caution.

Expectancy-Value Model

Overall, the scores on the expectancy-value questionnaire were consistent with what was expected from Eccles et al.'s (1983) model (see Table 1). The highest score was Intrinsic Value (e.g., the enjoyment of an activity for its own sake) ($M = 6.06$, $SD = 0.99$), followed by Attainment Value (e.g., the importance one places on participating in and being good at an activity) ($M = 5.75$, $SD = 1.09$), Expectations of Success (e.g., how well one expects to perform in a given activity) ($M = 5.21$, $SD = 1.09$), Utility Value (e.g., the usefulness of the activity to one's life outside the activity) ($M = 4.96$, $SD = 1.16$), and finally Cost (e.g., the risks, sacrifices, and lost opportunities associated with participating in a chosen activity) had the lowest score ($M = 3.65$, $SD = 1.30$).

Table 1

Descriptive Statistics for Expectancy-Value Model

	<i>M</i>	<i>SD</i>
Expectations of Success	5.21	1.09
Attainment Value	5.74	1.09
Intrinsic Value	6.06	.99
Utility Value	4.96	1.16
Cost	3.65	1.30

Correlations between the expectancy-value variables can be found in Table 2. The strongest correlations were found between Attainment Value and Intrinsic Value, Attainment Value and Expectations of Success, and Intrinsic Value and Expectations of Success.

Table 2

Correlations Between Expectancy-Value Variables

	1	2	3	4	5
1. Expectation of Success	-				
2. Attainment Value	.652**	-			
3. Intrinsic Value	.575**	.671**	-		
4. Utility Value	.497**	.530**	.446**	-	
5. Cost	.125*	.151**	.106	.272**	-

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

In comparing individuals that participate in sport with individuals that participate in exercise on the expectancy-value model, a multivariate analysis of variance (MANOVA) was conducted using Activity Type and Gender as independent variables (IVs). Results revealed a significant effect only for Activity Type, $F(5, 318) = 5.536$, $p < .001$, Wilks' $\Lambda = .920$, partial $\eta^2 = .08$. An examination of univariate tests for each dependent variable indicated that sports participants reported significantly higher scores for all motivational variables except Cost (See Table 2).

Table 3

Descriptive Statistics for Expectancy-Value Model by Activity Type

	<u>Sports</u>		<u>Exercise</u>		<u>F</u>	<u>partial η^2</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Expectations of Success	5.43	1.05	4.95	1.08	10.20**	.031
Attainment Value	5.95	1.02	5.51	1.12	7.30**	.022
Intrinsic Value	6.33	.85	5.75	1.05	23.78**	.069
Utility Value	5.16	1.14	4.72	1.14	4.39*	.013
Cost	3.92	1.25	3.34	1.29	3.31	.010

* $p < .05$, ** $p < .01$ **Participation**

Participation was measured using 4 single-item indicators measuring Frequency, Duration, Intensity, and Adherence (see Table 3). Frequency was measured by asking participants to indicate the number of days a week they participated in their activity ranging from 0 to 7. On average, individuals participated a little over 3 days a week ($M = 3.28$, $SD = 1.56$). Duration measured the average length of an activity session on a 5-point scale (1 = Less than 15 minutes to 5 = More than 60 minutes). Based on the results, average Duration was 45 to 60 minutes ($M = 4.11$, $SD = 0.90$). Intensity was measured on an 11 point scale (ranging from 0 (no effort) to 10 (maximum effort) with higher scores indicating that participants were putting forth more effort. Participants indicated fairly high levels of Intensity ($M = 7.66$, $SD = 1.39$). Finally, Adherence was also recorded with an 11 point scale and was a measure how often participants skipped regularly scheduled

Table 4

Descriptive Statistics for Participation Indicators

	<u><i>M</i></u>	<u><i>SD</i></u>
Frequency	3.28	1.56
Duration	4.11	.90
Intensity	7.66	1.39
Adherence	7.51	2.25

sessions of their activity (with 0 representing never and 10 representing very often). For the present study, Adherence was reverse scored so that higher scores indicated a higher level of Adherence with their chosen activity. Most participants indicated high levels of Adherence ($M = 7.51$, $SD = 2.25$).

A second MANOVA was conducted to examine differences in participation by the type of activity and the gender. Results revealed a significant effect only for Activity Type, $F(4, 318) = 9.161$, $p < .001$, Wilks' $\Lambda = .897$, partial $\eta^2 = .103$. An examination of univariate tests for each dependent variable indicated that sports participants reported significantly longer average sessions (i.e., Duration) and a higher level of Adherence, while Exercisers reported a higher Frequency of participation. The two groups did not differ with respect to level of Intensity (see Table 4).

Table 5

Descriptive Statistics for Participation Indicators by Activity Type

	<u>Sports</u>		<u>Exercise</u>		<u>F</u>	<u>partial η^2</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Frequency	4.03	1.60	4.57	1.45	14.58**	.043
Duration	4.34	.78	3.86	.95	7.81**	.024
Intensity	8.78	1.45	8.53	1.31	.046	.000
Adherence	8.97	2.17	7.99	2.24	8.14**	.025

*p<.05, **p<.01

Model Testing

In order to explore how well Eccles et al.'s (1983) expectancy-value model predicts participation in sports and exercise, several models were run regressing the expectancy-value variables on each of the indicators of participation (Frequency, Duration, Intensity, and Adherence). The same model (see Figure 3) was run for both athletes and exercisers for each dependent variable of interest. These models were initially constrained to be equal, which tested the assumption that the expectancy-value model worked the same for both groups. It was expected that for both athletes and exercisers, higher levels of each participation indicator would be predicted by higher Expectations of Success, Attainment Value, Intrinsic Value, Utility Value, and lower Cost. Intrinsic Value was expected to be the strongest predictor. Furthermore it was expected that Attainment Value would be a stronger predictor among athletes and Utility Value would be a stronger predictor among exercises. Model fit indices were used to test this assumption. Poorly fitting models suggested that athletes and exercise participants

differed in their reasons for participation. Modification indices were considered for model modifications to determine these differences.

Frequency. The initial model, for both sports participants and exercisers, was run using Eccles et al.'s (1983) expectancy-value components (i.e., Expectations of Success, Attainment Value, Intrinsic Value, Utility Value, and Cost) as predictors. In this first model, all the predictor variables were constrained to be equal for both groups, which resulted in a poor model fit (see Table 5), suggesting that athletes and exercisers differ in their reasons for the frequency of physical activity. Model modification indices suggested that the variable Cost be allowed to freely vary, which suggests that Cost is where athletes and exercise participants differ. Allowing Cost to freely vary resulted in a much improved model fit (see Table 5).

Table 6

Model Fit Information for Frequency

<u>Fit Indices</u>	<u>Model 1</u>	<u>Model 2</u>
χ^2	11.966(5)*	5.480(4)
RMSEA	0.092	0.047
CFI/TLI	0.885/0.771	0.976/0.939
SRMR	0.032	0.016

Note 1: Degrees of Freedom in Parentheses

*p<.05, **p<.01

Results from this second model indicated that Frequency was positively predicted by Expectations of Success and Utility Value, regardless of whether participants chose sports or exercise as their preferred activity. That is, participants who expected to perform better and felt that their activity was more useful, spent more days a week engaged in their activity. Contrary to hypotheses, Cost, however, was a positive predictor of Frequency for sports participants only, suggesting that athletes who reported higher levels of sacrifice for their sport, tended to engage in the sport more frequently (see Table 6). Figure 2 depicts a visual representation of how the model differed for the two groups when predicting Frequency, complete with the estimates of the parameter in question and marked for significance.

Table 7

Model Results for Frequency

	<u>Estimate</u>	<u>S.E.</u>	<u>Est./S.E.</u>	<u>Two-Tailed p-value</u>
Sport				
Expectations	0.215	0.099	2.170	0.030
Attainment	0.165	0.108	1.525	0.127
Intrinsic	-0.057	0.110	-0.516	0.606
Utility	0.219	0.082	2.667	0.008
Cost	0.351	0.088	3.983	0.000
Exercise				
Expectations	0.215	0.099	2.170	0.030
Attainment	0.165	0.108	1.525	0.127
Intrinsic	-0.057	0.110	-0.516	0.606
Utility	0.219	0.082	2.667	0.008
Cost	0.041	0.086	0.474	0.635

Figure 4. Expectancy-Value model predicting Frequency for sports and exercise participants.

Note: Significant relationships are marked with (*)

Duration. Initially all the predictor variables were constrained to be equal for both groups, which resulted in a poor model fit (see Table 7). Model modification indices suggested that the variable Expectation of Success be allowed to freely vary, which suggests that this variable plays a different role for athletes and exercisers in terms of predicting participation duration. Allowing Expectation of Success to freely vary resulted in a much improved model fit (see Table 7).

Table 8

Model Fit Information for Duration

<u>Fit Indices</u>	<u>Model 1</u>	<u>Model 2</u>
χ^2	9.171(5)	3.266(4)
RMSEA	0.071	0.000
CFI/TLI	0.938/0.876	1.000/1.027
SRMR	0.044	0.015

Note 1: Degrees of Freedom in Parentheses

*p<.05, **p<.01

Results from the second model indicated that Duration was positively predicted by Attainment Value and Intrinsic Value. Athletes and exercisers who felt their activities were more important and enjoyable, engaged in longer average sessions. Again, contrary to hypotheses, Cost was positively associated with measures of Duration, suggesting that the more athletes and exercisers reported making sacrifices for their activity, the more time they committed to the activity. Expectation of Success, however, was a positive

predictor of Duration for exercise participants only (see Table 8). That is, exercisers who felt more competent in their activity, tended to have exercise sessions of longer duration.

Figure 3 depicts a visual representation of how the model differed for the two groups when predicting Duration, complete with the estimate of the parameter in question and marked for significance.

Table 9

Model Results for Duration

	<u>Estimate</u>	<u>S.E.</u>	<u>Est./S.E.</u>	<u>Two-Tailed p-value</u>
Sport				
Expectations	0.055	0.063	0.867	0.386
Attainment	0.126	0.061	2.076	0.038
Intrinsic	0.118	0.063	1.890	0.059
Utility	-0.010	0.047	-0.224	0.823
Cost	0.107	0.035	3.085	0.002
Exercise				
Expectations	0.255	0.073	3.504	0.000
Attainment	0.126	0.061	2.076	0.038
Intrinsic	0.118	0.063	1.890	0.059
Utility	-0.010	0.047	-0.224	0.823
Cost	0.107	0.035	3.085	0.002

Figure 5. Expectancy-Value model predicting Duration for sports and exercise participants.

Note: Significant relationships are marked with (*)

Intensity. In the first model, all the predictor variables were constrained to be equal for both groups, which resulted in a poor model fit (see Table 9). Model modification indices suggested that the variable Intrinsic Value be allowed to freely vary, which suggests that Intrinsic Value is where athletes and exercisers differ. Allowing Intrinsic Value to freely vary resulted in a much improved model fit (see Table 9).

Table 10

Model Fit Information for Intensity

<u>Fit Indices</u>	<u>Model 1</u>	<u>Model 2</u>
χ^2	10.865(5)	1.347(4)
RMSEA	0.085	0.000
CFI/TLI	0.871/0.741	1.000/1.146
SRMR	0.075	0.009

Note 1: Degrees of Freedom in Parentheses

*p<.05, **p<.01

Results from the second model indicated that Intensity was positively predicted by Expectation of Success and Attainment Value for both groups. That is, participants who had more confidence in their abilities and saw their activity as more important, put forth more effort during participation. Intrinsic Value, however, was a positive predictor of Intensity for sport participants only, suggesting that athletes who found their sport to be more enjoyable and exciting, were working harder while engaged in their sport (see Table 10). Figure 4 depicts a visual representation of how the model differed for the two groups when predicting Intensity, complete with the estimate of the parameter in question and marked for significance.

Table 11

Model Results for Intensity

	<u>Estimate</u>	<u>S.E.</u>	<u>Est./S.E.</u>	<u>Two-Tailed p-value</u>
Sport				
Expectations	0.193	0.091	2.122	0.034
Attainment	0.195	0.100	1.936	0.053
Intrinsic	0.473	0.139	3.405	0.001
Utility	-0.037	0.077	-0.482	0.630
Cost	-0.006	0.057	-0.102	0.919
Exercise				
Expectations	0.193	0.091	2.122	0.034
Attainment	0.195	0.100	1.936	0.053
Intrinsic	-0.006	0.117	-0.055	0.956
Utility	-0.037	0.077	-0.482	0.630
Cost	-0.006	0.057	-0.102	0.919

Figure 6. Expectancy-Value model predicting Intensity for sports and exercise participants.

Note: Significant relationships are marked with (*)

Adherence. In the first model, all the predictor variables were constrained to be equal for both groups, which resulted in a poor model fit (see Table 11). Therefore, athletes and exercisers differ in their motivations for adhering to their participation schedules. Model modification indices suggested that the variable Intrinsic Value be allowed to freely vary, which suggests that that Intrinsic Value is where athletes and exercisers differ. Allowing Intrinsic Value to freely vary resulted in a better, but still a poor model fit (see Table 11).

Table 12

Model Fit Information for Adherence

<u>Fit Indices</u>	<u>Model 1</u>	<u>Model 2</u>
χ^2	9.698(5)	8.928(4)
RMSEA	0.076	0.087
CFI/TLI	0.787/0.573	0.776/0.440
SRMR	0.028	0.032

Note 1: Degrees of Freedom in Parentheses

*p<.05, **p<.01

Results from the second model indicated that Adherence is positively predicted by Intrinsic Value for exercise participants only, suggesting that exercisers who enjoyed their activity more, were more likely to stick to their exercise plan (see Table 12). As can be seen, none of the variables was a significant predictor of Adherence in sports participants. Figure 5 depicts a visual representation of how the model differed for the two groups when predicting Adherence, complete with the estimate of the parameter in question and marked for significance.

Table 13

Model Results for Adherence

	<u>Estimate</u>	<u>S.E.</u>	<u>Est./S.E.</u>	<u>Two-Tailed p-value</u>
Sport				
Expectations	0.201	0.151	1.332	0.183
Attainment	0.042	0.169	0.248	0.804
Intrinsic	0.309	0.233	1.327	0.184
Utility	-0.072	0.129	-0.557	0.578
Cost	-0.066	0.096	-0.691	0.490
Exercise				
Expectations	0.201	0.151	1.332	0.183
Attainment	0.042	0.169	0.248	0.804
Intrinsic	0.536	0.196	2.730	0.006
Utility	-0.072	0.129	-0.557	0.578
Cost	-0.066	0.096	-0.691	0.490

Figure 7. Expectancy-Value model predicting Adherence for sports and exercise participants.

Note: Significant relationships are marked with (*)

In summary, results suggest that the utility of using Eccles et al.'s (1983) expectancy-value theory to predict participation varied as a function of both the activity itself (sport vs exercise), as well as the specific participation index. However, results also found a lack of theoretical consistency in Eccles' model, with many non-significant path coefficients. Based on the fit indices displayed above, it would appear that the expectancy-value model was best at predicting Duration of participation, while models predicting Adherence had the highest χ^2 values and the lowest number of significant predictors, and thus were the poorest fitting models.

With respect to how often individuals engaged in physical activity (i.e., Frequency), feelings of competence (i.e., Expectations of Success) and perceived usefulness of the activity (i.e., Utility Value) were significant predictors for both groups, however, the risks and sacrifices associated with participation (i.e., Cost) were a positive predictor for the sports group only.

With respect to the length of activity sessions (i.e., Duration), the importance placed on success in the activity (i.e., Attainment Value) was a significant predictor for both groups, as was level of enjoyment (i.e., Intrinsic Value) and the risks of participation (i.e., Cost). For exercisers only, feelings of competence (i.e., Expectations of Success) were also predictive of longer session length.

With respect to amount of effort put forth during participation (i.e., Intensity), for both groups, feelings of competence in the activity (i.e., Expectations of Success), as well as the importance placed on success in the activity (i.e., Attainment Value), predicted higher levels of Intensity. For sports participants only, greater enjoyment of the activity (i.e., Intrinsic Value) was also related to Intensity.

The final measure of participation was Adherence, or how diligently participants kept to their physical activity schedule. None of the variables in Eccles' model were significantly predictive of Adherence for sports participants. For exercisers, their enjoyment of the activity (i.e., Intrinsic Value) significantly predicted greater Adherence.

Health Outcomes

Of additional interest was the relationship between participation in physical activity and health outcomes. More specifically, do the specific participation indices (Frequency, Duration, Intensity and Adherence) predict health and well-being and does this differ as a function of activity type (i.e., Sports participation vs Exercise)? For the purpose of the present study, measures of Physical Health and Mental Health were obtained by standardizing scores on each item of the SF-12 Health Survey and then calculating a mean score from items relevant to each construct. It was expected that higher participation levels would be associated with higher levels of physical and mental well-being (see Table 13).

Table 14

Descriptive Statistics for Health Measures

	<u><i>M</i></u>	<u><i>SD</i></u>	<u><i>Minimum</i></u>	<u><i>Maximum</i></u>
General Health	3.65	.81	1.00	5.00
Physical Health	-.0016	.62	-2.18	.77
Mental Health	-.0007	.70	-1.81	1.44
Self-Esteem	2.98	.59	1.20	4.00

A MANOVA was conducted to examine differences in physical and mental health measures (i.e., General Health, Physical Health, Mental Health, and Self-Esteem) by the type of activity and gender. Results revealed a significant effect for Activity Type only, $F(4, 319) = 2.424, p < .05$, Wilks' $\Lambda = .971$, partial $\eta^2 = .029$. An examination of univariate tests for each of the dependent variables indicated that no significant differences were found for General Health or Physical Health. However, a significant difference was found in terms of Mental Health. Sports participants had significantly higher Mental Health scores than exercisers, indicating better mental health. Specifically, they reported more energy, more instances of feeling calm and peaceful, fewer instances of feeling downhearted and blue, and fewer limitations due to depression and/or anxiety. A significant difference was also found for general self-esteem. Specifically, sports participants had higher levels of self-esteem (see Table 14).

Table 15

Descriptive Statistics for Health Measures by Activity Type

	<u>Sports</u>		<u>Exercise</u>		<u>F</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
General Health	3.72	.72	3.57	.89	1.79
Physical Health	.0004	.56	-.004	.68	.089
Mental Health	.074	.69	-.087	.71	7.53**
Self-Esteem	3.02	.56	2.94	.62	5.91*

*p<.05, **p<.01

Four separate regression analyses were conducted, one for each of the participation indices. It was also expected that while levels of physical well-being should be similar across the two groups (i.e., sports and exercise), mental well-being (e.g., Mental Health and Self-Esteem) would be higher amongst sports participants. This was based on the notion that the unique characteristics of sports have been shown to contribute to improved well-being, reduced stress, increased sense of belonging, lower depression, improved mental health, and improved sense of community (Eime et al., 2013).

For each of the regression analyses, Gender and Activity Type were entered on Step 1, the four components of participation (i.e., Frequency, Duration, Intensity, and Adherence) were entered on Step 2, and finally the interaction terms between Activity Type and each of the participation components were entered on Step 3 (see Table 15).

Table 16

Hierarchical Regression Predicting Health Measures

	General Health	Physical Health	Mental Health	Self-Esteem
Step 1	β	β	β	β
Gender	-.088	-.024	-.090	-.074
Activity Type	.080	.004	.101	.053
Adjusted R^2	.010	-.006	.015	.003
Step 2				
Gender	-.062	-.023	-.079	-.059
Activity Type	.040	-.068	.073	-.002
Frequency	.117*	-.093	.031	.046
Duration	.133*	.020	.093	.193**
Intensity	.182**	.225**	.067	.069
Adherence	.054	.141*	.015	.032
Adjusted R^2	.109	.072	.024	.054
Step 3				
Gender	-.059	-.021	-.078	-.066
Activity Type	.617	.246	-.002	-.419
Frequency	.051	-.122	.056	.020
Duration	.179*	-.022	.118	.212**
Intensity	.171	.325**	.024	-.008
Adherence	.215*	.155	.005	.026
Fre*ActType	.148	.067	-.061	.068
Dur*ActType	-.259	.227	-.141	-.094
Int*ActType	.087	-.550	.239	.414
Adh*ActType	-.633**	-.067	.038	.047
Total R^2	.124	.068	.013	.047

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

General health. On Step 1, there were no significant effects for Gender or Activity Type. On step 2, General Health was positively predicted by Frequency, Duration, and Intensity. On step 3, a significant interaction was found between Activity Type and Adherence. Simple slope analyses indicated that exercisers who were more diligent at sticking to their exercise schedule, reported more positive general health.

Physical health. On Step 1, there were no significant effects for Gender or Activity Type. On step 2, Physical Health was positively predicted by Intensity and Adherence. On Step 3, there were no significant interactions between Activity Type and any of the indicators of participation.

Mental health. There were no significant predictors of mental health.

Self-Esteem. On Step 1, there were no significant effects for Gender or Activity Type. On Step 2, Self-Esteem was positively predicted by Duration. On Step 3, there were no significant interactions between Activity Type and any of the indicators of participation.

In summary, participation indices were significantly related to health outcomes, although this varied as a function of the specific health variable. Results were generally consistent across activity type (Sports vs Exercisers), with measures of activity Duration being the most consistent predictor across health outcomes. While results were strongest for General Health, activity participation was not predictive of Mental Health, and only weakly related to Self-Esteem. Interestingly, Adherence was differentially related to health, as a function of activity type, with exercisers who were more likely to adhere to their exercise schedule reporting greater General Health.

Discussion

The primary goal of the present study was to test Eccles et al.'s (1983) expectancy-value model, predicting motivations for current participation in physical activity, in a college sample. In contrast to other research in this area, the present study examined motivation for current levels of participation as opposed to the choice to participate. For example, while previous research may ask, "Do you want to play hockey? Yes/No", the present study was interesting in questions such as, "In an average week, how many times do you participate in your activity?" and "How long are average sessions of your activity?" While previous studies in other areas have used this model to study choice behaviours (Dickhäuser & Stiensmeier-Pelster, 2003; Sullins et al., 1995), studies of physical activity have not been consistent in selecting an outcome variable. Given that the present study took place during the middle of an academic year, it made the most sense to study the current participation levels of study participants while attending university. Of particular interest was how the model varied for individuals engaging in sports (e.g., hockey) versus exercise (e.g., jogging).

It was expected that Eccles et al.'s (1983) expectancy-value model would be appropriate (e.g., a good fit) for predicting reasons/motivations for current participation levels of physical activity. Eccles' model proposes that motivation for a specific task is predicted by Expectations of Success (i.e., perceived ability in the task), as well as 4 indicators of the value the task holds: Attainment Value (i.e., how important participating and doing well in the task is for one's self-identity), Intrinsic Value (i.e., the sense of excitement and enjoyment derived from the task itself), Utility Value (i.e., the usefulness of the task to the outside world) and Cost (i.e., the risks, sacrifices, and lost opportunities

associated with participating in the task). Higher scores on all but Cost were expected to have a positive relationship with participation, with the strongest predictors being Intrinsic Value and Expectations of Success, while greater Cost was expected to be negatively related to outcome. Overall, the distribution of scores on the expectancy-value questionnaire for all participants was consistent with the theory, with higher scores on Expectation of success, Attainment Value, Intrinsic Value, and Utility Value, as well as lower scores on Cost.

Results from the study indicated that there was a lack of theoretical consistency with Eccles et al.'s (1983) model. While all reported models had good statistical fit, many of the predicted paths were non-significant. Furthermore, when Cost was a significant predictor, it was a positive, rather than a negative predictor. Consistent with these findings, previous research has reported that not all of the individual variables were always significant predictors. Cox and Whaley (2004), using regression analyses, found only two significant predictors (Expectations of Success and Intrinsic Value) of effort and persistence in high school basketball players, while cost was excluded from the analysis due to poor scale reliability. Gao & Xiang (2008), also using regression analyses, found that not all expectancy-value variables were significant predictors and that significant predictors differed based on different outcome variables in a weightlifting class (Attainment and Intrinsic Value predicted intention for future participation and engagement in class, while Expectations of Success predicted performance). Cost was not examined in this study as the authors note that appropriate measures had not been developed and this is an important issue that needs to be address in future research.

In addition, Guillet et al. (2006), while investigated the expectancy-value model as a potential mediator in the relationship between gender-role orientation and attrition in handball among female adolescents, combined the three positive value variables (i.e., Attainment, Intrinsic, and Utility) into one variable, and omitted the Cost variable, therefore estimating fewer paths, and reporting only significant paths. Using a structural equation model (SEM) approach, Guillet et al. (2006) found that higher perceptions of value and competence were negatively associated with the intention to dropout.

According to the model fit information, the expectancy-value model was still a moderately good fit in predicting three of the four indicators of participation: Frequency, Duration, and Intensity. The two best fitting models were the ones for Intensity, including three significant predictors (Expectations of success, Attainment Value, and Intrinsic Value) and Duration, which had the largest number of significant predictors (Expectations of Success, Attainment Value, Intrinsic Value, and Cost).

For both of these models, it appeared that factors relating to intrinsic motivation (e.g., valuing the importance of the activity and deriving enjoyment from the activity) were more important reasons for participating in physical activity than were motivations associated with a more extrinsic orientation (e.g., the usefulness of this activity to future self). Similar results were reported by Gao and Xiang (2008) who found that Attainment and Intrinsic Value, but not Utility Value, were positive predictors of intention to participate in the future, as well as engagement, in their study of a college-level beginner's weight training class. Furthermore, participants' expectancy beliefs (e.g., their perceived competence) were the only positive predictors of current performance in this same activity. Taken together, it would appear that intrinsic motivations (e.g., Can I do

this? Is important to who I am? Will I have fun while doing it?) are more important for promoting participation (in terms of Duration and Intensity) in physical activity than questions of a more extrinsic nature (e.g., What will I get if I play?).

The next hypotheses were concerned with how the expectancy-value model varied for individuals engaging in sports, such as hockey or soccer, versus individuals engaging in exercise, such as running and working out in a gym. The notion of comparing the motivations of athletes and exercisers is a relatively untested one, but it is necessary to understand if, and how, these two groups differ in order to develop appropriate interventions for wider audiences. While it was expected that Intrinsic Value and Expectations of Success should remain strong predictors of participation in both groups, it was expected that Attainment Value (i.e., the importance engaging in and being good at an activity) should be a stronger predictor among sports participants and Utility Value (e.g., the usefulness of the activity to the outside world) should be a stronger predictor among exercise participants. Studies have shown that sports participants are motivated by opportunity to demonstrate competence and obtain social recognition (Kilpatrick, Hebert, and Bartholomew, 2005; Frederick and Ryan, 1993). In this way, it can be argued that participation in sport is seen as important to the development of the self and one's self-schema (i.e., Attainment Value). Exercisers, on the other hand are motivated by health and appearance goals (Kilpatrick, Hebert, and Bartholomew, 2005; Frederick and Ryan, 1993). They are more interested in what they can get out of their activity (i.e., Utility Value) rather than the unique characteristics of the activity itself.

In comparing sports and exercise participants, sports participants had higher scores on all variables, which may indicate stronger motivations for participating in

sports activities. This is likely due to the more well-defined rules and guidelines of sports versus exercise activities. For example, Expectations of Success (e.g., I am good at this activity) might be a stronger motivator for sports participants as it is easier to judge one's competence, by comparing oneself to past performances, as well as to other participants. In contrast, judging competence in exercise can be more subjective and is not as easily defined.

Attainment value may be stronger for sport participants as it is more common to want to identify with a sports role. Individuals playing sports feel it is an important part of their identity, while exercisers may enjoy the benefits of exercise but would not identify as athletes. Intrinsic value may be higher in sports participants due to higher social and competitive aspects. Utility value may be higher in sports participants due to the social networks that are developed as well as the opportunities given to athletes, especially among university students. Cost may be perceived as greater in sports participants as it requires more time and effort to be successful. Also, exercisers are freer to make up their own activity schedules, while sports games and practice schedules tend to be more rigid.

While motivations were stronger for sports participants than exercisers, the relationships between different indicators of participation and specific motivations, varied significantly by activity type. Intrinsic Value, expected to be the most important predictor, was a moderately positive predictor of Duration in both groups, a positive predictor of Intensity for sports participants, and a positive predictor of Adherence in exercisers. This indicates that a single variable from Eccles et al.'s (1983) model can influence different aspects of participation, even for different groups. If an activity is

deemed to be 'fun', individuals (both exercisers and athletes), will participate for longer amounts of time, but 'fun' in an athletic environment was also associated with putting in more effort, or trying harder, whereas exercisers who enjoyed their activity tended to be more diligent in sticking to their exercise schedule.

Expectation of Success, also believed to be one of the most important predictors, was a positive predictor of Frequency and Intensity for both groups. Regardless of which activity was chosen, individuals who expected to do better in their task participated more days a week and put forth more effort when participating. Additionally, Expectation of Success was a positive predictor of Duration in exercisers only. Exercisers who felt more competent had longer average sessions. In part, this may be due to the fact that exercisers are freer to make up their own schedules, whereas the length of sports sessions are more fixed. If a jogger feels more competent, than s/he is free to continue for longer sessions, whereas, this would be more difficult to do when playing a team sport.

Attainment Value, thought to be more important for sports participants, showed no difference between the two groups. It was a positive predictor of Duration and Intensity for both sports participants and exercisers. This indicates that the more important an activity is perceived to be, regardless of whether it is a sport or exercise, the longer an average session will be and the more effort that will be put forth. The lack of difference between the groups may be due to the wording of the questions. While the questions asked about the task being important and the importance of being good at the task, they did not explicitly talk about the task's importance to the self, self-schemas, and self-identity. Rather, questions involved statements such as, "It is very important for me to be good at my activity" and "I believe it is worth the effort to be good at my activity".

As such, the notion of the task being important to one's identity may not have come through, which was the aspect that was meant to differentiate the two groups.

Utility Value, thought to be more important for exercise participants, also showed no difference between the two groups. It was a positive predictor of Frequency for both groups. The more useful the chosen activity was to the outside world, the more days a week individuals would participate. In the current study, items making up the Utility factor included both health and appearance items as well as attention and recognition and the usefulness of the activity towards future goals. Given that the usefulness of an activity can be broken down into many aspects, not just health and appearance, sports participants may have found their activities to have high levels of Utility Value as well.

Finally, Cost was a positive predictor of Frequency in sports participants and of Duration for both groups. In contrast to expectations, individuals who reported greater risk and self-sacrifice in their physical activity, actually had higher participation levels. This result may be due to the fact that the present study was exploring current participation levels, rather than choice to participate. Rather than using the cost of an activity to help them to determine whether or not they would want to participate, the participants in the present study had already endured many of the costs related to their activity of choice, yet still continued to participate. This is related to sports commitment and more specifically, feelings of sport entrapment (Raedeke, 1997). As sports participants have put in a great deal of time, money, and effort, some develop the feeling that they *have* to participate as opposed to the feeling that they *want* to participate.

In summary, athletes and exercisers are much more similar than different when it comes to motivation for participation in physical activities. The most striking result was

seen in the role played by Intrinsic Value. Valuing the inherent enjoyment and excitement found while engaging in an activity was related to Duration for both groups, Intensity in athletes only, and Adherence in exercisers only.

Even when looking at the two groups separately, the most common significant predictors are related to notions of intrinsic motivation (i.e., Expectations of Success, Attainment Value, and Intrinsic Value). An individual's motivation to participate in physical activity is most commonly related to his/her ability beliefs, self-identity, and level of personal enjoyment. Playing a sport or engaging in an exercise is about who a person is and what s/he likes doing rather than what that activity can give them. Previous studies looking at the expectancy-value variables separately have reported similar results in both a sport (Cox and Whaley, 2004) and exercise context (Gao & Xiang, 2008). Studies looking at motivations of scholarship athletes have reported greater levels of external motivation and decreases in intrinsic motivation, which could have a negative impact on sports participation in these individuals (Medic et al., 2007).

One of the major problems in studying current rates of participation in sports and exercise is that participation takes many forms as denoted by the four indicators of participation used in the present study. It is difficult, if not impossible, to examine one of the indicators by itself, without mentioning the other three, when trying to get a well-rounded picture of participation. An individual showing high Frequency may look like s/he has strong participation, but if s/he also has low Duration, Intensity, and Adherence, then the high Frequency has little meaning. The four indicators of participation are highly interconnected and as such, all variables from the expectancy-value model played a role in predicting participation. Sports and exercise participants simply had different sets of

predictors, as shown above, but all five expectancy-value variable were revealed to be important motivators for both groups.

It is so important that interventions be created for the emerging adult population as they are susceptible to numerous poor health behaviours (Jung et al., 2008; Kwan et al., 2012) and are developing habits that will continue into adulthood. Despite the need for regular physical activity, the largest decline in participation rates exists between adolescence and emerging adulthood (Statistics Canada, 2011). A major focus behind the present study was an attempt to understand why there is such a drop in activity levels among university students. Through gaining a better understanding of the motivations for physical activity among emerging adults, it is the hope that interventions can be developed to help reverse the declining participation patterns.

At this stage in life, emerging adults are concerned with goals related to achievement, affiliation, and identity (Schulenberg, Bryant, & O'Malley, 2004). This is very much in line with the results found in the study as the most common predictors of participation included Expectations of Success, Attainment Value, and Intrinsic Value. Individuals of this age are looking to demonstrate their competence and be successful, to find out and develop who they are, and in general, have fun and make a few friends. All too often, as individuals age, the physical activities, especially the sports, available to them become more focused on competition and high skill levels. There are fewer recreational leagues available for those who are less skilled, those who want to try a new sport or activity for the first time, or those who are simply looking to have fun. As such, individuals are less inclined to participate as they age. Findings from the present study showed that university students are motivated to participate when they believe they are

capable and there are opportunities to demonstrate competence and enjoy themselves. Based on the results of this study, interventions aimed at increasing physical activity in university students, and emerging adults in general, should focus on providing activities that are accessible to all skill levels, are inherently fun and exciting, and encourage individuals to express their identity and unique personality.

The final hypotheses focused on how well the participation indices contributed to measure of physical and mental well-being. In general, it was expected that higher participation levels would be associated with higher levels of physical and mental health. Many studies have shown that even moderate levels of physical activity can lead to a decrease in rates of heart diseases, obesity, and mortality and an increase in health-related quality of life and self-esteem (Sabia et al., 2012; Reiner et al., 2013; Jurakić et al., 2010; Yiğiter, 2014). It was also expected that, while levels of physical well-being should be similar across the two groups (i.e., sports and exercise), mental well-being (e.g., Mental Health and Self-Esteem) would be higher amongst sports participants. This is based on the notion that the unique characteristics of sports have been shown to contribute to improved well-being, reduced stress, increased sense of belonging, lower depression, improved mental health, and improved sense of community (Eime et al., 2013).

General Health, which encapsulated both physical and mental well-being, was measured by a single question (“In general, would you say your health is: Excellent, Very good, Good, Fair, or Poor?”). In this regard, the results largely matched what was expected. Three of the four indicators of participation (Frequency, Duration, and Intensity) were significantly related to General Health, regardless of whether participants engaged in sports or exercise. Furthermore, an interaction between participation and

activity type revealed that for exercisers, higher Adherence resulted in a higher subjective rating of General Health. This makes sense given that exercisers are freer to make up their own schedules and having fewer penalties for missing sessions. Those who feel that they can better adhere to their own exercise schedule are able to report higher levels of general health.

In terms of physical well-being, the results still matched what was expected to some extent. Physical Health was significantly predicted by Intensity and Adherence. This would indicate that, for both athletes and exercisers, physical well-being is strongly related to the effort and persistence of the individuals. Those looking to improve their physical health need to understand that it will take hard work and that they need to adhere to a strict activity schedule.

With regard to mental well-being, the results from the present study were not supportive of the hypothesis. The Mental Health component of the SF-12 health survey had no significant predictors, across or between groups. Self-Esteem was significantly predicted only by Duration, across both groups, as those who were able to play/exercise for longer reported higher levels of self-esteem. No differences occurred between groups.

The lack of a relationship between participation and mental health outcomes may be explained in a number of ways. Firstly, it is possible that the relationship between these variables is more complex than could be in a linear regression analysis. The relationship between physical activity participation and mental well-being may be curvilinear, in that higher participation is better only up to a certain point, a notion that has been seen in previous research (Kim et al., 2012). Athletes and exercisers who over-exert themselves may experience negative mental health side effects. Another possible

reason for the lack of relationship between participation and health outcomes may be a result of false reporting due to a stigma that these physically fit individuals are immune to mental health issues. Mental toughness is overly valued in the sporting world and as such, it may be possible that some of the athletes and exercisers in the present study did not report as accurately as they could have on measures of mental well-being. Finally, while previous studies have found significant relationships between physical activity and various aspects of mental health, it may not be because of any of the participation indicators. Other unique characteristics such as socialization and skill development may play a more important role in improving mental health. It would be beneficial to compare athletes and exercisers to those not involved in any form of regular physical activity in terms of mental well-being. While the participation indicators did not have a significant relationship with measures of mental well-being, it is possible that some other aspect of sports and/or exercise might and comparing those who are physically active to those who are not may yield interesting results.

Evidently, there are some major benefits that can be gained when participating in physical activities, regardless of whether it is a sport or an exercise. Physical and mental health can all be promoted through engagement in physical activity. As mentioned above, many of the participants in the study were involved in both sports and exercise and this fact may be an explanation for why more differences were not found. Future studies should look to explore sports only and exercise only participants so that less overlap occurs and in turn, more reliable results are found.

Limitations/Future Directions

The present study had a number of notable limitations that may have altered the results and as such should be taken into consideration during future studies. The first and foremost was that unequal gender numbers made it difficult to make reliable generalizations based on gender differences. One of the original goals was to investigate the role of gender when using the expectancy-value model to predict participation, as previous studies have highlighted gender as an important variable in this field. Unfortunately, and is often the result of using psychology students as participants, the majority of respondent for the present study were female (77.7%).

Cost had a very low level of internal consistency, which may have affected the interpretability of the results. Previous studies using Eccles et al.'s model have either left out Cost completely when exploring the model's effectiveness or found similar levels of internal consistency. Future studies should aim to develop a more reliable measure of Cost, perhaps by focusing on a single facet of Cost (e.g., time or money or risk of injury) as opposed to all three.

As mentioned numerous times above, the present study explored current levels of participation, rather than the choice to participate, which may have affected the results. The idea of using the expectancy-value variables to make the decision of whether or not to participate is different from the idea of these variable affected one's current participation levels. Future studies might explore a more general university population and investigate how the expectancy-value model might affect their decision of whether or not to engage in intramural or varsity athletics.

The range in activities chosen may have affected the results as well. For example, team vs. individual sports, competitiveness levels, degree of socialization within the activity. Future studies should restrict the number of activities that are being compared (e.g., members on a hockey team vs. gym members) or at least record more information on different aspects of the sport. Perhaps a two-dimensional model based on competitiveness and social level would yield interesting results (e.g., how does the motivations of an individual engaged in a Low Competitive-Low Social activity compare to someone participating in a High Competitive-High Social? High-Low? Low-High?)

A longer expectancy-value questionnaire would have been better to gain a more well-rounded understanding of each expectancy-value component. Attainment Value needed to have more questions about identity and Utility value could have been broken down into different motivational categories such as health and appearance, developing of social networks, goal achievement.

Conclusion

The present study used Eccles' expectancy-value model in an attempt to understand the motivations for participation in sports and exercise within a university population. The findings provide partial empirical support that this model is appropriate for studying motivation for physical activity participation in emerging adults. Although not all of the expectancy-value variables predicted each indicator of participation, individual models for each of the participation indices were reasonable fits.

The most useful components of the model were those related to intrinsic motivation. Individuals in this study appeared to be more driven by internal rewards (e.g.,

achieving success, demonstrating competence, confirming identity, and having fun) than by external incentives (e.g., attention and career goals). Expectations of Success, Attainment Value, and Intrinsic Value played the most important roles when predicting motivation for sports and exercise. The expectancy-value model was originally developed to study achievement behaviours in an educational context, where the role of Utility Value is more evident. The usefulness of Mathematics or English towards future career goals is more clear than sports or exercise, unless the intended career goal is a professional athlete. In order for the expectancy-value model to work better in the field of physical activity, aspects such as Utility Value need to be tailored more towards sports and exercise. Instead of questions about the usefulness of an activity towards future career goals, participants should be asked about health and appearance motives and other reasons their activity might be useful outside of sports and exercise.

The main focus of the present paper was to compare sports and exercise in terms of motivations for and benefits of participation in physical activity. While it was expected that these two groups would differ greatly, results from the study indicated that very few differences existed at all. Overall, the comparison of sports and exercise presented in the present study did not find enough conclusive evidence to indicate that one is 'better' than the other. Regardless of whether it is a sport or an exercise, it is important that students be encouraged to engage in whichever physical activities best suit their abilities, personality, interests, and goals.

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Appendix A – Background Information Questionnaire

1. What is your current age?
2. What is your gender?
 - a. Male
 - b. Female
 - c. Other (please specify): _____
 - d. Prefer not to disclose
3. How will you financially support yourself while attending university (please select all that apply)?
 - a. Family (parents, relatives, spouse)
 - b. Personal earnings and savings (e.g. summer job)
 - c. Financial aid that must be repaid (e.g. OSAP, bank loans)
 - d. Financial aid that does not need to be repaid (e.g. scholarships, bursaries)
 - e. Other funding
4. If you selected more than one source of financial support, where will the majority come from?
 - a. Family (parents, relatives, spouse)
 - b. Personal earnings and savings (e.g. summer job)
 - c. Financial aid that must be repaid (e.g. OSAP, bank loans)
 - d. Financial aid that does not need to be repaid (e.g. scholarships, bursaries)
 - e. Other funding
5. Do you have concerns about being able to fund your university education?
 - a. No concern
 - b. Some concerns (I will most likely have sufficient funds)
 - c. Many concerns (I'm not sure if I will have sufficient funds to complete university)
6. What is your mother's highest level of education?
 - a. High school
 - b. Some college or university
 - c. College degree
 - d. Undergraduate degree
 - e. Master's degree
 - f. Doctorate
 - g. N/A
7. What is your father's highest level of education?
 - a. High school
 - b. Some college or university
 - c. College degree

- d. Undergraduate degree
 - e. Master's degree
 - f. Doctorate
 - g. N/A
8. What type of home did you live in growing up?
- a. Rented
 - b. Owned
 - c. Do not know
 - d. Do not wish to say
9. Compared to other families growing up, I was:
- a. Much worse off
 - b. Worse off
 - c. About the same
 - d. Better off
 - e. Much better off

Regular Physical Activities Participation

Please note: A regular physical activity is one that you participate in at least once a week and causes you to work up a sweat.

Use this chart to list **any/all organized SPORTS activities** (e.g., hockey, soccer, swimming, tennis), both individual and team, in which you regularly participate.

Name of Sport	Number of years participating	Level Rec League (R) or Competitive League (C)	Where University (U) and/or in the Community (C)

Use this chart to list **any/all organized NON-SPORT physical activities** (e.g., jogging, going to the gym, yoga), both individual and group, in which you regularly participate.

Name of Non-Sports Physical Activity	Number of years participating	Level Rec League (R) or Competitive League (C)	Where University (U) and/or in the Community (C)

For the remainder of the study, please choose *one* of the above activities (i.e., the activity that is most important to you) to think about when answering the remaining questionnaires.

Appendix B – Self- and Task-Perception Questionnaire

Instructions: Based on your current or recent involvement in your chosen activity please rate your level of agreement with the following statements. Please circle only one response (number) per item.

Expectations of Success	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
1. Compared to others, I am very good at my activity	1	2	3	4	5	6	7
2. I expect to do very well this year in my activity	1	2	3	4	5	6	7
3. I am very good at my activity	1	2	3	4	5	6	7
Attainment Value	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
4. It is very important for me to be good at my activity	1	2	3	4	5	6	7
5. I feel that, to me, being good at my activity is very important	1	2	3	4	5	6	7
6. I believe it is worth the effort to be good at my activity	1	2	3	4	5	6	7
Intrinsic Value	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
7. I really enjoy my activity	1	2	3	4	5	6	7
8. In general, I find my activity to be very	1	2	3	4	5	6	7

interesting							
9. In general, I find that I get a sense of excitement from my activity	1	2	3	4	5	6	7
Utility Value	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
10. I find what I learn while engaging in my activity to be useful for my life outside of my activity	1	2	3	4	5	6	7
11. I believe that my activity will be useful for my future career goals	1	2	3	4	5	6	7
12. I really enjoy the attention and recognition I get from engaging in my activity	1	2	3	4	5	6	7
Cost	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
13. I am really worried about getting injured from my activity	1	2	3	4	5	6	7
14. my activity costs too much money	1	2	3	4	5	6	7
15. I find that my activity takes up too much of my free time	1	2	3	4	5	6	7

Appendix C – Behavioural Measure of Physical Activity Participation Level

Instructions: Based on your current or recent involvement in your activity, please answer the following questions.

1. On average, how many days a week do you participate in your activity?

0 1 2 3 4 5 6 7

2. How long is an average session of your activity?

- ☐ Less than 15 minutes
- ☐ 15 to 30 minutes
- ☐ 30 to 45 minutes
- ☐ 45 to 60 minutes
- ☐ More than 60 minutes

3. In an average session, how much effort are you putting in?

No Effort											Maximum Effort
0	1	2	3	4	5	6	7	8	9	10	

4. How often do you skip sessions of your activity?

Never Often											Very
0	1	2	3	4	5	6	7	8	9	10	

Appendix D – SF-12 Health Survey

1. In general, would you say your health is:

- a. Excellent
- b. Very good
- c. Good
- d. Fair
- e. Poor

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:

- a. Yes, limited a lot
- b. Yes, limited a little
- c. No, not limited at all

3. Climbing several flights of stairs:

- a. Yes, limited a lot
- b. Yes, limited a little
- c. No, not limited at all

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities as a result of your physical health?

4. Accomplished less than you would like:

- a. Yes
- b. No

5. Were you limited in the KIND of work or other activities:

- a. Yes
- b. No

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:

- a. Yes
- b. No

7. Didn't do work or other activities as CAREFULLY as usual:
- a. Yes
 - b. No
8. During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework)?
- a. Not at all
 - b. A little but
 - c. Moderately
 - d. Quite a bit
 - e. Extremely

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS...

9. Have you felt calm and peaceful?
- a. All of the time
 - b. Most of the time
 - c. A good bit of the time
 - d. Some of the time
 - e. A little of the time
 - f. None of the time
10. Did you have a lot of energy?
- a. All of the time
 - b. Most of the time
 - c. A good bit of the time
 - d. Some of the time
 - e. A little of the time
 - f. None of the time
11. Have you felt downhearted and blue?
- a. All of the time
 - b. Most of the time
 - c. A good bit of the time
 - d. Some of the time
 - e. A little of the time
 - f. None of the time

12. During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?
- a. All of the time
 - b. Most of the time
 - c. A good bit of the time
 - d. Some of the time
 - e. A little of the time
 - f. None of the time

Appendix E – Rosenberg Self-Esteem Scale (RSE)

Instructions: Below is a list of statements dealing with your general feelings about yourself. Please Rate the degree to which you agree or disagree with each statement using the following scale.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I feel that I am a person of worth, at least on an equal plane with others.	1	2	3	4
I feel that I have a number of good qualities.	1	2	3	4
All in all, I am inclined to feel that I am a failure.	1	2	3	4
I am able to do things as well as most other people.	1	2	3	4
I feel I do not have much to be proud of.	1	2	3	4
I take a positive attitude toward myself.	1	2	3	4
On the whole, I am satisfied with myself.	1	2	3	4
I wish I could have more respect for myself.	1	2	3	4
I certainly feel useless at times.	1	2	3	4
At times I think I am no good at all.	1	2	3	4

Appendix F – SONA Recruitment Letter

Title: Exercise and sports participation: Understanding student motivations

Description: This study is focused on why university students participate in sports and exercise. Participants will first be asked to complete a background information questionnaire. Participants will then be asked to complete online surveys related to their experiences in sports and exercise, followed by several measures related to their general health and well-being of the individual.

Eligibility: Undergraduate students with current or recent participation in regular physical activity. A regular physical activity is one that you participate in at least once a week and causes you to work up a sweat.

Duration and Locale: Approximately 30 minutes, online.

Compensation: 0.25% toward PSYC1001, PSYC1002, PSYC2001, PSYC2002

Researchers: Adam Lewis, Dr. Anne Bowker,

This study has been approved by the Carleton University Ethics Committee for Psychological Research (15-018).

Appendix G – Informed Consent

Title: Exercise and sports participation: Understanding student motivations

The purpose of this consent form is to ensure that you understand clearly the purpose of the study and the nature of your involvement. This consent form should provide you with adequate information so that you may determine whether or not you wish to participate in the current study.

Research Personnel: Should participants have questions or comments about this study they may contact the principal investigators, Adam Lewis (AdamLewis@cmail.carleton.ca) and Dr. Anne Bowker, Associate Professor (anne.bowker@carleton.ca).

Purpose: The purpose of this study is to examine the motivations for regular participation in sports and exercise.

Task Requirements: As a participant of this study, you will be asked to complete a collection of online self-report questionnaires. You will be first asked to complete a background information questionnaire, and then will be asked to report on your experiences related to sports and exercise participation. You will also be asked about your general health and well-being, how you feel about the people in your life and how you feel about university. For all of these tasks, you can choose to “opt in” or “opt out” for each of these components.

Compensation: For participating in this study you will receive a 0.25% course credit towards PSYC1001 or 1002, PSYC2001, PSYC 2002.

Potential Risk and Discomfort: The study will take approximately 30 minutes to complete. There is no physical risk associated with participating in this study. However, when answering personal, sensitive questions about themselves, some individuals may experience discomfort. If you feel distress or discomfort at any time during the study you may choose not to answer a question or withdraw from the study without explanation or penalty.

Anonymity/Confidentiality: All responses are treated as confidential, and in no case will responses from individual participants be identified. To ensure anonymity and confidentiality, each participant will be assigned an ID number that will replace identifying information in the data set. Names and ID numbers will be kept in a separate location from the data set on a password protected computer in a locked office and only the research assistants will have access this information. For all phases of this study, participants will remain anonymous to the principal investigators.

Please note that we collect data through the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and password protected storage). Please note that Qualtrics is hosted by a server located in the

USA. The United States Patriot Act permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Retention of Raw Data and Personal Identifying Information: At the end of the data collection period, all personal identifying information files will be destroyed. The raw data files, which contain no personal information, will be kept indefinitely for use by the principal investigators.

Right to Withdraw: Participation is completely voluntary and refusal to take part in the study involves no penalty. Participants may also withdraw from the study at any time without penalty or loss of compensation (i.e., SONA participants – a 0.25% course credit towards PSYC1001 or 1002; PSYC2001, PSYC2002)

If you have ethical concerns about the current study, please contact Dr. Shelley Brown, the chair of the Carleton University Ethics Committee for Psychological Research, at 613-520-2600 x 1505, or at Shelley.brown@carleton.ca. Participants with questions or concerns may also wish to contact Dr. Joanna Pozzulo, Chair of the Psychology Department at Carleton University, at (613) 520-2600 ext. 1412 or at psychchair@carleton.ca.

I voluntarily consent to participate in this study, and in agreeing below, affirm that I have read and understood the purpose and expectations of the study. Should I wish to withdraw from participation in the study at any time, I am aware that I will not be penalized in any way and will still receive the compensation as described above.

Please click on the “I Agree” button if you would like to consent to participate in Phase 1 of this study. If you choose not to participate at this time, please click on the “No Thank-You” button below.

I AGREE

NO THANK-YOU

This study has been approved by the Carleton University Ethics Committee for Psychological Research (15-018).

Appendix H – Debriefing

Title: Exercise and sports participation: Understanding student motivations

Researchers: Adam Lewis, Dr. Anne Bowker, Associate Professor, Carleton University

Thank you for taking the time to participate in this study. Your participation is very much appreciated.

What are we trying to learn in this research?

Through this research we hope to better understand what motivates university students to choose to participate in sport and exercise and what health and social benefits can be derived from regular participation. Furthermore, it is of interests to the researchers, whether regular participation in sport has benefits above and beyond those of general physical activity.

Why is this important to scientists or the general public?

More research is needed on the topic of university students and sports participation. Previous research has focused on child and elderly populations, leaving a gap in the research that this study is attempting to fill. There is a large decline in sports participation rates as individuals enter their early twenties. Obviously, this is a large transition period when individuals are going off to post-secondary school or entering the workplace, but still, this drop is concerning and this study is interested in investigating the factors that are affecting participation. It is the hope of the researchers that the information obtained will become a valuable resource for individuals, coaches, and organizers to help increase participation rates.

If you experience any discomfort or distress following your participation in this research, please feel free to contact Carleton University Health and Counselling Services, 520-6674 or Distress Centre of Ottawa and Region, 238-3311.

Suggestions for further research information

If you would like to learn more about this subject, we encourage you to read any of the following references:

Canadian Heritage (2013). Sport Participation 2010: Research Paper (Catalogue number CH24-1/2012E-PDF). Retrieved from the Government of Canada Publications website
<http://www.publications.gc.ca/site/eng/434212/publication.html>

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Kinetics, Champaign, IL. Retrieved from
<http://search.proquest.com/docview/622097969?accountid=9894>

Should you have any questions or concerns regarding the current research, please contact the principal investigators, Adam Lewis (AdamLewis@cmail.carleton.ca), Dr. Anne Bowker (anne.bowker@carleton.ca)

If you have ethical concerns about the study, please contact the chair of Carleton University Ethics Committee for Psychological Research, Dr. Shelley Brown, at (613-520-2600 x 1505, or at Shelley.brown@carleton.ca. Participants with questions or concerns may also wish to contact Dr. Joanna Pozzulo, Chair of the Psychology Department at Carleton University, at (613) 520-2600 ext. 1412, or at psychchair@carleton.ca.

Thank you for your participation in our study!

Appendix I – Tables of sports and exercises chosen by participants

Sports	Frequency	Percent
BADMINTON	5	1.5
BASEBALL	3	.9
BASKETBALL	15	4.6
BIATHLON	1	.3
CHEERLEADING	9	2.7
CHESS	1	.3
CIRCUITE TRAINING	1	.3
FIELD HOCKEY	2	.6
FIGURE SKATING	5	1.5
FOOTBALL	3	.9
GOLF	1	.3
HOCKEY	24	7.3
HORSEBACK RIDING	5	1.5
ICE SKATING	1	.3
JIU-JITSU	1	.3
KARATE	2	.6
KRAV MAGA	1	.3
MOUNTAIN BIKING	1	.3
NORDIC SKIING	1	.3
PARALYMPIC TRACK N FIELD	1	.3
RINGETTE	3	.9
ROCK CLIMBING	1	.3
ROWING	2	.6
RUGBY	6	1.8
SNOWBOARDING	1	.3
SOCCER	46	14.0
SWIMMING	10	3.0
TAEKWON-DO	1	.3
TARGET SHOOTING	1	.3

TENNIS	2	.6
TRACK	1	.3
ULTIMATE FRISBEE	1	.3
UNDERWATER HOCKEY	1	.3
VOLLEYBALL	14	4.3
WHITEWATER KAYAKING	1	.3
WINGCHUN	1	.3
WRESTLING	1	.3
Total	176	53.7

Exercises	Frequency	Percent
ALPINE SKIING	1	.3
AT HOME WORKOUTS	1	.3
BIKING	1	.3
CROSS-FIT CLASS	1	.3
CROSSFIT	1	.3
CYCLING	1	.3
DANCE	20	6.1
GYM	67	20.4
GYM CLASSES	1	.3
HIIT	1	.3
HOT YOGA	1	.3
JOGGING	30	9.1
KICKBOXING	2	.6
PILATES	1	.3
ROLLERBLADING	1	.3
SKIING	1	.3
TREADMILL	1	.3
WEIGHTLIFTING	5	1.5
YOGA	14	4.3
ZUMBA	1	.3
Total	152	46.3