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The Physical activity patterns and constraints of diverse female college students

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THE PHYSICAL ACTIVITY PATTERNS AND CONSTRAINTS
OF DIVERSE FEMALE COLLEGE
STUDENTS

by

Kathleen Victoria Minkel

Bachelor of Arts, Sociology
San Diego State University
2007

A thesis submitted in partial fulfillment
of the requirements for the

Master of Science in Sport and Leisure Service Management
Department of Sport and Leisure Studies
William F. Harrah College of Hotel Administration

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Kathleen Victoria Minkel

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ABSTRACT

The Physical Activity Patterns and Constraints of Diverse Female College Students

by

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Diverse college aged females from a public university in the southwest were asked to participate in an online survey to determine their constraints to physical activity, as well as their current activity level. The groups were compared to establish the differences among the minority groups. Raymore, Crawford, and Godbey's Hierarchical Model of Constraints was used as a framework when creating the survey. Data analysis showed only one significant difference among the racial/ethnic groups, when looking specifically at the intrapersonal, interpersonal, and structural constraints categories. Hispanic women differed significantly from Caucasian women in their perception of interpersonal constraints on their physical activity. This finding should be further investigated to completely understand the cultural aspects that may lead to interpersonal constraints. No other significant differences among the racial/ethnic groups and their perceptions of physical activity constraints were found. No differences were found among the racial/ethnic groups and their physical activity level. The research suggests physical activity level and constraint differences among ethnic groups may be less prevalent among populations with similar socio-economic status, education, and motivation.

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CHAPTER 1

INTRODUCTION

What constrains people in their efforts to be physically active is a significant concern to those in the recreation and leisure industry. Although many factors contribute to a healthy population, physical activity has been increasingly recognized as key to living a long and healthful life. Moderate physical activity on most days of the week has been found to reduce the risk of health problems, such as, cardiovascular disease, stroke, hypertension, type two diabetes, osteoporosis, obesity, colon cancer, breast cancer, anxiety and depression (Haskell et al., 2007). Yet most Americans do not meet the recommended guidelines for physical activity (Haskell et al.). In recent years, research has been strongly driven by factors that relate to this problem of inactivity, exposing constraints and barriers to physical activity.

Leisure constraints can prevent individuals from participating in activities. They come in a variety of forms that include internal and external factors. Raymore, Godbey, Crawford, and von Eye (1993) described leisure constraints as, “factors that limit or inhibit participation in a given leisure pursuit” (p 99). Since the 1970’s, researchers have studied the plethora of reasons why people decide not to participate in certain leisure activities (Green, & Hebron, 1989; Jackson, 1988; Washburne, 1978; Woodard). Previous research has also examined constraint differences between men and women, with some looking at the differences between racial/ethnic groups (Dattilo, Dattilo, Samdahl, & Kleiber, 1994; Jackson & Henderson, 1995; Philipp, 1995, 1997; Shaw, 1994; Shiness, Floyd, & Parry, 2004). Cost and time obligations were found early on as the most commonly reported constraints to leisure participation across all gender and

racial/ethnic groups (Jackson, 2000). Although, there are important differences between racial/ethnic groups, leisure research in the last decade has primarily focused on the differences between genders.

The Hierarchal Model of Leisure Constraints has helped expand constraints research to all areas of recreation and leisure through its application to subgroups of society. Crawford, Jackson, and Godbey (1991) created the model of leisure constraints which looks at the different psychological processes and areas of perceived constraints. In this model, leisure constraints are split into three areas, intrapersonal, interpersonal and structural, each representing their own specific barriers and processes of negotiation. The Hierarchal Model of Leisure Constraints proposes constraints can keep individuals and groups from participating in desired leisure activities (Crawford et al., 1991). The model is arranged in a hierarchal manner; progress towards a physically active lifestyle is made by overcoming one barrier at a time. This is done through the negotiation of individual constraints.

Intrapersonal constraints, which are psychological barriers to participation, can affect an individual's leisure preferences without their awareness of the constraint (Crawford et al., 1991). Interpersonal constraints consist of a lack of leisure companions or options, and can be caused by moving to a new town or a lack of information about leisure activities (Crawford et al.). Structural constraints result from barriers that lie outside of the individual, such as lack of transportation or facilities (Crawford et al.). The ability to negotiate constraints is different for each person and may be related to their desire or motivation to participate in the activity (Jackson et al., 1993). While heavy constraints may prohibit some from participation altogether, other individuals may

instead alter their original plans to maintain participation. It has been found those who do participate in leisure activities are not entirely without constraint, but they may have negotiated constraints in order to participate (Jackson et al., 1993).

Further research has used comparison models to look more closely at what constrains different groups of people in their leisure. Researchers have examined the differences between men and women in their efforts towards participation in leisure activities (Jackson & Henderson, 1995). This research has universally found that women are more constrained than men due to factors such as family obligations, perception of physical ability, transportation, and leisure partners (Jackson & Henderson). Body image is also a large component to the constraints perceived by women, yet rarely are found in men (Liechty, Freeman, & Zabriskie, 2006). Other studies have looked closely at the differences between racial/ethnic groups and their perceived constraints to participation (Philipp, 1995, 1997).

Much of the research conducted on minority groups has utilized only African Americans making the results somewhat inconclusive and contradictory (Shinew, Floyd, & Parry, 2004). African Americans have been found to encounter more constraints than Caucasian men and women, yet the opposite trend has also been found, leaving room for further investigation in this area (Shinew et al.). More recently studies have been conducted on a variety of other minority groups such as Middle Eastern, Asian and Hispanic families (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007; Eyler et al., 2002; Scott, Lee, Ji-Yeon Lee, & Kim, 2006). This extended research is giving recreation and leisure professionals a better view of what factors constrains our society.

There are many factors that have been found to predict physical activity participation (Garber, Allsworth, Marcus, Hesser, & Lapane, 2008). Young age, good general health, and exercise self-efficacy are strong predictors of heavy participation in physical activity (Eyler, et al., 2003). Other factors which correlate with physical activity participation include gender, higher education, race/ethnicity, socioeconomic status and occupational status. Overall, women and those without a college education were more likely to live a sedentary lifestyle. Acculturation was also found to strongly correlate to physical activity; higher levels of acculturation often lead to greater participation. Socioeconomic or occupational status has also been looked at to predict physical activity (Garber et al. 2008; McArthur & Raedeke, 2009). Although many factors can predict physical activity, a majority of the studies conducted thus far have focused on adult Caucasian males, frequently leaving out diverse populations and women (McArthur & Raedeke, 2009). Women, specifically those in the habit forming stage of life, known at young adulthood, should be a high priority for constraint research.

Statement of the Problem

It has been well-researched that a sedentary lifestyle can lead to a multitude of health problems (Scott et al., 2000; Haskell et al., 2007). While leisure constraint research is now an established area of scholarship, it is this real life consequence which is of great societal concern. If left un-negotiated, constraints to physical leisure activities can become the foundation for a sedentary lifestyle, sending individuals down a path of future health problems. This is why targeting specific populations and exploring the variables that constrain them in their pursuit of physical activity is important.

In 2007, the Center for Disease Control and the American College of Sports Medicine (CDC/ACSM) published physical activity guidelines for Americans (Haskell et al., 2007). The recommendations included moderate physical activity most days of the week or vigorous physical activity three days a week, as well as weight-lifting. Unfortunately, most Americans do not meet these recommendations (Scott, Morrow, Jackson, & Dunn, 2000). The most recent statistics on physical activity show less than half of men and women within the United States are meeting the ACSM/CDC guidelines (Scott et al.). It was recently found that 55% of college students also fall under the recommended levels of physical activity (American College Health Association, 2008). Because physical activity has been found to drop significantly between adolescence and adulthood, young adulthood has been found as a critical transitional period. "It is important therefore to monitor trends in physical activity in young adults, and to understand factors such as attitudes and knowledge of health benefits that may be associated with activity levels" (Haase, Steptoe, Sallis, & Wardle, 2004, p.182).

Becoming involved in campus leisure activities can help create highly developed, well-rounded students. Studies have shown that participation in recreational sport and fitness may contribute to a student's success in areas of learning, development and persistence (Belch, Gebel, & Maas, 2001). Undergraduate and graduate students who utilized the campus recreational sport facilities and programs have reported higher levels of perceived benefit in personal development (Belch et al., 2001). Campus recreation centers provide students with an outlet for physical activity, as well as a place for socialization and personal growth. Sanford (1966) proposed that every society creates institutions to socialize its members and to change them for the better. Universities have

been given this challenge, to take young adults for a small period of time and develop them into progressive agents for the benefit of society. This includes development in the areas of wellness, leisure, health, and physical activity.

Purpose of Study

The purpose of this study is to investigate the factors that constrain the physical leisure activity of female university students. Past research has shown this group to be constrained in their physical leisure participation; understanding their constraints will guide recreation and leisure professionals as well as university officials in the creation and promotion of activities more suited for their lifestyles and needs.

Research Question: What constrains the physical leisure activity participation of female university students?

Hypothesis 1: There are no differences in physical activity levels among female university students of different racial/ethnic backgrounds.

Hypothesis 2: There are no differences in intrapersonal, interpersonal, and structural constraints to physical leisure activity among female university students of different racial/ethnic backgrounds.

Hypothesis 3: There are no differences in the intrapersonal constraint of body image to physical leisure activity among female university students of different racial/ethnic backgrounds.

Definition of Terms

Leisure: There is a lack of consensus within leisure research on the exact definition of leisure. Shaw (1985) describes the leisure experience as including “enjoyment, freedom of choice, relaxation, intrinsic motivation and the lack of evaluation...although no one dimension can be equated with the leisure experience” (p.22).

Leisure Constraints: “Forces within people’s lives that must be negotiated if leisure involvement is to occur...Although constraints may result in nonparticipation, this may be only one of many outcomes that are possible. People may instead, modify their behavior to maintain a pattern of sustained involvement” (Scott, 1991, p. 323).

Gender: “Gender does not just refer to whether one is biologically male or female, but encompasses the social expectations and cultural definitions associated with one’s biological sex” (Jackson & Henderson, 1995, p 32).

Racial/Ethnic Groups: “Race implies a biologically distinct group, that is, one that has a relatively large percentage of genes in common by descent. Ethnic implies a culturally distinct group. Quite frequently, biological and cultural homogeneity overlap or coincide, for example, in minorities of color and in linguistic and religious groups who share a common ancestry” (Seefeldt, Malina, & Clark, 2002, p. 145). Racial/ Ethnic will be used in this study as the literature often uses both terms for group designations.

Acculturation: “In the most general terms, acculturation can be defined as ‘the process of cultural change and adaptation that occurs when individuals from different cultures come into contact’ (Gibson, 2001, p. 19).

Moderate Physical Activity: Activities which expend 3.0 to 5.9 times the amount of energy expended at rest. Examples of moderate physical activities include, walking

briskly, water aerobics, tennis (doubles), and gardening (U.S. Department of Health and Human Services, 2008).

Vigorous Physical Activity: Activities which expend 6.0 or more times the energy expended at rest. Examples of vigorous physical activities include, jumping rope, hiking uphill, swimming laps, jogging or running, and aerobic dancing (Scott, Morrow, Jackson, & Dunn, 2000).

CHAPTER 2

LITERATURE REVIEW

Introduction

Physical activity, while known to be healthful and enjoyable, is often left out of many Americans' daily routine. Active, challenging, enjoyable leisure lifestyles have the potential to contribute to personal and societal well-being (Carruthers & Hood, 2007). Yet in every community men and women are opting out of healthful activities for sedentary lifestyles that can negatively affect their physical and psychological health (Buckworth & Nigg, 2004). Due to this lack of participation in enjoyable leisure activities, a large amount of research has been focused on what constrains individuals as well as groups (Gyurcik, Bray, & Brittian, 2004; Jackson & Henderson, 1995; Kilpatrick, Herbert, & Bartholomew, 2005). Previous research has examined very specific subgroups in our society, as well as broad demographics such as men and women. Together this collection of studies gives a comprehensive look of how leisure constraints are viewed today.

Research has shown lower income women have the most perceived constraints to leisure, yet every group suffers from not meeting the recommended physical activity guidelines (Colley, 1984; Searle & Jackson, 1985). Negotiation and motivation are two variables of leisure constraints research that create variety in how an individual or group experiences leisure activities. Leisure participation does not insinuate a lack of constraints, but rather the individual's ability to negotiate their specific constraints (Jackson, Crawford, & Godbey, 1993). The negotiation of constraints is considered the "proactive" approach to leisure participation; while those who do nothing and accept their

constraints are taking on a more “reactive approach” (Jackson et al.). Leisure participation involves a balancing act of constraints and an individual’s motivation to participate (Jackson et al.). Proper negotiation skills can help keep the correct balance. It is a difficult task to understand the nature of why people participate in some activities but avoid others. In the last decade successful models have been able categorize and label individuals’ constraints to leisure participation, allowing researchers to more clearly see the dynamic between various constraints and the influencing variables.

History of Leisure Constraint Research

The original leisure constraints research was conducted in the early 1980’s and focused on participation, nonparticipation and the barriers that intervened. Romsa, Hoffman, Witt, Goodale, Boothby, Framcken, and van Raaij collectively created the foundation for future leisure constraint research (Jackson, 1983). This early research looked at who participated in leisure activities and who did not, as well as how family context and socioeconomic status affected their participation (Jackson, 1983). This research was often inconsistent as each investigator utilized different barriers and constraints items and different methods of data collection. This problem of inconsistency was not addressed for at least another decade. Theoretical frameworks and explanations were often left out of these early discussions. Commonly reported barriers and the demographics of leisure participation were the center of many studies. Reported barriers to participation differed from study to study, but the most commonly reported were lack of interest in activity, time, money, facilities, opportunities, and skills/abilities (Jackson, 1983).

As progress was made in leisure research, various dimensions of constraint were roughly being formed. The idea of grouping barriers together to create a systematic construction of constraints categories was a novel idea at the time, but not advised by all. Jackson (1988) warned against the classification of barriers and expressed concern that it would obscure important differences between groups. Eventually, despite the concern, a number of classifications were created. The most common classification at the time was internal versus external barriers (Jackson, 1988). Looking specifically at where the barriers originated, internal to the individual or imposed on them by external factors, advanced leisure research into the theoretical realm (Jackson, 1983).

Other concepts that came about to help researchers explain participation and nonparticipation included: intervening versus antecedent barriers, blocking versus inhibiting barriers, permanent versus temporary barriers and, intrapersonal and interpersonal and structural constraints (Jackson, 1998). It wasn't until the efforts of multiple researchers came together to create a single unified model that leisure research reached the level of sophistication required for understanding the leisure of groups and individuals (Jackson, 1998). Crawford, Jackson, and Godbey (1991) combined their previous efforts creating the Hierarchal Model of Leisure Constraints, systematically altering and progressing leisure research. This framework allowed researchers to look closely at "how people encounter, experience and respond to an array of constraints that influence leisure behavior" (Jackson, 1993, p 130).

Hierarchical Model of Leisure Constraints

When Crawford et al., (1993) successfully integrated multiple constructs into one inclusive constraints model, leisure research was progressed into a new era of

categorization. Their model looks at three areas of constraint independently, while also integrating them together into a loose hierarchy. Created from the integration of two early conceptual classifications, the new model took the constraint categories from Crawford and Godbey's (1987) research and combined it with Godbey's (1985) idea that barriers to leisure participation existed within a hierarchy (Jackson, 1993). The hierarchical model of leisure constraints explains how individuals are constrained psychologically, socially and physically by factors of which they may or may not be aware. The model looks closely at participation and non-participation, as well as why either choice is made by an individual. The three variables integrated into this model include intrapersonal, interpersonal and structural constraints. Together these three constraints categories create a comprehensive view of how an individual is constrained in their leisure.

Intrapersonal constraints are those constraints which are psychological in nature. They exist in one's mind and can be shaped and influenced by an array of factors. How a person is raised, their experiences, and opportunities can all shape the intrapersonal constraints they perceive and how they deal with those constraints. According to Crawford et al. (1991), "Intrapersonal constraints on leisure participation are conceptualized as being the most powerful, due to the fact that they condition the will to act, or motivation for participation" (p. 314). Intrapersonal constraints can include poor body image, a lack of self esteem, feeling uncomfortable, religious beliefs or feeling self-conscious during participation. Intrapersonal constraints are extremely important to identify and negotiate, as they can alter a person's perspective of what they desire as well

as their perceived abilities (Jackson et al., 1993). Intrapersonal constraints are a pressing issue in the leisure of women, in particular.

Interpersonal constraints are the result of interactions with other people; this includes not having a partner for companionate leisure activities (Crawford et al., 1991). Constraints of this type are common for individuals new to a community or those who have recently immigrated. Interpersonal constraints can also affect newly married couples who prefer different companionate activities. A lack of partners in a desired activity can bring upon unforeseen constraints, such is the case with bridge players (Scott, 1991). Negotiation strategies found to overcome this constraint to playing bridge included acquiring more information on opportunities to play, increasing one's skill level to increase the player pool, and altering the scheduled games to appease time conflicts and again increase the player pool (Scott).

Lastly, structural constraints can include factors such as a lack of time, financial resources, transportation, or facility availability (Crawford et al., 1991). Structural constraints are usually the easiest to identify and therefore the most commonly reported. Several studies have looked at the correlations between availability of facilities or recreation areas and participation. The density of exercise facilities was found to correlate to the percentage of physically active individuals, showing that if you live near recreation facilities you may be more likely to participate (Sallis et al., 1990). Structural constraints, although reported most often, are seen as the most negotiable of the three constraint categories. Lack of financial resources is a commonly reported structural constraint, but has been found to be negotiated through saving, reducing participation,

researching cheaper options, and making concessions elsewhere (Kay & Jackson, 1991). Effective negotiation is the key to overcoming structural constraints.

The three categories of leisure constraints do not work independently of each other. It is likely one constraint will effect or alter another constraint area. This was found by Scott (1991) when studying bridge players and group interactions. He found that the lack of interest in bridge, an intrapersonal constraint, caused a low number of opponents and opportunities to play for those involved, a structural constraint, and lastly the small number of players created scheduling problems for those involved, an interpersonal constraint (Scott). Constraints can also intertwine when an individual perceives interpersonal or structural constraints to be nonnegotiable (Jackson et al., 1993). Believing you cannot negotiate a constraint may lead to lower motivation and a lack of desire to participate. Successful negotiation of a leisure constraint relies on the individual's desire and motivation to participate, the strength of the leisure constraint, and the self efficacy of the individual which would come from prior successful negotiations (Jackson et al., 1993). Participation in physical leisure activities does not mean those individuals are constraint free, it merely shows they have successfully negotiated their constraints.

Much of the leisure constraint research looks at the constraints of specific groups within society including those based on gender, age, income, and ethnic/racial group. The constraints experienced by each demographic group can differ greatly, so it is important to understand how one group may be constrained differently than another. Women have consistently been found to be more constrained in their leisure pursuits than men. There are many social, historical and psychological reasons for this difference.

The perception of more and greater leisure constraints by women makes them an important focus of future constraints research.

Gender Leisure Differences

Expanding leisure research to incorporate a variety of different groups has helped build a dynamic and ever growing body of knowledge. This research is beginning to provide insight into the constraints, preferences and motivations of various groups (Jackson, 1988). Historically, leisure research was conducted only on white males of the middle class; this group was the standard for which research was based (Jackson). Leisure researchers soon found activities were often segregated based on the domestic division of labor, with women participating in activities within the household and men outside the home. Leisure activities considered to be male activities included carpentry, fixing cars, darts, fishing and football (Colley, 1984).

Throughout the decades leisure research has shifted to an all encompassing field, but not without its early fallbacks, such as the exclusion women and minorities. In the 1940's through the early 1980's very little was written about the leisure of women (Henderson, 1994). This was not a failing of just the leisure research field, as the research of other disciplines also omitted any reference to the experiences of women. While analyzing the different perspectives of women's leisure research over the years, Henderson modified Tetreault's five common stages of scholarship about women to coincide with historical leisure research (Tetreault, 1985; Henderson, 1994). The modified phases of research developed by Henderson included: invisible scholarship, compensatory scholarship, dichotomous differences scholarship, feminist scholarship and gender scholarship. In the earliest leisure research many believed the male experience

was universal and could be generalized to all human beings. This idea of the male experience transferring to all people is what Henderson considers the “invisible scholarship” era. Before this era women were nonexistent within research as were minorities, people with disabilities, gay and lesbian people and those of lower socioeconomic status.

The “compensatory scholarship” era of leisure research relied on the realization that women were missing from the current research. Some effort was made to include them in studies. This research mostly examined how women were viewed within common recreation and leisure positions or how they rated against typical standards set for male counterparts (Henderson, 1994). Little information relating to the unique leisure experiences of women came about until the “dichotomous differences scholarship,” which was based specifically on the biological sex differences of men and women and how it affected their leisure (Henderson). Much of this research looked closely at specific differences between the activities in which men and women participated. Colley (1984) found that society as a whole found knitting, needlework, shopping, and jogging as common leisure activities of women. This type of research helped to acknowledge women as an important part of leisure research (Henderson).

Feminism played a very important role in expanding the leisure research on women. “Feminist scholarship” consisted of women centered research; it did not compare men and women but looked at the leisure experiences of women individually and the role leisure played in their lives (Henderson, 1994). Wearing and Wearing (1988) took the first step in promoting women’s leisure when they went against the stereotype that leisure was inappropriate for women. At this time leisure was seen as a construct of three

aspects, time, activity and experience. When looking specifically at women they found that those who worked did not have time for leisure. When they were not at work they were taking care of the household and family. This showed researchers that, the familial construct of our society was denying women of most or all intrinsic leisure experiences (Wearing & Wearing).

The dominant model today, is that of “gendered scholarship” (Henderson, 1994). Leisure research based on gender is concerned with how gender, as a social construct, is interpreted and used to analyze the behaviors of men and women. Gender is a complex combination of biology and societal norms; “Gender does not just refer to whether one is biologically male or female, but encompasses the social expectations and cultural definitions associated with one’s biological sex” (Jackson & Henderson, 1995, p 32). Within leisure research, gendered theories have been shaped based on the activities and psyche of men and women. This includes the patriarchy theory, which was founded on the idea that historical male dominance still affects the choices and freedoms of women today (Jackson & Henderson).

Constraints

In the last decade, the leisure constraints of women have been extensively studied. The findings often conclude that women are more constrained in their leisure pursuits than men (Jackson & Henderson, 1995). The constraints that are reported by women are often also reported by men, but have much greater impact on women’s leisure (Jackson & Henderson). These constraints include the constraints of time, money, and opportunity that surfaced in the earliest constraints research (Shaw, 1994).

Family care and household obligations are also commonly found to be constraining factors to the leisure of women. The ethic of care with which women are ingrained has been found to create a lack of a sense of entitlement to leisure (Shaw, 1994). This constraint is linked to women taking on the role of primary caregiver within the family unit and seems to be unique to women (Henderson & Bialeschki, 1991). The leisure of women is often associated with that of the family including activities centered on the children (Wearing & Wearing, 1988). A lack of a sense of entitlement within women can be traced back to the traditional patriarchal society (Shaw, 1994). More recently, Jackson and Henderson (1995) found that women were more constrained by family commitments, perception of physical abilities, transportation and knowing where to participate in leisure activities. Transportation as a constraint to leisure activities can be linked to the lower incomes and socioeconomic status of women (Shaw, 1994). Crawford, Jackson and Godbey (1991) found a strong relationship between lower socioeconomic status and level of constraints, which disproportionately affects women.

The leisure time of women is more highly constrained than men (Jackson & Henderson, 1995). Physical activity is one leisure area that can be constrained. The lack of negotiation of physical activity constraints can lead to a sedentary lifestyle and have profound effects on the health of women (Haskell et al. 2007). The view that physical activity is a male specific activity has promoted the gender stereotypes that were introduced years ago. Buckworth and Nigg (2004) found men to be more physically active than women in college. They also reported that as women get older their physical activity levels steadily drop; this coincides with research on women during the transition from high school to college (Gyurcik, Bray, & Brittan, 2004). This difference in

participation levels may be due to motivation, as men and women are motivated differently. Men are commonly motivated to participate in physical activity by challenge, competition, social recognition and strength, while women are highly motivated by appearance management (Kilpatrick, Herbert, & Bartholomew, 2005).

Other constraints that are seen disproportionately in women include poor self esteem and poor body image (Shaw, 1994). Low self-esteem is seen more often in females than males, and can negatively affect their perception of intrapersonal and interpersonal constraints (Raymore, Godbey, & Crawford, 1994). Intrapersonal constraints are an important issue of leisure research on women, as they have the capability to alter an individual's preference and motivation without their awareness (Raymore et al.). Our society today has created a view of beauty that is instilled in women and has altered their leisure choices. This "beauty myth" and the negative body image ramifications can have drastic effects on the self-esteem and quality of life for women (Shannon & Shaw, 2008). Negative effects of poor body image within women have stirred a frenzy of research. Eating disorders, depression, and a lack of enjoyment in daily activities have all been associated with poor body image.

Body Image Constraints

Body image is a constraint many women must negotiate in their pursuit of physical leisure activities. Body image is closely related to self-efficacy, peer perceptions and physique anxiety, and can become highly constraining for those who do not feel they meet societal standards. "Body image is a multidimensional construct; it can be defined as a mental construction of oneself or as a degree of satisfaction with one's current physical self" (Choi, Leshner, & Choi, 2008, p 148). Dissatisfaction with one's

body is a strong determinant of whether women will chose to participate in leisure activities (Liechty, Freeman, & Zabriskie, 2006). In 1995, a study showed that 65% of women were dissatisfied and 49% felt preoccupied by body weight (Cash & Henry, 1995). Dissatisfaction and preoccupation may lead to intrapersonal leisure barriers within women of all ages. The effects of poor body image can be seen through low leisure participation (Strelan, Mehaffey, & Tiggerman, 2003).This connection makes studying body image and leisure constraints all the more important.

Concerns about appearance in leisure time activities are not reserved for the disordered few; a large segment of women in our society alter their leisure behavior in this way (Liechty, Freeman, & Zabriskie, 2006). Values of beauty, learned during childhood have a significant effect on the attitudes and behaviors later in life (Shannon & Shaw, 2008). Mothers are strong socializing agents for their daughters in regards to leisure time activities and their views on beauty (Shannon & Shaw). Other aspects of life that affect the body image and dissatisfaction of women today are peers and the media. Peer influences on body shape are instilled throughout life; the constant comparison between close friends has caused problems for many girls (Paxton, Schutz, Wertheim, & Muir, 1999). The media has also played a large role in the negative body image of women. Television typically shows women in stereotypical roles and emphasizes physical appearance, sending messages to women throughout their lives of what society believes they should look like (Shaw, 1994).

College-aged women are likely to suffer from intrapersonal constraints in their leisure choices. This is due to the prevalence of negative body image found in this age group (Liechty et al., 2006). The older women get, the more satisfied they become with

their bodies. One explanation for this greater satisfaction is that older women have already gone through many years of failed attempts to reach the ideal body image and have learned to accept themselves (Segar, Spruijt-Metz, & Nolen-Hoeksema, 2006). College students often exercise or participate in leisure activities for body shape or appearance reasons; this external motivation can negatively affect body dissatisfaction and body esteem (Strelan et al., 2003). Not all women suffer from the same degree of intrapersonal constraints, many cultures are more or less accepting of females contributing to their perceptions of themselves. This is seen in some minority cultures and will be discussed further.

Racial/Ethnic Leisure Constraint Differences

Many studies have shown conflicting data concerning the perceived leisure constraints and preferences of racial/ethnic groups. Shiner, Floyd and Parry (2004) found that Caucasians consistently reported more constraints than their African American counterparts. Time, planning activities, and family commitments were found to constrain Caucasians more frequently than African Americans. Lighting of outdoor areas, location, transportation and maintenance of the areas were also factors that inhibited Caucasians from participating in desired activities (Shiner et al.). In 1998, Arnold and Shiner also found greater leisure constraints in Caucasians than African Americans in relation to the use of public parks. Conversely, Woodard (1988) found that African Americans were more highly constrained in their leisure pursuits than Caucasians, and that fear of discrimination and prejudice could be a factor. Woodard also found that African Americans prefer household leisure activities more than Caucasians, due to their communal nature and low cost. Other constraints found within the African American

community include feeling unwelcome and uncomfortable participating in some leisure activities, lack of time and space to participate, job demands, as well as economic factors (Philipp 1995; Henderson, & Ainsworth, 2001). It has also been found that African Americans prefer urban activities to outdoor activities (Washburn, 1978).

There are three theoretical explanations used to explain the differences found in leisure preferences: the marginality theory, ethnic-socialization theory, and prejudice-discrimination theory (Phillip, 1995). Each one is unique and imperative to understanding the constraints and preferences of groups and individuals in our diverse society (Philipp). The marginality theory refers to the historical inequality of resource allocation to minorities (Stodolska, 1998). This historical inequality could be an important difference in the constraints of racial and ethnic minorities. The ethnic-socialization theory examines how individuals within minority groups live, including their values and standards. This theory reflects the idea that the differences in the socialization of racial/ethnic minorities create the differences in leisure preferences and constraints. Marginality and ethnicity theories have dominated the research in recreation and leisure, but in the early 90's the prejudice-discrimination theory became an important component to this research. The prejudice-discrimination theory looks specifically at how "leisure preferences and participation patterns have been influenced by present or historic patterns of racial discrimination" (Philipp, 1995, p 118). Much of the research on the leisure constraints of minority groups has reflected these theories.

Philipp (1995) looked closely at the differences between African Americans and European Americans in their levels of comfort and the appeal of leisure activities. Using twenty predetermined activities and a random sample of middle class families, he found

that the two groups significantly differed on the appeal and comfort levels of most activities. Sixty percent of the leisure activities were found to be significantly different between the two groups in both appeal and comfort. The two groups reported different levels of appeal and comfort in: camping in the mountains, bicycling, picnicking, going to zoos, going to the beach, dining out, and attending festivals, snow skiing, going to country clubs and going to museums. Going to fairs and going to the mall were the only two activities where African Americans were found to be more comfortable than European Americans.

The levels of appeal for the various leisure activities also differed between European Americans and African Americans. African Americans preferred fishing, watching TV, going to fairs, attending sporting events and going to the mall while European Americans preferred camping in the mountains, going to the beach, going to the zoos, bicycling, dining out, snow skiing and going to museums (Philipp). These factors can play a large part in constraining individuals and should be considered when creating programs and facilities. Racial/ethnic group preferences can also lead to the misinterpretation of constraints, making it important to take appeal into consideration when researching how a group is constrained in their leisure efforts. When adding intrapersonal constraints to the equation, minority women may not feel certain leisure activities appropriate for them, making it difficult to differentiate between preference and constraint.

Although leisure research has progressively expanded, the research on minorities is still somewhat inconclusive and insufficient. Research on the differences between minority groups and how they spent their leisure time began emerging in the early 70's.

Until recently, though most of the research focused primarily on the preferences and constraints of Caucasians versus African Americans (Woodard, 1988). More recently research on has emerged on a variety of racial/ethnic groups. A cross-cultural study on the constraints to participation in leisure activities of Iranian women found that the lack of structure and opportunities in their communities were their largest constraints (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007). This study looked closely at women living in Iran. Religious and cultural differences were taken into consideration when they surveyed the women on their community structure, home expectations, economics, social security, cultural leisure significance, personal time, companions, and traditions. Less than 7% of the Iranian women participated in sports often; their most common leisure activities included watching television, listening to the radio, family gatherings, reading books and magazines, outdoor activities, and religious activities. Iranian women live with a different set of social guidelines and religious views yet they are constrained by factors similar to the women of the Western culture. Their common constraints include family obligations and cost, but they are rarely constrained by intrapersonal barriers such as interests and skills, their health or psychological safety (Arab-Moghaddam et al.).

Research on Muslim groups within the United States has shown their religion to be a strong factor in leisure preferences and perceived constraints. Stodloska and Livengood (2006) looked at a range of immigrants from Israel, Jordan, Lebanon, Iraq, Egypt, Tunisia, Algeria, Turkey, Pakistan, India, Korea and Mexico, all followers of Islam. They found the strongest influences on leisure time activities within in this population included strong family orientations, the teaching of traditions to children,

overall modesty, and restrictions on mix gender activities (Stodloska & Livengood). This research showed the unique factors that influence the lives and leisure of Muslim women.

Assimilation and Acculturation

When attempting to understand the constraints to the leisure physical activity of women from different cultural backgrounds, it is important to understand the role of assimilation and acculturation. One of the factors that can influence the relationship between ethnicity and leisure constraints is the degree to which the individual has assimilated and acculturated into the majority culture (Eyler et al., 2003). “In the most general terms, acculturation can be defined as ‘the process of cultural change and adaptation that occurs when individuals from different cultures come into contact’ (Gibson, 2001, p. 19). Acculturation is often called cultural assimilation, because it deals directly with the culture and traditions of two groups. This process includes the minority group taking on the dominant cultural practices, including their language, traditions, holidays and attitudes (Scott, Lee, Ji-Yeon Lee, & Kim, 2006).

The altering of cultural patterns occurs with acceptance of a new culture; this can happen in many areas of life including leisure and recreation (Stodolska, 1998). The level of acculturation of individuals and families can have large effects on leisure time activities and perceived constraints. Language barriers, religious guidelines, lack of information of opportunities, feelings of discrimination, or perceptions of a lower social status are commonly noted constraints faced by minority groups (Stodolska).

Scott, Lee, Ji-Yeon Lee and Kim (2006) studied the leisure constraints of Korean-American immigrants and how acculturation affected these constraints. This study focused on structural constraints and was one of the first to look at how levels of

acculturation affected constraints to leisure. Constraint factors that were found to vary by level of acculturation were lack of English proficiency and fear of discrimination.

Although the differences in constraints based on levels of acculturation were important to recognize, they were not the largest factors limiting the leisure activities of Korean-American immigrants. Lack of time, too many other activities, a lack of information about activities and not having enough money were found to be the most constraining factors for this group. Similar to other Americans, the Korean-American immigrants found time to be their largest constraint. This factor did not vary by level of acculturation. The socialization of this racial/ethnic group greatly determined the activities in which they participated, supporting the ethnic-socialization theory of racial/ethnic leisure differences. Along with greater socialization and acculturation to the dominant society better occupational opportunities may also be available, supporting the marginality theory of race/ethnic differences.

Hosper, Nierkens, Valkengoed and Stronks (2008) looked at the motivating factors mediating the association between acculturation and participation in sport, among young Turkish and Moroccan women in the Netherlands. Turkish and Moroccan women have been found to have low sport participation levels due to cultural beliefs and tradition. Researchers found that higher levels of acculturation into the majority Dutch culture led to greater participation in sports for the Turkish women but not for the Moroccan women. Culturally specific attitudes about sports, as well as the self-efficacy of the women, may have influenced this outcome. While acculturation can have a positive effect on sport participation for Turkish women, more research is necessary to support this finding for all minority women (Hosper et al.).

Race/Ethnicity and Physical Activity

Despite the importance of physical activity most people within the United States do not meet the recommended guidelines of thirty minutes moderate activity most days of the week or twenty minutes of vigorous activity three days a week, set by the Center for Disease Control and the American College of Sports Medicine (Haskell et al., 2007). Racial/ethnic minorities make up a large portion of the group not meeting these guidelines. Promoting physical activity in minority groups is essential, as evidence has shown that physical activity can improve an individual's quality of life at all ages (Seefeldt, Malina, & Clark, 2002).

Minority women have been found to participate less than minority men in physical activity, making minority women a main concern for current and future research on physical activity constraints (Eyler et al., 2002). In a review of the current literature on the factors related to physical activity in minority women, Eyler et al. examined studies on Caucasian, African American, American Indian, Asian and Hispanic women. They found that all but two studies reported differences in physical activity based on race/ethnicity alone. Caucasian women were more likely to participate in recreational physical activity while other groups were more likely to take part in household and occupational physical activity. They also found many unique barriers to minority women, including not wanting to mess up one's hair or sweat heavily during a workday, fighting social stigmas of people who are active, a desire for rest, language barriers and peer non-acceptance due to cultural beliefs (Eyler et al.).

Among diverse racial/ethnic groups of adults, there are numerous correlates to physical activity. Young age, good general health and high self-efficacy are some of the

most consistently reported correlates among diverse women (Eyler et al., 2003, p 93). College education and higher income were also found to positively relate to physical activity participation (Eyler et al.). Research focused on minority women is increasing but has yet to adequately cover all race/ethnic groups; Hispanic, Asian and American Indians are still underrepresented in research on minority women's leisure.

Minority Women and Body Image Constraints

Different cultures are more or less accepting of women; this includes the activities that are seen as acceptable for female participation as well as how they view women's bodies (Rucker & Cash, 1991). Cultural acceptance and norms directly effect the body image dissatisfaction and the intrapersonal constraints felt by women of different cultures. Rucker and Cash (1991) found significant evidence that African American women differed from Caucasian women on a variety of body image measures. College-aged African American women held higher levels of satisfaction with their overall appearance, reported less negative thoughts about their body and were less concerned with dieting and becoming fat (Rucker & Cash). Some believe this is in part due to male preference. African American men usually prefer heavier women than Caucasian men (Singh, 1993).

Interestingly, Asian women reported less body dissatisfaction than all other groups (Cachelin, Rebeck, Chung, & Pelayo, 2001). Among Asian subgroups, Chinese women had low BMI and correlating low body dissatisfaction; yet Japanese women with similar low BMI's experienced very high body dissatisfaction (Yates, Edman, & Aruguete, 2004). This finding has led some to believe Asian women should not be grouped together. When looking specifically at Hispanic American women, one study

found levels of body image dissatisfaction to be similar to European American women (Ericksen, Markey, & Tinsley, 2003). Conversely, Cachelin, Monreal, and Juarez (2006) found that despite heavier weights, Hispanic women are more satisfied with their bodies, less concerned with weight and are more likely to rate themselves as attractive. Although much of research on minorities and constraints to leisure is inconclusive there is a great amount of research examining the dynamic between race/ethnicity and intrapersonal constraints to leisure (Cachelin et al, 2001; Rucker & Cash,1991; Singh 1993; Yates et al, 2004).

Conclusion

It is apparent that college aged women are constrained in their pursuits towards leisure, specifically physically active leisure. A historically patriarchal society, with negative stereotypes and pressures, has exacerbated this problem for women. Until true equality is found in leisure experiences and opportunities the examination of how different people are constrained, their preferences, and their motivations should be continued. Looking specifically at diverse, college-aged women and the leisure constraints they encounter will extend the current research on the constraints of women, as well as the inconclusive literature on racial/ethnic differences.

CHAPTER 3

METHODS

The purpose of this study is to understand the constraints to physical leisure activity of diverse college women, as well as potential ethnic differences in those constraints. Women have been found to be more constrained than men in their leisure pursuits (Jackson & Henderson, 1995). Barriers perceived by women include a higher prevalence of intrapersonal constraints, which have been found to greatly affect the participation of individuals (Liechty, Freeman, & Zabriskie, 2006). Research on variations in constraints based on race/ethnicity is inconclusive and this study will extend the research in that area.

Sample

The subjects of this study were drawn from three groups of female students. They included students who resided in the dormitories at the University of Nevada, Las Vegas (UNLV), were involved in the multicultural student organizations, or were enrolled in two freshman academic success classes. These groups of women provided a diverse population and assisted with a better understanding of how leisure constraints can vary by race/ethnicity. Most of the subjects were undergraduates as the majority of promotion was done through the residence halls. They represent a convenience sample of female college students. The addition of women from the multicultural campus organizations and freshman success classes assured ethnic diversity, as well as representation within the sample.

The subjects were recruited via fliers and e-mail invitations. Fliers were posted to promote the study within the residence halls and the Houssels House, where the multicultural student organizations often meet. The Residential Life Director and

Assistant Vice President for Diversity and Inclusion were also contacted and assisted in distributing the flier through email to only female students. The UNLV dormitories consist of four complexes. At the time of the survey they housed 1194 students with slightly over 50% female. The goal for participation was to obtain a minimum of 30 participants in each racial/ethnic group; including Asian or Pacific Islander, Black or African American, Hispanic or Latino, American Indian or Alaskan Native, White and non-Hispanic, and Multiracial totaling a minimum of 180 participants.

Measures

The questionnaire was comprised of six sections including: the consent to participate, demographics, physical activity measures, intrapersonal constraint variables, including a body image subsection, interpersonal constraint variables, and structural constraint variables. The questionnaire had been previously tested on six women for clarity and refinement. A copy of the questionnaire can be found in the Appendix.

Demographics

The questionnaire began with demographic questions; including academic grade level, current student status, residence, employment status, age, ethnicity, height, weight, and participation in UNLV intercollegiate or intramural sports. Height and weight were collected but the body mass indexes of each of the students were not calculated or utilized for data analysis.

Physical Activity

To assess the current physical activity participation level of the female students, a measure of moderate and vigorous physical activity was included. The measure looked directly at the number of days the students participated in moderate physical activity as

well as the number of days they participated in vigorous activity. Moderate physical activity participation was measured with options of 0 days a week, 1-4 days a week, or 5-7 days a week. Vigorous physical activity was measured with the options of 0 days a week, 1-2 days a week, and 3-7 days a week. Only the third option within each question falls under the recommended physical activity guidelines for Americans, set by the Center for Disease Control and the American College of Sports Medicine (CDC/ACSM) (Scott, Morrow, Jackson & Dunn, 2000).

Constraints

A majority of the constraints items were taken from Raymond, Godbey, Crawford and von Eye's (1993) original scale of leisure constraints. The constraints scale had three subscales intrapersonal, interpersonal, and structural. The wording of the survey was altered to pertain specifically to physical leisure activities. All variables in this section were measured on a 5-point Likert scale which included 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

The intrapersonal constraints subscale had seventeen items. Eight of the items were adapted from the Raymond et al. leisure constraints scale. An example includes: "My shyness limits my involvement in physical leisure activities." Four measures were added from a 2006 study on the body image leisure constraints of college students and their mothers (Liechty et al.). They were also modified for this study to pertain to physical leisure activities. Examples of body image specific measures include: "There are times I chose not to participate in physically active recreation activities (i.e.: swimming, running, dancing) due to concern about my appearance"; and "There are some physical leisure activities that I choose not to participate in or participate in less frequently than I

would like due to concern about my appearance” (Liechty et al., 2006, p. 318). Finally, five questions pertaining to motivation, racial/ethnic discrimination, and feeling welcome were added due to previous research findings. Examples of these items include, “Lack of motivation limits my involvement in physical leisure activities”; and “Concern about discrimination limits my involvement in physical leisure activity” (Alexandris, Tsorbatzoudis, & Grouis, 2002; Philipp, 1999).

The interpersonal constraints subscale had seven questions. All were adapted from the original leisure constraints scale (Raymond et al., 1993) to pertain specifically to physical leisure activities. An example includes: “The people I know live too far away to participate in physical leisure activities.”

The structural constraints subscale included seven items. These items were taken directly from the original leisure constraints scale, developed by Raymond et al., (1993), but modified to pertain specifically to physical leisure activities. An example includes: “Lack of transportation limits my involvement in physical leisure activities.”

Data Collection

Data collection entailed uploading the survey to SurveyMonkey.com and distributing emails with a link to the survey to various student groups. During a six week period of data collection multiple emails were sent out to students living within the residence halls inviting students to participate. The invitation email included a brief description of the study as well as a link to surveymonkey.com. All emails can be found within the Appendix. Students involved in the multicultural organizations on campus were also contacted via email by the Assistant Vice President for Diversity and Inclusion. Lastly, the survey was hand delivered to two Freshman Success classes by researchers.

Data Analysis

The analysis began roughly six weeks after the opening of the survey. The data collected was downloaded from surveymonkey.com into an Excel spreadsheet. It was then uploaded to the statistical software program, SPSS. SPSS was used to analyze the data in a variety of ways. First Cronbachs alpha was used to determine the internal consistency of the three constraints and body image subscales. Cronbachs alpha provides a determination of the reliability of the scales. The research question, “what constrains the physical leisure activity participation of female university students” was then analyzed using a within subjects ANOVA. This statistical test utilized the entire sample of women by comparing within subjects and mean scores on each of the constraint variables of interpersonal, intrapersonal, and structural.

The first hypothesis, “there are no differences in physical activity levels among female university students of different racial/ethnic backgrounds” was then examined using Chi square analysis. Race/ethnicity was used as the independent variable with physical activity the dependent variable. The physical activity variable was created by combing the scores of moderate and vigorous activity and differentiating between those who met the ACSM/CDC recommendations and those who did not.

The second hypothesis, “there are no differences in intrapersonal, interpersonal, and structural constraints to physical leisure activity among female university students of different racial/ethnic backgrounds” was examined using a MANOVA analysis. Race/ethnicity was used as the independent variable and the three constraints categories, intrapersonal, interpersonal and structural, were used at the dependent variables.

The third hypothesis, “there are no differences in the intrapersonal constraint of body image to physical leisure activity among female university students of different racial/ethnic backgrounds” was lastly examined using an analysis of variance (ANOVA). The independent variables of race/ethnicity and physical activity and the dependent variable of intrapersonal body image were utilized to find any differences or similarities between the groups.

CHAPTER 4

RESULTS

This chapter will discuss the results of the survey conducted on campus at the University of Nevada, Las Vegas in fall of 2009. The demographics of the participants, reliability of the scales, and the analysis of each research question will be covered in detail.

Sample

Two hundred sixty-four female university students participated in this study. The largest racial/ethnic group included in the sample was White, non-Hispanic (n=90) followed by Asian/ Pacific Islander (n=45), Black/African American (n=40) and Hispanic/Latino (n=40). The race/ethnicity diversity of the participants was essential, as the research questions examined the specific differences between diverse racial/ethnic groups. During the data analysis, the subcategories of American Indian/Alaskan Native and Multiracial were excluded due to low representation in the sample. Each of the racial/ethnic groups analyzed provided at least 30 respondents.

Of the total sample, 46% of the students were freshmen, 18% sophomores, 14% juniors, 14% seniors, and 8% graduate students. The women living in the residence halls were one of the largest target audiences for recruitment, leading to a large number of freshman participants. A little over half of the students lived on campus (51%) and almost all of the students were enrolled full-time (93%).

The sample indicated fairly low levels of physical activity at the levels recommended by the CSC/ASCM. The CDC/ASCM has set guidelines of physical activity for Americans at thirty minutes of moderate activity most days of the week (5-7)

and vigorous activity three days a week (Haskell et al., 2007). Of the female students in this study, only 45 (18.6%) out of 215 met the guidelines, while 170 (79%) were not participating in enough physical activity.

Although many did not reach the recommended levels of physical activity the results did show most participated somewhat in either moderate or vigorous activity. For weekly moderate activity the results showed 25% (n=47) of the students did not participate at all, 63% (n=118) participated 1-4 times a week, and 13% (n=24) participated in moderate physical activity 5-7 days a week. The results for vigorous activity showed 42% (n=79) of the students did not participate, 41% (n=76) participated 1-2 times a week, and 17% (n=32) participated in moderate physical activity 3-7 days a week. Approximately thirty students did not respond to the questions on physical activity.

Reliability of Measures

Raymore, Godbey, Crawford, and von Eye (1993) developed the leisure constraints model to explain the intrapersonal, interpersonal, and structural barriers to leisure engagement. Their psychometric testing indicated that their model of leisure constraints was valid and that the measures reliable.

In the current study, Cronbach's Alpha was used to test the reliability of the scales; the internal consistency coefficients indicated that the three Raymore et al. (1993) constraint subscales had acceptable reliability. Cronbach's Alpha results for each constraint category can be found in Table 1.

Table 1

Cronbach's Alpha Reliability Scores for Constraint Scales

Variable	α
Intrapersonal	.864
Body Image	.607
Interpersonal	.776
Structural	.762

In this study the internal consistency coefficient of the body image subscale was lower than desired ($\alpha=.607$). Lietchty et al., (2006) reported that the body image subscale demonstrated adequate internal consistency for mothers ($\alpha=.79$) and for daughters ($\alpha=.77$) in their study on body image and beliefs about appearance. Due to the low reliability coefficient for the body image scale in this study, caution will be exercised in interpreting the results.

Research Questions

Research Question: What constrains the physical leisure activity of female university students? This research question was analyzed using a within subjects analysis of variance (ANOVA) and revealed that structural constraints were significantly higher than intrapersonal and interpersonal constraints ($F(2,197) = 58.68, p < .001$). The means and standard deviations of the constraint scales can be found in Table 2.

Table 2

Means and Standard Deviations for Constraint Scales

Variable	<u>Mean</u>	<u>SD</u>
Intrapersonal	2.4195	.6439
Interpersonal	2.6657	.7420
Structural	2.9862*	.7737

The mean scores indicated that the largest constraint to physical activity experienced by the diverse students were structural with a mean of 2.98 out of 5. Structural constraints include time and other commitments, crowded facilities, transportation, lack of knowledge about activities, lack of convenience of facilities and financial issues. In this study, time and other commitments were found to be the largest specific structural constraints to physical activity. Interpersonal constraints were rated slightly lower with a mean of 2.66 and intrapersonal constraints had the lowest impact with a mean of 2.41.

Hypothesis 1: There are no differences in physical activity levels among female university students of different racial/ethnic backgrounds. This hypothesis was examined using chi-square analysis. Chi-square analyzes the distribution of scores for multiple categorical variables. In this test participants were placed into groups based on whether they did or did not meet the physical activity guidelines set by the CDC/ASCM. With a chi-squared value of $\chi = 3.642$ (df = 3) and a goodness of fit index of .303, the model did not show a good fit for the data. There were no significant differences in the physical activity levels of students among different racial/ethnic backgrounds. This analysis

supports the first hypothesis that no differences would be found. Frequencies of female students from different ethnic backgrounds who met or did not meet the CDC/ACSM guidelines can be found in Table 3.

Table 3

Number of Students Meeting CDC/ACSM Physical Activity Guidelines

Race/Ethnicity	Yes	No
Asian or Pacific Islander	9	36
Black or African American	5	35
Hispanic or Latino	8	32
White, Non Hispanic	23	67

Hypothesis 2: There are no differences in intrapersonal, interpersonal, and structural constraints to physical leisure activity among female university students of different racial/ethnic backgrounds. This hypothesis was examined using a multivariate analysis of variance (MANOVA). The MANOVA was carried out to determine whether differences in constraints existed among females of different racial/ethnic backgrounds. Results of the MANOVA were significant (Wilks Lambda=.031, $F(3,225) = 1.119$, $p < .01$). An ANOVA and Scheffe post hoc test was carried out to identify where differences existed among the variables by ethnicity. The only significant difference found was in the interpersonal constraints of Hispanic women ($\bar{x} = 3.00$) and White, non-Hispanic women ($\bar{x} = 2.51$). Interpersonal constraints occur when limitations in peer and family knowledge and participation preclude leisure involvement. Hispanic

women were more likely than White, non-Hispanic women to report interpersonal constraints as a barrier to their physical activity participation. Therefore, the hypothesis that no difference would be found has been rejected. The multivariate analysis of variance can be found in Table 4. The means and standard deviations of the constraints by race/ethnicity can be found in Table 5.

Table 4

Multivariate and Univariate Analyses of Variance for Constraint Scales

Variable	<u>MANOVA</u>		<u>ANOVA</u>		
	df	F	Intra-	Inter-	Structural
Ethnicity	3	1.119*	2.459	2.706**	3.028

Note. MANOVA=multivariate analysis of variance, ANOVA=univariate analysis of variance; F ratio generated by Wilks Lambda statistic.

**p<.01, **p<.001*

Table 5
Scheffe Post Hoc Test with Mean Scores and Standard Deviations for Constraint Scales
by Race/Ethnicity

<u>Group</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Sig.</u>
Intrapersonal			.251
Asian or Pacific Islander	2.60	.70785	
Black or African American	2.49	.53526	
Hispanic or Latino	2.40	.68588	
White, Non-Hispanic	2.33	.64745	
Interpersonal			.013*
Asian or Pacific Islander	2.63	.71438	
Black or African American	2.68	.77934	
Hispanic or Latino	3.00	.56645	
White	2.51	.76904	
Structural			.291
Asian or Pacific Islander	3.16	.73166	
Black or African American	2.92	.63608	
Hispanic or Latino	3.13	.87089	
White, Non-Hispanic	2.90	.80688	

p ≤ .001

Hypothesis #3: There are no differences in the intrapersonal constraint of body image to physical leisure activity, among female university students of different racial/ethnic backgrounds. This hypothesis was examined using a one-way analysis of variance (ANOVA).

The results of the ANOVA showed there were no significant differences between the African American, Asian/ Pacific Islander, Hispanic/Latino, and White, non-Hispanic women in regards to their body image constraints to physical activity. This result supports the hypothesis that no differences would be found between racial/ethnic groups. The between group and within group analysis of variance can be found in Table 6. The mean scores and standard deviations for each racial/ethnic group can be found in Table 7.

Table 6

Analysis of Variance for Body Image by Ethnicity

	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>Sig.</u>
Between Groups	3	2.10	.70	.940	.423
Within Groups	145	195	.745		
Total	148	198			

Table 7

Mean Scores and Standard Deviations for Body Image Constraints by Ethnicity

<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>Standard Deviation</u>
Asian /Pacific Islander	38	2.91	.91
Black/ African American	36	3.07	.70
Hispanic /Latino	45	2.84	.74
White, Non-Hispanic	80	3.08	.96

Overall, three hypothesis were tested. Few differences were found among the different racial/ethnic groups by physical activity level or constraints. One significant difference in interpersonal constraints was found between White, non-Hispanic and Hispanic women and will be further discussed within Chapter 5. The lack of differences found between the racial/ethnic groups, limitations of the study, practical implications, and future research will also be discussed.

CHAPTER 5

DISCUSSION

This study examined the physical activity constraints of diverse female college students. Additionally, it investigated potential differences in physical activity levels or constraints among racial/ethnic groups. The findings of this study were contrary to previous research and showed that diverse college-aged women were similar in their constraints to physical activity. The chapter presents the implications and limitations of the research as well as suggestions for future research.

Physical activity has been increasingly recognized as key to living a long and healthful life, yet most college students do not meet the minimum recommendations (American College Health Association, 2008). Without daily physical activity, people may become more vulnerable to illnesses such as diabetes, cardiovascular disease, stroke, hypertension, osteoporosis, obesity and many forms of cancer (Haskell et al., 2007). Minority women have been found to be the least active and therefore at the greatest risk (Eyler et al., 2002). Understanding the different constraints faced by those who are the least active is an important element to increasing the health of our society.

Constraints to Physical Activity

The results of this study showed that while the students were only moderately constrained in their physical activity, structural constraints were perceived to be the most constraining. The structural constraints that were reported most by the students included time and other commitments. Time has often been found as the strongest constraint to women (Shaw, 1994). Familial commitments have also been seen as a historically relevant constraint to women of all ethnicities (Shaw, 1994). Therefore, the main

constraints found within this group of diverse college-aged women are in-line with that of other studies.

The mean constraint scores of 2.98, 2.66 and 2.41 for structural, interpersonal and intrapersonal constraints, respectively, show that female students are moderate in terms of their constraints to physical activity. In previous studies, self-esteem, stereotypes, and perception of physical abilities were commonly found to constrain women in physical activity (Jackson & Henderson, 1995; Raymore, Godbey, & Crawford, 1991; Shaw, 1994).

Physical Activity Comparison

The results of the first hypothesis showed there was no significant difference among diverse groups of women in their physical activity levels. While a majority of the students were active to some degree only 12% of Black/African American, 20% of Asian/Pacific Islander, 20% of Hispanic/Latino students and 25% of White, non-Hispanic students met the CDC/ASCM guidelines. In contrast to other studies, there was no significant relationship between race/ethnicity and level of physical activity (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007; Eyler et al., 2002; Hosper, Nierkens, Valkengoed, & Stronks, 2008). Similarities between the racial/ethnic groups may be attributable to similar levels of acculturation, education, self-efficacy and socioeconomic status of the female students (Ball, Salmon, Giles-Corti, & Crawford, 2006; Cassetta, Boden-Albala, Sciacca, & Giardina, 2007; Eyler et al., 2003).

Recent studies have found a number of factors related to physical activity including the finding that diverse women with access to healthcare, total activity time was significantly related to education (Cassetta et al., 2007). In contrast to other studies,

this study also found no relationship between physical activity and race/ethnicity once adjusting for education differences. He and Baker (2004) found that the “differences in educational attainment and health status accounted for virtually all of the racial and ethnic differences in leisure time physical activity” (p. 259). This research shows that education level, as well as socioeconomic status and environment are important variables to consider when looking at physical activity level.

It was reported in a study of Hong Kong and Australian university students that self-efficacies, rather than constraints, predicted physical activity participation (Tsai & Coleman, 2009). Time efficacy, persistence efficacy and activity efficacy were important motivators to the students. Rodgers and Sullivan (2001) also found that coping and scheduling efficacy were the best predictors of physical activity participation. Additionally, studies have shown that affective attitude, subjective norm, and perceived behavior control can determine physical activity levels more thoroughly than race/ethnicity alone (Blanchard et al., 2007). The Theory of Planned Behavior has been used to predict the physical activity intentions and behaviors of diverse college students. They found that the subjective norm of the students’ environment predicted their intention to participate in physical activity, in both ethnic groups. The affective attitude was also found to predict intention to participate and did not vary by ethnicity as researchers expected (Blanchard et al., 2007).

Constraint Comparison

The results of the second hypothesis showed only one significant difference in the constraints to physical leisure activity among female university students of different racial/ethnic backgrounds. White, Non-Hispanic women and Hispanic women differed in

their perceived interpersonal constraints. Interpersonal constraints are specifically related to participation in companionate leisure activities, such as tennis, volleyball and many other activities requiring a partner. The requirement of other participants can constrain the involvement of some women when they do not know others with whom to participate. The Hispanic women in this study felt they were more constrained by this aspect than their White, non-Hispanic counterparts. This correlates with previous studies on Hispanic women that have found their largest barriers to physical activity are social and cultural (Amesty, 2003; Evenson, Sarmiento, Macon, Tawny, & Ammerman, 2002; Juarbe, Lipson, & Turok, 2003).

When focusing on Hispanic women, researchers found they were commonly constrained by a lack of support from their families and friends (Amnesty, 2003). Lack of social support for exercise can create a large obstacle for Hispanic women to overcome. Eyler et al., (2002) reported that social support is an important positive determinant of physical activity within all racial and ethnic groups. Therefore the difference found between Hispanic and White women in this study may be due to their apparent lack of support. Cultural beliefs and values of Hispanic women have also been found to constrain their level of physical activity (Juarbe et al., 2003). Traditional roles place Hispanic women in the home and show little value for physical activity. Evenson et al. (2002) found that the lower the acculturation of Hispanic women the greater the barriers to physical activity from cultural values, beliefs, attitudes and behaviors. All of these aspects should be considered when creating interventions to increase the physical activity of Hispanic women.

The further lack of differences among the constraints of diverse college aged women is contrary to most studies. Similarities between the racial/ethnic groups may be attributable to similar attitudes and norms, as well as levels of acculturation, education and socioeconomic status, of the female students in this study (Ball et al., 2006; Cassetta et al., 2007; Eyler et al., 2003; Suminski & Pyle, 2009). Much like the similar levels of physical activity previously discussed, the similar education levels, environment, economic opportunities, and acculturation of the visibly diverse students may have produced a more homogeneous group of women than expected.

Previous research found lower income minority women have the most perceived constraints to physically active leisure (Colley, 1984; Searle & Jackson, 1985). Constraints found among minority women include feeling unwelcome and uncomfortable, a lack of time and space to participate, job demands, as well as economic factors (Henderson & Ainsworth, 2001; Philipp, 1995). Other barriers unique to this group include fighting social stigmas of people who exercise, language barriers and peer non-acceptance due to cultural beliefs (Eyler et al., 2002).

Body Image Constraint Comparison

The third hypothesis revealed there were no significant differences among the racial/ethnic groups in the degree to which the intrapersonal constraint of body image restricted their physical leisure. The mean scores showed the women were moderately constrained in their physical activity participation by body image constraints. The mean scores showed no significant differences between racial/ethnic groups: African American (3.07), Asian (2.91), Hispanic (3.84) and White, non-Hispanic (3.08). The lack of body

image constraint differences between the racial/ethnic groups was unexpected as much of the research on body image has found large discrepancies between racial/ethnic groups.

While research on body image and constraints is currently incomplete, differences have been found between the racial/ethnic groups. African American men and women have commonly been thought to accept larger body sizes, leading to a positive body image within the women (Rucker & Cash, 1991). Conversely, Asian women idealize much smaller body sizes; this along with the ingraining of Western culture in some Asian regions has led to body image ratings lower than other groups (Yates, Edman, & Aruguete, 2004). This is not inclusive of all Asian cultures; some such as Pacific Islanders are less in tune with Western culture and therefore have different social standards and psychological repercussions (Yates et al., 2004). Previous studies have also found mixed results when investigating the constraints due to poor body image within Hispanic women. Some believe their strong culture may act as a buffer to the stereotypes and thin ideals found within studies of White, non-Hispanic women (Cachelin, Monreal, & Juarez, 2006).

Although there is little research on how body image can specifically constrain physical activity, Fredrick and Shaw (1995) found poor body image does not decrease participation in physical activity. Instead it may only decrease enjoyment of an activity. In a study of university students in Canada, a dual qualitative/quantitative method was used to understand how body image affects women and their participation in aerobics classes. Neutral survey scores showed body image was not related to participation in aerobics (Fredrick & Shaw). The corresponding interviews found that body image did decrease the enjoyment of the activity and altered the motivations for participating. Many

of the women stated they were uncomfortable participating in aerobics classes due to the tight clothing and apparent competition of appearance (Fredrick and Shaw,). They also found that the greatest motivation to participate, despite the discomfort, was weight loss. This study shows the effects of body image on constraints have only been moderately explained.

Contrary to much of the current research, Grabe and Hyde's (2006) meta-analysis of body image research found few realistic differences between racial/ethnic groups. By looking at an array of constraints research Grabe and Hyde were able to compile a database of information on body image within diverse women. They calculated effect size by subtracting the mean body image scores of one ethnic group minus the mean score of another group and divided by the pooled standard deviation. After comparing 98 articles from 41 journals the data showed there was very little difference among the body image of various ethnic groups (Grabe & Hyde). Results showed White non-Hispanic and African American women only slightly differed in body satisfaction. No differences were found between the other groups when compared to each other, as well as White, non-Hispanic women. This directly challenged the common theory that White women have more body image dissatisfaction than minority women. The results clearly show researchers that looking beyond race and ethnicity for explanations of differences in body image is important. Factors such as education and self-efficacy may have larger effects on women and their body image constraints to physical activity than race/ethnicity alone (Grabe & Hyde, 2006).

Educational attainment has been found to be related to a positive body image. Much like physical activity levels, a higher education often predicts a better body image

and self-esteem (Swami, Hadji-Michael, & Furnham, 2008). Specifically researchers believe “higher education affords individuals greater resources with which to arrive at more positive body image” (Swami et al., 2008, p. 324). Self-efficacy has also been researched as a mediator to positive body image and, in turn, a woman’s physical activity participation. Specifically, time efficacy, persistence efficacy and activity efficacy were found as important motivators to university students (Tsai & Coleman, 2009)

Limitations

Limitations of this study include the chosen method of convenience sampling. This method could create a bias in the sample, as students were chosen based on their residency on campus and participation in multicultural organizations. A random selection of university students may provide a better representation of diverse college-aged women. The participants in this particular study were either a part of a multicultural organization or living within the residences halls. This sample may have given unique results, as a majority of the racial/ethnically diverse students were already involved in campus activities while the mostly White, non-Hispanic students were merely living on campus. Therefore, the minority students may have represented a uniquely active, efficacious group which may have impacted these study results.

Second, the students were asked to self-report their physical activity levels, a method that has been frequently used but is not always a reliable indicator of true levels of activity. Self-reporting of physical activity levels has often been found inaccurate (Sallis & Saleens, 2000). A more objective way to find data on physical activity levels could be recording the use of recreation facilities, class participation, or pedometers. Self reporting was one aspect of the response bias found within the study. Utilizing members

of the multicultural program and comparing them with predominantly Caucasian students within the residence halls may have also added an unforeseen bias.

Third, the questionnaire that was utilized for the study was a collection of three previously utilized surveys which had to be reworked and reworded to precisely fit the topic. Including the option of “neutral” as the midpoint of the scale also lead to less than optimal results; creating a 7 point, Likert scale may provide clearer results. Additionally, the utilization of a broader model for physical activity antecedents, which include more options for constraints, may include the likelihood of uncovering significant differences. This might include measurements of self-efficacy, motivation, acculturation and socioeconomic status.

An extended measurement of physical activity may also have lead to more detailed results. Most of the students surveyed did participate in some physical activity, but did not meet the guidelines. Categorizing the students by whether they met the CDC/ACSM guidelines or not hid some interesting results within the group of students who worked out somewhat. Theoretically, analyzing more levels of exercise may have revealed the constraint differences between women of varying degrees of activity.

Lastly, a large limitation to this study is the location. Because it was conducted within a city which is oriented more towards driving than walking, the results are not applicable to other large cities. Some cities across the nation have been framed around walking, to and from work, the grocery store, school etc. It would be expected that females within these cities would be more physically active on a day to day basis. While the results of this study may be useful for other similar commuter cities, the results are not universal.

University Implications

When planning and implementing physical activity programs for college aged women, constraints research should be taken into consideration. Understanding how female college students are constrained in physical activity is useful information to coordinators or directors of recreation and fitness programs. The information found by studies such as this should lead to the molding and shaping of programs around the frequent issues faced by students on campus. This includes special attention to time. Found to be one of the greatest constraints of college-age women, time is an essential constraint to most potential participants. The college students' schedule does not parallel the rest of society as they do not attend class from 9am-5pm. A 24-hour schedule would give the students more hours to fulfill their desired physical activity and help them overcome this constraint. An overall emphasis on healthy living should be an essential component of University recreation center activities and promotions.

Universities by definition and purpose are here to increase the knowledge of young adults; this should not stop at the recreation center. Educating students on the importance of physical activity and the mental, physical and social benefits that come with an active lifestyle is an important role given to campus recreation centers. Instilling a strong value in physical activity and a healthy lifestyle is an essential component to creating our future leaders. The millions of college students currently attending our nation's universities are the future and their values or lack thereof will be passed down to future generations. The identification of constraints found on universities and the creation of possible solutions is essential to increasing the physical activity of students. Once identified staff should be able to create programs and marketing plans that target their

specific student body. If time is the largest constraint, planning and scheduling aspects should be included in freshman success classes to increase their scheduling efficacy. If there is an apparent lack of social support for the students, creating clubs and groups of physically active students will greatly increase their support system. Tailored interventions in the form of programs and marketing plans will assist students in the negotiation of their individual constraints and in-turn produce well-rounded healthy alumni.

Future Research

The results of this study suggest further examination of women and their constraints to physical leisure activities is needed. While gender differences within physical activity and constraints have been thoroughly investigated, racial/ethnic differences are still inconclusive. Further research is still needed to understand the physical activity preferences and constraints of minority groups and women in general. The lack of differences found in this study show that the underlying factors causing constraints may be similar among racial/ethnic groups. Focusing attention on how self-esteem, socioeconomic status, education levels and environment can shape women's constraints is pertinent to increasing physical activity.

Furthermore, it is important for future research to reach beyond general constraints scales and employ an array of theories to create a well-rounded view of what constrains women. The Self Determination Theory focuses on the social and contextual factors that can facilitate or forestall self-motivation (Ryan & Deci, 2000). The Self Determination Theory may provide a useful framework for understanding the motivations and values of students toward physical activity.

The Social Cognitive Theory gives an in-depth look at self-efficacy along with an individual's goals, outcome expectations, and perceived environmental impediments and facilitators (Bandura, 2004). Utilizing this model to fully understand how the self-efficacy of university students affects other aspects of their lives would greatly increase understanding of constraints and physical activity participation of any subgroup. "Unless people believe they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulties (Bandura, 2004, p. 144). The beliefs of self-efficacy, within university students, are essential to motivation, action and personal change. Understanding the means to increasing self-efficacy beliefs is important to the creation of interventions, which can then be implemented on campuses.

The Trans-Theoretical Model may also be useful in the identification of the student's level of commitment to a healthy lifestyle. This model places individuals into one of five stages of change, pre-contemplation, contemplation, preparation, action and maintenance. Understanding where the student population stands, in regards to exercise, is essential to increasing their participation. Lastly, Rosenbaum's Model of Self Control could be utilized to investigate the resourcefulness (problem solving skills, self-regulating skills and ability to delay gratification) of students, to explain why some succumb to excuses for not exercising even though they have strong intentions (Kennett, Worth, & Forbes, 2009). This model would be useful as an addition to constraints research, as it would lend researchers a hand in understanding the rationalization of diverse students. These additional theories could significantly increase the current understanding of the physical activity constraints of diverse college-aged women.

Conclusion

This research has assisted in expanding previous constraints research and pinpointing many areas of further research. It has also brought to light the escalating idea that college-aged women, no matter their race/ethnicity, may encounter similar constraints and levels of physical activity. Although most research has found differences among women of different race/ethnicity, this study has contributed to the growing number of studies that have found evidence to the contrary.

APPENDIX A

EMAIL TO HOUSING DIRECTOR

Richard Clark
Director of Student Conduct & Residential Life

Good Morning Mr. Clark. My name is Kathy Minkel and I am a graduate student in the UNLV Recreation and Sport Management Department. I am contacting you in hopes that you and your staff could assist me in my thesis research. I will be conducting my data collection this fall to complete my Master's degree requirements. I would like to invite female UNLV students living currently in the residence halls to participate in my study. I am excited to give you a brief summary of this project and hope you find it intriguing and worthy of your support.

The study will examine female college students' constraints to involvement in physical leisure activity. Previous research suggests that almost 60% of college students do not obtain the recommended amount of physical exercise, yet little research has examined the factors that constraint students' involvement in physical leisure activity, especially ethnic minority students. The data collection process will include a short survey that the students will take online at surveymonkey.com. The survey will be completely voluntary and will include measures of demographics, physical activity, and constraints. The survey will be conducted in September and October of the fall semester with recruitment material disseminated at the beginning of the semester. My hope is that this study will provide campus recreation and university officials with valuable insight into the women they serve and assist them in the creation of programs and services that more effectively promote physical activity involvement. I have included a letter in support of my study from Jeff Wells, Director of the Student Recreation and Wellness Center.

I am asking you for permission and assistance in disseminating requests for participation in the study via e-mail and fliers to the female students living in residential housing. I will provide all of the recruitment materials to you. I believe that this research is important and, with your support, will be a success for all involved.

Thank you for your time. If you have further questions, please contact me at minkelk@unlv.nevada.edu or Cynthia Carruthers at cynthia.carruthers@unlv.edu.

Sincerely,

Kathy Minkel
Masters Candidate

Cynthia Carruthers, Ph.D.
Professor/Thesis Chair

APPENDIX B

LETTER TO ASSISTANT VP FOR DIVERSITY AND INCLUSION

José Luis Melendrez

Assistant Vice President for Diversity and Inclusion

Good Morning Mr. Melendrez, My name is Kathy Minkel and I am a graduate student in the UNLV Recreation and Sport Management Department. I am contacting you in hopes that you and your staff could assist me in my thesis research. I will be conducting my data collection this fall to complete my Masters degree requirements. I would like to invite a diverse sample of female UNLV students to participate in my study. I am excited to give you a brief summary of this project and hope you find it intriguing and worthy of your support.

The study will examine female college students' constraints to involvement in physical leisure activity. The data collection process will include a short survey that the students will take online at [surveymonkey.com](https://www.surveymonkey.com). The survey will be completely voluntary and will include measures of demographics, physical activity, and constraints. The survey will be conducted in September and October of the fall semester with recruitment material disseminated at the beginning of the semester. My hope is that this study will provide campus recreation and university officials with valuable insight into the women they serve and assist them in the creation of programs and services that more effectively promote physical activity involvement. I have included a letter in support of my research from Jeff Wells, Director of the Student Recreation and Wellness Center.

I am asking you for permission and assistance in disseminating requests for participation in the study to the female students participating in multicultural organizations and the multicultural center. Previous research suggests that almost 60% of college students do not obtain the recommended amount of physical activity. Research also suggests that ethnic minorities are less engaged in physical activity than other populations. However, to date, there is almost no research on the constraints to physical leisure activity experienced by college women of different ethnic backgrounds. The main target for the data collection will be female UNLV students. The addition of female students involved in the multicultural organizations will assure a diverse sample. With your support this research will be a success for all involved.

Thank you for your time. If you have further questions, please contact me at minkelk@unlv.nevada.edu or Cynthia Carruthers at cynthia.carruthers@unlv.edu.

Sincerely,

Kathy Minkel
Masters Candidate

Cynthia Carruthers, Ph.D.
Professor/Thesis Chair

APPENDIX C

LETTER FROM JEFF WELLS

July 23, 2009

Richard Clark
Director, Housing & Residential Life
University of Nevada, Las Vegas
Las Vegas, Nevada 89154

Dear Rich,

I am pleased to provide this letter of support for Ms. Kathy Minkel, graduate student in the Department of Recreation & Sport Management, who is working on her master's thesis. In support of her research on *Female Leisure Constraints*, please consider her request of you in providing the ability to connect with female students in your areas of responsibility. I feel the Kathy's research will be beneficial in helping Campus Recreational Services in providing more effective and efficient ways to connect with the females on our campus.

If you have any questions please contact me at your convenience, either email, jeff.wells@unlv.edu of phone (702) 774.7120.

Sincerely,

Jeff Wells, Director
Campus Recreational Services
UNLV

APPENDIX D

LETTER OF SUPPORT, R. CLARK AND J. MELENDREZ

From: Richard.Clark@cmail.nevada.edu
Date: Thu, 6 Aug 2009 11:58:56 -0700
To: Kathy Minkel<kathyminkel@yahoo.com>
Subject: Re: Thesis Research Request

Kathy,

After reviewing your request and discussing it with my staff, I would be more than happy to assist your survey. Please contact my office at 895-1469 and we can set up a time to meet and work out the details.

Richard

Richard Clark
Director, Office of Student Conduct & Residential Life
Campus Housing
Division of Student Life
4505 Maryland Parkway
Box 452013
Las Vegas, NV 89154-2013
702-895-3489

From: "Jose.Melendrez@unlv.edu" <Jose.Melendrez@unlv.edu>
To: Kathy Minkel <kathyminkel@yahoo.com>
Sent: Tuesday, August 11, 2009 7:51:47 PM
Subject: Re: Thesis Research Request

Hello Kathy,
Sorry for the late response I am still playing up from the week I took off. Yes please count on our support for your research project. We should meet soon to discuss strategy and outreach.

Jose

Jose L. Melendrez, MSW
OVPDI @ UNLV

APPENDIX E

RECRUITMENT FLYER



Hard to Find Time?
Need a Partner?
Don't Know Where?
Hit a Plateau?

What Limits Your Physical Activity?
Watch your email for an invitation to this one time study!

APPENDIX F

INITIAL RECRUITMENT EMAIL

Dear UNLV Student,

I am a UNLV graduate student and I would like to invite you to participate in a very important project. The project is a study of female college students' constraints to physical leisure activity. It is my hope that the study will provide the UNLV Recreation and Wellness Center with valuable insights into the female students at UNLV and assist in the creation of programs and services that motivate and sustain physical activity. I am excited to give you a brief summary of my background, as well as the study.

My name is Kathy Minkel. I am working towards my Masters degree in Recreation and Sport Management. I obtained my Bachelors Degree in Sociology and have always been interested in what motivates, as well as constrains, recreation and sport involvement. This study of constraints to physical leisure activity is my thesis topic. The completion of this study is the final requirement for the completion of my degree program at UNLV.

It is surprising to most people that approximately 60% of college students in the U.S. do not meet the minimum recommendations for physical activity. The study you are being invited to participate in will look specifically at female students from UNLV and how they are constrained in their physical leisure activities. Physical leisure includes any freely chosen activity that gets you moving. A few examples are working out, sport, dance, or outdoor pursuits like hiking and biking.

Please accept my invitation to be a part of this study by going to ([surveymonkey.com](https://www.surveymonkey.com)) and taking the survey. It will take approximately 12 - 15 minutes and your answers are completely anonymous. Further, your participation is voluntary and you may discontinue your participation at any time.

Thank you, in advance, for taking the time to complete the survey. If you have further questions, please contact me at minkelk@unlv.nevada.edu or Cynthia Carruthers at cynthia.carruthers@unlv.edu.

Sincerely,

Kathy Minkel
Masters Candidate

Cynthia Carruthers, Ph.D.
Professor/Thesis Chair

APPENDIX G

REMINDER EMAILS

Dear UNLV Student,

A few weeks ago you were sent an invitation to participate in an important study of female college students' constraints to participation in physical leisure activities. My hope is that this study will provide campus recreation and university officials with valuable insight into the women they serve and assist them in the creation of programs and services that inspire and sustain physical activity involvement.

There is only one week left for the collection of data in this study. So I am again extending you an invitation to participate, if you have not done so already. Please go to ([surveymonkey.com](https://www.surveymonkey.com)) to complete the survey. Of course, your involvement is completely voluntary and all information is anonymous. Also, you may cease your participation at any time if desired.

I have attached the previous email below to give you some background on myself and the study. If you have further questions, please contact me at minkelk@unlv.nevada.edu or Cynthia Carruthers at cynthia.carruthers@unlv.edu.

Thank You,

Kathy Minkel
Masters Candidate

Cynthia Carruthers
Professor/Thesis Chair

Dear UNLV Student,

I am a UNLV graduate student and I would like to invite you to participate in a very important project. The project is a study of female college students' constraints to physical leisure activity. It is my hope that the study will provide the UNLV Recreation and Wellness Center with valuable insights into the female students at UNLV and assist in the creation of programs and services that motivate and sustain physical activity. I am excited to give you a brief summary of my background, as well as the study.

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It is surprising to most people that approximately 60% of college students in the U.S. do not meet the minimum recommendations for physical activity. The study you are being invited to participate in will look specifically at female students from UNLV and how they are constrained in their physical leisure activities. Physical leisure includes any freely chosen activity that gets you moving. A few examples are working out, sport, dance, or outdoor pursuits like hiking and biking.

Please accept my invitation to be a part of this study by going to ([surveymonkey.com](https://www.surveymonkey.com)) and taking the survey. It will take approximately 12 - 15 minutes

and your answers are completely anonymous. Further, your participation is voluntary and you may discontinue your participation at any time.

Thank you, in advance, for taking the time to complete the survey. If you have further questions, please contact me at minkelk@unlv.nevada.edu or Cynthia Carruthers at cynthia.carruthers@unlv.edu.

Sincerely,

Kathy Minkel
Masters Candidate

Cynthia Carruthers, Ph.D.
Professor/Thesis Chair

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