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**Who Enters Campus Recreation Facilities:  
A Demographic Analysis**

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## **Who Enters Campus Recreation Facilities:**

### **A Demographic Analysis**

#### **Abstract**

The purpose of this study was to examine student entry into a campus recreation center based on seven demographics (gender, ethnicity, age, class standing, intercollegiate athlete vs. non-athlete, students with self-reported disability vs. non-disability, and campus residence) in order to determine who would be most likely to enter the recreation center. Subjects were from a mid-western, four year state-assisted institution with combined enrollment of 23,932 undergraduate and graduate students. Of the 23,932 enrolled, 14,032 students were examined in this study. Information on student entry to the recreation center was collected through the university's student information system. Data was analyzed and interpreted using chi-square analysis. Results of the study show statistically significant differences in the demographics except the student disability demographic. More males than females, more African Americans than other ethnicities, more traditionally aged (18-25) students than non-traditional students, more underclassmen than seniors, more athletes and non-athletes, more residents than commuters were likely to enter the campus recreation center. The findings in this study could be used by collegiate recreational sport directors and administrators, in the United States and internationally, for future ideas about programming in similar recreation settings.

**Keywords:** recreational sports; recreation facilities; campus recreation; participation; student recreation

## **Who Enters Campus Recreation Facilities: A Demographic Analysis**

### **Introduction**

The collegiate recreational sports profession has always been practitioner oriented, and this is reflected in its research. This orientation has produced research that is anecdotal and “how-to” and has generated only a moderate level of empirically based research over the 60 years the profession has formally existed (Barcelona & Ross, 2002; Milton 2002). The purpose of this investigation, therefore, was to analyze student entries to a campus recreation facility based on demographics.

Recent researchers in the field have begun to examine critically the type and quality of assessment conducted in the field. One such study criticized recreational sports departments that have historically allowed hours of participation, frequency of participation, and raw numbers of participants to constitute their assessment efforts, “rationalizing that if their programs are popular, they are successful and meet the needs of the participants” (Ellis, Compton, Tyson, Bohlig, 2002, p. 53). Such rationalization is fostered perhaps by the participation study of Noyes (1996) who stated that “the best available standard for measuring student satisfaction---participation rates, or the total enrollment that participates in the department’s programs or utilizes its facilities in either organized or informal manner” (p. 29). In an early study, the National Intramural Recreational Sports Association’s (NIRSA) Quality and Importance of Recreational Sports instrument relied on descriptive statistics as a means of assessing the impact of recreational sports programs on participants, as well as their levels of satisfaction (NIRSA, 1991). Ellis et al., (2002) empirically determined that “more frequent participants tend to have more positive health and quality of life” (p. 58). Other recent studies use empirical approaches (Barcelona & Ross, 2002; Collins, Valerius, King, & Graham, 2002) to determine the benefits students derived from participating in recreational sports.

### **Review of Related Literature**

The concept of participation is frequently discussed topic, albeit anecdotally, in the literature of the field of recreational sports. Although Barcelona and Ross (2002) considered “the differential nature of student involvement by gender, age, and place of residence” (p. 42) from a longitudinal perspective. However, they also stated that “One

of the challenges that campus recreational sports professionals face is the lack of empirical research that documents the extent to which participation in recreational sports impact college students” (p. 44). Furthermore, the profession has very little basic empirical research on the subject of participation, in particular a definitive look at students who use recreational sports programs.

In regard to research in the field of recreational sports, in most cases, even when such student demographics as gender, ethnicity, age, college, class standing, residence, and grade point average of student participants are considered, the reader is left with little other than author opinion regarding the significance/importance of the presented information. Maas (1999) discussed the relationship between participation in collegiate recreational sports and ethnicity, class level, and college GPA and certain constructs of success in college, but used only percentages to show such relationships. The National Intramural Recreational-Sports Association commissioned Kerr and Downs to conduct a study that, in part, considered participation and reported a correlation between participation in recreational sports programs and activities and overall college satisfaction and success; yet, proffered no coefficients of correlation to support such a claim (NIRSA, 2004). In an article purporting to assess recreational sports programs and services, Miller, Bullock, Clements, and Basi (2000) provided a series of percentages that could only slightly support the quality and importance of recreational sports programs on the campus of a certain large institution of higher education.

Watson (1998) studied recreational sports participation on the basis of age of the participants. Segmenting the age demographic into the commonly used categories traditional (less than 26 years of age) and non-traditional (26 years of age and above), he found some differences in leisure attitudes and motivations based on age. Watson used analysis of variance to show that men and women students under the age of 26 had significantly higher responses than those 26 years of age and older to several of the attitudes and motivations studied by the researcher. One major question that remained unanswered was which group was more likely to utilize recreational sports programs and facilities.

In another article, Titlebaum, Brennan, and Chynoweth (2002) reported on participation among students with disabilities. This anecdotal article indicated that students with disabilities might be overlooked by intramural directors, especially if they “are not asking for attention, the staff person might think that the current programs are sufficient and that they are doing a successful job” (p. 75) in meeting the participation

needs of students with disabilities. A recreational sports department that regularly monitored the participation levels of its students with self-reported disabilities might have a better idea of whether they are doing a successful job in this area.

Young, Ross, and Barcelona (2003) studied perceived constraints on participation in campus recreation. This research provided long-needed empirical evidence of some of the stated, yet unsubstantiated claims regarding reasons students do not avail themselves of the opportunity to participate in existing collegiate recreational sports programs. The investigators reported that lack of time and lack of knowledge of such programs and activities were both statistically significant constraints to participation.

Another area of participation in recreational sports that is drawing increasing interest is that of motivation for leisure participation. Beggs, Stitt, and Elkins (2004) studied the leisure motivations between recreational sports participants and non-participants and found significant differences on such motivation between these groups. They found non-participants were significantly more likely to be motivated by so-called intellectual and stimulus avoidance factors than participants, leading the researchers to call for different techniques of marketing programs to non-user groups.

Lindsey and Sessoms (2006) considered participation in relation to certain demographics. This research studied several demographics, but found significant differences based only on gender and class standing of the participants. Lindsey and Sessoms used a chi-square test and found significant differences between men's and women's actual participation in recreational sports, in their respective stated desires to participate, and differences in actual participation between juniors and seniors when compared to sophomores and freshmen. Furthermore these researchers reported a significant difference based on class standing on a student's decision to both attend and remain at the institution. Lindsey, Sessoms, and Willis (2009) reported through that men were significantly more likely than women to indicate that the availability of recreational sports programs and facilities had an impact on their decision to both attend and stay at the institution.

Even with the increase in empirically based research on the topic of participation, there remains a need for further investigation. The recreational sports field is rich with opportunities for quantitative, inferential research. Furthermore, studies exist which consider various demographics, but none follow a comprehensive line of inquiry. Finally, little research exists in the campus recreation field that analyzes entry to campus

recreation facilities based on a comprehensive array of demographics. Such a study could provide the field of recreational sports with a basis for benchmarking, as well as further research. Therefore, this investigation examined those who entered a campus recreation facility from an empirical perspective in the hope of obtaining further meaningful data. Therefore, the following null hypotheses were developed for the seven demographic variables studied: no differences exist between the observed and expected frequency of unique entry to the recreation center based on 1) gender, 2) ethnicity, 3) age, 4) class standing, 5) intercollegiate athlete vs. non-athlete, 6) students with self-reported disability vs. students without disability, and 7) campus residence.

### **Methodology**

#### ***Sample***

The study was conducted at a mid-western, four year, state-assisted, Carnegie Designated Doctoral Research Extensive Institution with a combined enrollment of 23,932 undergraduate and graduate students. Only students eligible to use the institution's Student Recreation and Wellness Center were included in the study. Those eligible consisted of students enrolled in five or more credit hours who paid the student activity fee as part of their tuition, and those students enrolled in four or less credit hours who paid a predetermined student activity fee to use the facility. As a result, the combined total of undergraduate and graduate students under consideration in the study was 22,103. This figure represents the population of the investigation. It was determined that a total of 14,032 unique student entries to the Student Recreation and Wellness Center occurred. This represented 61.3% of the total eligible students. The study was a comparative design that compared the entry levels to a collegiate recreation center of students across various demographic categories.

The recreational sports department at the institution provided assistance in gathering participant data on unique entries to its recreation center for a recent academic year through its student membership/usage database. The term unique entries was defined in the study as once a student presented their university identification card and entered the participation areas of the center, for whatever reason, they were counted once and only once. In other words, the study considered single, one-time entries of eligible students rather than cumulative entries throughout the academic year.

The Office of the University Registrar provided access to the Student Information System (SIS), the institution's student database. Although certain demographic characteristics were determined about the groups that entered and the groups that did not enter, confidentiality was strictly maintained in that no individual personal characteristics were associated with any of the groups under study.

### ***Demographics***

The investigation considered differences between an array of demographic variables. In an attempt to provide a comprehensive picture of individuals entering a campus recreation facility, seven demographic categories were analyzed: 1) gender, 2) ethnicity, 3) age, 4) class standing, 5) intercollegiate athlete vs. non-athlete, 6) students with self-reported disability vs. non-disabled, and 7) residence.

### ***Statistical analysis***

In order to compare the categorical variables, the chi-square test of homogeneity was used. This non-parametric statistic determines whether differences occur in the variables studied. The tests were conducted using  $\alpha \leq .05$ .

## **Results**

The chi-square analysis conducted on hypothesis one revealed a statistically significant difference in the unique entries to the recreation center considered in the study based on gender. The analysis indicates men students were more likely than women students to enter the recreation center  $\chi^2(1, N = 22,103 = 97.44)$ ,  $p \leq .001$ .

A statistically significant difference in unique entries to the recreation center considered in the study based on ethnicity was determined. The analysis indicates a significant difference or differences occurred between the categories studied in the ethnicity variable  $\chi^2(5, N = 22,103 = 66.63)$ ,  $p \leq .001$ . The subsequent residual table indicated that African-Americans, as well as the "Other" category entered the recreation center in greater numbers than expected, while Caucasian students entered in significantly fewer numbers than expected. All the other ethnic groups entered in about the frequencies expected within their respective populations, that is, no significant differences were found between observed and expected frequency of entry to the recreation center in any of the other ethnic categories studied.

A statistically significant difference in unique entries to the recreation center considered in the study based on age of students was determined. Traditionally-aged

students (17-24 years of age) were more likely to enter the recreation center than non-traditionally aged students (age 25 and above)  $\chi^2(1, N = 22,092 = 2685.1)$ ,  $p \leq .001$ .

A statistically significant difference in unique entries to the recreation center considered in the study was found based on class standing. Significant differences occurred between the categories studied in the class standing variable  $\chi^2(6, N = 22,103 = 2115.67)$ ,  $p \leq .001$ . The subsequent residual table indicated that Freshmen, Sophomores, and Juniors all entered the recreation center in much greater numbers than expected, while Seniors, Master's and Doctoral level students, as well as the "other" student category all entered in much fewer numbers than expected within their respective populations.

The analysis revealed a statistically significant difference in the unique entries to the recreation center considered in the study based on participation in intercollegiate athletics. Students who participated in intercollegiate athletics were much more likely to enter the recreation center than students who did not participate in intercollegiate athletics  $\chi^2(1, N = 22,103 = 246.86)$ ,  $p \leq .001$ .

No statistically significant difference in the unique entries to the recreation center considered in the study based on self-reported disability was found. Students who reported having a disability were as likely to enter the recreation center than students who did not report having a disability  $\chi^2(1, N = 22,103 = 2.93)$ ,  $p = \leq .05$ .

The analysis revealed a statistically significant difference in the unique entries to the recreation center considered in the study based on residence. Students who lived in the residence halls were more likely to enter the recreation center than commuter students  $\chi^2(1, N = 22,103 = 2246.5)$ ,  $p \leq .001$ .

### **Discussion and Conclusion**

The results of the chi-square analysis on the seven demographics considered in this study have potentially important implications for recreational sport programs and administrators. Previous studies (Lindsey & Sessoms, 2006, Watson, et al, 2006) have suggested relationships among participation by ethnicity, class level, college GPA, and certain success in college. However, these studies used only percentages to show such relationships. This study looked at the observed and expected frequencies of the seven demographics, and used an inferential statistic to test hypotheses. Based on the results of the chi-square analyses statistically significant differences were found within each of the seven demographics.

*Gender:* This study found more male students than female students entered the recreation center. This finding concurs with previous studies that were conducted. In one of these studies, Watson, et al (2006) found that typical users of student recreation centers were significantly younger, more likely to live on campus, be male, not smoke and have been high school athletes. Watson, et al (2006) also used chi-square analysis that revealed males were significantly more likely to exercise for four or more hours per week than females. They also found females were less likely to participate in physically based extra-curricular activities or to have participated in high school athletics. In another study, Robinson (1988) investigated the amount of discretionary time used for recreation among males and females and found males participated in recreation activities about 2.2 hours per week while females participated about 0.7 hours per week. In terms of impact on recreation participation, Watson (1998) reported that males averaged more time than females. These findings were based on leisure attitudes and leisure motivation toward recreation participation. However, in an earlier study that focused on frequency of student involvement in campus recreation programs conducted by the NIRSA (Holsberry & Kovac, 1991), findings suggested that “female and traditional students were the groups most satisfied with recreation on campus” (p. 1). Similarly, Lindsey and Sessoms (2006) cited that 85% of the female students reported that they would like to participate in recreational sports at least once during the week. The researchers used chi-square analysis which revealed a significant difference between gender and the number of times per week active recreational sports participation occurred. Females were more likely than males to participate in active recreational sports pursuits one to three times per week and four to six times per week. Additionally, females reported that they wanted to participate more than they actually did. In contrast, we found that the females enter the recreation center less often than males. Interestingly, a study conducted by Snodgrass and Tinsley (1990) at California Polytechnic and State University in San Luis Obispo found that overall participation percentages were equal between men and women, but men participated with greater frequency than women, with 76 percent of men and 63 percent of women participating daily or weekly. Frauman (2005) found that just over one half (50.8%) of respondents who used campus recreation programs and facilities were male and fewer male were non-participants (41.4%).

Barcelona and Ross (2002) examined participation patterns in campus recreational sports from 1983 to 1998. They found that when data were collapsed across

all years that men appeared to be more involved in recreational sports activities than women. While men appeared to be more frequently involved in recreational sports than women, the women were more likely to be involved in individual athletic pursuits than in group or team sport activities.

*Race:* This study found that more African Americans and the "Other" category were observed entering the recreation center in significantly greater numbers than expected. In a previous study by Lindsey and Sessoms (2006), thirty five percent of African-Americans indicated that the availability of recreational sports was important/very important in deciding to continue at the college. Sixty-five percent reported that sports and fitness activities would be important/very important to them after graduation. Furthermore, in a more recent pilot-study, Lindsey, Sessoms, and Willis (2009) assessed the impact of campus recreational sports facilities and programs on student recruitment and retention among male and female African American students. These researchers found that seventy-seven percent of respondents indicated that they participated in some form of recreational sports each week, while over forty-two percent participated four or more times per week. Furthermore, seventy-nine percent stated that they would like to participate in recreational sports each week. Additionally, Lindsey et al (2009) found that sixty percent of the male students reported the availability of recreational sports was important/very important in deciding to attend the college and sixty-eight percent of the males reported that the availability of recreational sports was important/very important in deciding to continue attending the college.

*Age :* The age of a participant is another important variable in terms of use of recreation centers. This study revealed more traditionally-aged students than non-traditionally-aged students entered the recreation center. Previous studies (Shaw et al, 1991, Harvey and Singleton, 1989) reported similar results. These studies cited the highest amounts of recreation participation time were usually among individuals aged 25 and under with the lowest amounts being in the 26 years of age and older group. This rate of participation was confirmed in a study by Timmer (1981), when it was found that recreation participation time declined across the lifecourse from twenty-five percent for those 18 years and under to three percent for those 65 years of age and over. Similarly, Barcelona and Ross (2002) found that younger students (22 years of age and younger) appeared to be more involved in organized campus sports such as informal sport or fitness and exercise activities than older students. Frauman (2005) also found that non-

participants of campus recreation were significantly older than participants of campus recreation with an average age of 25.1 versus 22.2.

*Class rank:* This study revealed that freshmen, sophomores and juniors were observed entering the recreation center more frequently than expected, contrary to the findings of Lindsey & Sessoms (2006). Although the focus of Lindsey and Sessoms' study was on student recruitment and frequency of participation in campus recreation programs, juniors and seniors reported that they were more likely to participate in recreational sport activities than freshmen and sophomores. Furthermore, juniors and seniors reported that they were more likely to participate in active recreational sports one to three times, four to six times, and seven to nine times per week than were freshmen and sophomores. However, when investigating negotiation strategies on overcoming barriers to participation in campus recreational sports programs, Beggs, et al (2005) found no differences based on level of education (freshmen, sophomore, junior, senior). The most common method of negotiation used by students at each level of education was to participate in activities that they were good at.

*Athletes/Non-athletes:* According to the findings in this study, more athletes than non-athletes were observed entering the recreation center. Similarly, Watson, et al (2006) found that student recreation users were significantly more likely to have participated in high school athletics than nonusers. Although this finding is not surprising, it certainly serves as something of a benchmark in the field since little research exists that compares the recreational participation of college athletes to non-athlete students.

*Self-reported disabilities:* According to *Healthy People 2010* (US Department of Human Services, 2000), approximately sixty percent of individuals with disabilities did not participate in physical activity. However, in this study, students with self-reported disabilities were just as likely to enter the recreation center than students without a self-reported disability. This finding is contradictory to those of Yoh, Mohr, and Gordon (2008). Yoh, et al's study examined the use of recreation facilities among college students with physical disabilities. They found that the use of campus recreation facilities among such college students was low. Their findings revealed that sixty-eight percent of the participants used recreation facilities less than five times in a semester. This means that only thirty-two percent reported using the facility more than five times in a semester. Only nine percent of female students with disabilities used the facilities more than five times in a semester, while fifty-eight percent of male students with disabilities used

school recreational facilities more than five times per semester. The authors are well aware that the institution where the Yoh, et al (2008) study was conducted was well equipped with programs and adaptable equipment that accommodated students with disabilities. Furthermore, research consistently reports that the physical activity and sport participation among people with disabilities is significantly lower than the general population (Gillespie, 2002; U.S. Department of Human Services, 2000).

*Commuter/Residence Hall:* This study found that students who lived in residence halls were more likely to enter the recreation center than commuters. Similarly, Watson, et al (2006) found that 80% of nonusers of recreation centers were more likely to live off-campus. Barcelona and Ross (2002) found significant differences in the involvement by place of residence when their data were collapsed across all years (1983-1998). Students who lived on campus tended to participate in a variety of recreational sport activities with greater frequency than students who lived off campus. In terms of usage of campus recreational sports programs and facilities, Beggs, Elkins and Powers (2005) investigated overcoming barriers to participation in this area. They found that students who lived on campus indicated that they were significantly more likely to use campus resources to learn about activities than students who lived off campus. Similarly, Frauman (2005) found that fewer commuters participated in campus recreation than was expected, while the same was not found for commuter non-participants.

### ***Limitations***

One of the limitations of this study is the use of the chi-square statistic. Chi-square is a non-parametric statistic that relaxes assumptions about the mean and is theoretical in nature, comparing observed frequencies to expected frequencies based on the existing populations of the variables studied. Although not the most powerful statistic, it does not deal with causation, chi-square still allows meaningful inferences.

Another limitation is the study of a single institution. Such a study does not allow for generalization to other institutions of higher education, but it does provide important, relevant, empirical information that can be used for further study of the area of participation in collegiate recreational sports.

A further limitation deals with unique entries versus cumulative entries; persons could enter once and be part of the frequency calculation. Another element of unique entry is that it was not fully known what the entrants did after they entered, and if they only entered once, it could have been for something other than participation (but not likely). It was assumed that the students who entered the recreation center were going to

use the facility for participation in recreational activity since identification was required for entry, and there was little else to do after entering. As is typical in the field of campus recreational sport, there was no way of tracking what the students did after they entered the recreation center. Therefore, further data needs to be collected, especially data that considers cumulative entries.

The data do not show the extent to which participation in recreational sports has on the impact of college students and their health. As Ellis, et al (2002) stated, "More frequent participants tend to have more positive health & quality of life." Furthermore, previous studies have shown the relationship of participation in recreation centers and student attrition (Churchill & Iwai, 1981), retention and recruitment (Belch, Gebel, & Maas, 2001; Bryant, Banta, & Bradley, 1995; Lindsey & Sessoms, 2006), academic performance (Belch, et al, 2001, Watson et al, 2006) and students overall satisfaction with their college experience (Dalgarn, 2001).

### ***Implications***

There are several implications this research has for the recreational sport field, particularly within demographic categories. Therefore, discussion of the implications for recreational sports within the categories follows.

*Gender:* Although women enter the recreation center in greater frequency than men at this particular institution, men are still significantly more likely to enter based on the population. Recreational sports administrators at this particular institution should not be drawn in to believe that the raw numbers indicate that women are more likely to enter. There should continue to be an emphasis in marketing, program development, and resource allocation that will attract female participation in both the recreation program and to leadership roles as student employees, club managers, recreational student advisory boards members and the like. Also, recreational sports programs should be concerned about addressing participation equity due to Title IX since the legislation addresses equity issues in recreation as well as athletics.

*Race:* The trend in recreational sport regarding participation based on ethnicity is that African-American students find campus recreation programs and facilities to be of high importance (Lindsey et al, 2009). The findings of this study support that trend. This has important and potentially far reaching implications for recreational sport programs and administrators, as well as institutions of higher education that are trying to recruit and retain people of color, in particular African-Americans. Recreation and sport appears to be a significant part of the lives of African American students. Perhaps

recreation centers can be the new gathering place for students of color, with expanded services that would better cater to the needs of such students.

*Age:* It is evident from the results of the study that traditionally aged students at the institution entered the recreation facility in far greater numbers than non-traditionally aged students. This could be accounted for, perhaps, by considering that many of the non-traditionally aged students may also be part of the commuter population. Further analysis needs to consider segmenting the commuter population based on geographic location

*Class Rank:* The importance of the findings in the class rank category can be found as an internal revelation, more political. Information can be shared with professors, deans, and enrollment managers---the academic side of the institution. There tends to be a feeling in certain pockets of the academic side that recreation and recreation facilities are frivolous and constitute unnecessary expense to students. However, when such individuals become aware of the levels of participation among students within their schools and colleges, they have a tendency to reconsider the value of such programs.

*Athletes/Non-athletes:* No research exists to date that compares the recreational participation patterns of collegiate student-athletes vs. student non-athletes. The findings of this study are meaningful therefore, in that they are unique to the field of recreational sports. Athletes were found to enter the recreation facility in significantly greater numbers than non-athletes the implications of which are two-fold. First, recreational sport administrators can observe that athletes use the facilities in high numbers, and second programs should be directed toward accommodating this highly active group of student participants.

*Self-reported disabilities:* The Director of Student Disability Services at the institution that was studied was asked whether she thought students with self-reported disabilities would enter in greater numbers than expected, fewer numbers than expected, or about the same numbers as expected when compared to students who did not have a self-reported disability. She predicted that students with self-reported disabilities would enter in far fewer numbers than expected than those students without a self-reported disability (Milton, Interview, 2006). At least one other study found that students with disabilities are less likely to participate (Gillespie, 2002). However, this study found that students with self-reported disabilities were as likely to enter the recreation facility as those students without a self-reported disability. The implications of

this for recreational sport administrators are considerable. The most obvious is that programs, facilities, and staff should continue to be made available and perhaps increased, to accommodate students with disabilities. This should include programs, facilities, and staff that provide both special opportunities and opportunities that mainstream students with disabilities. Less obvious would be the hiring of staff that have a self-reported disability who could serve as role models to students, as is called for as part of other institutional diversity measures.

*Commuter/Residence Hall:* The findings of this study indicate that students that lived in the residence halls were far more likely to enter the recreation facility. Although this does not come as a particular surprise given the proximity of residence halls to recreation facilities on most college campuses, the implications are still compelling for recreational sport administrators. This is an area where resources might need to be redirected toward the commuter student. The institution should more closely consider its commuter population, and perhaps develop recreational sport programs that would be of more interest to this population.

### ***International Implications***

Although the United States perhaps leads the world in the provision of recreational programs and facilities on its many college and university campuses, the international community has come to understand the importance of offering such opportunities directly to students, faculty, and staff. Even a cursory scan of higher education institutions around the world leads to such a conclusion. For example, multi-use recreation facilities exist in such places as Conestoga College in Kitchener, Ontario, Canada (The Recreation Centre), The University of Strathclyde in Glasgow, Scotland (The Centre for Sport and Recreation, and the Sport Science Institute of South Africa at the University of Cape Town (The Wellness and Fitness Centre). As this trend continues, the findings of this study take on more global importance.

First, it could be conjectured that as recreational facilities begin to proliferate on the college campuses of the world, recreational sport administrators need to consider the same types of issues discussed in the implications section above. The data would suggest that any institution of higher education would be well-advised to provide increased recreational resources and opportunities for female students, commuter students, students who are in the latter portion of their undergraduate degrees or students in graduate programs, and non-traditionally aged (26 years of age and older) students. This study found that U.S. students in the aforementioned categories

underutilized recreational programs and facilities, and institutions of higher education outside the U.S. can take this information and use it to provide more appropriate opportunities for such students. Also, it is important to note that students with disabilities in the U.S. use the facilities in about the same numbers (per capita) as students without a disability. The international community can use this information to be provide a more comprehensive set of programs and facilities that would reach out to students with disabilities.

Second, as institutions of higher education outside the United States experience more demand on the part of students for recreational opportunities on or near campus, professional administrators need to be prepared for an increase in usage patterns. It is a well established fact that as indoor recreation facility development and construction increased in the U.S., student (and faculty and staff) usage of such programs has increased. Furthermore, with the increased awareness of the link between physical well-being and overall wellness, the general U.S. population has clamored for recreational opportunities that foster a lifetime of physical activity. Therefore, colleges, municipalities, even countries need to be prepared for an increase in interest and use of recreational facilities and programs.

Finally, as competition for students increases among the world's institutions of higher education, providing students with amenities such as convenient, affordable programs and facilities that promote and enhance a healthier lifestyle becomes preeminent. Institutions of higher education outside the U.S. should also consider that American students are, more and more, supplementing their U.S. based education with study abroad programs and will look for such amenities as an on campus recreation facility as they consider their options. Furthermore, U.S. institutions of higher education need to remain current as more American students seek degrees at all levels outside the country.

### ***Future Research***

Future research could focus on service quality and user satisfaction measurements to demonstrate accountability, effectiveness, and efficiency of programs, and overall success of campus recreation centers. Osman, Cole, and Vessell (2006) suggested that improving the availability and quality of recreational equipment, providing flexible hours of operation, training and maintaining a competent and empathetic staff, and maintaining a clean environment are vital to user satisfaction. Furthermore, findings from this study have important implications for development of program offerings as well

as for recreation directors in marketing those programs. Marketing strategies such as assessing student experiences in facilities, providing more opportunities to ensure student use of facilities, decreasing barriers to facility use, and identifying creative ways to further expose students to the facilities will help increase usage of campus recreation centers. Also, this type of information would be valuable to a campus recreation department, as well as provide information for a division of student affairs to assist in better understanding the relationship between student involvement in recreational activities and the overall college experience.

### References

- Barcelona, R., & Ross, C. (2002). Participation patterns in campus recreational sports: An examination of quality of student effort from 1983 to 1998. *NIRSA Journal*, 26(1): 41 – 53.
- Beggs, B.A., Elkins, D.J. & Powers, S. (2005). Overcoming barriers to participation in campus recreational sports. *Recreational Sports Journal*, 29(2): 143-155.
- Beggs, B., Stitt, J., & Elkins, D. (2004). Leisure motivation of participants and nonparticipants in campus recreational programs. *Recreational Sports, Journal* 28(1): 65 – 77.
- Belch, H. A., Gebel, M., & Mass, G. M. (2001). Relationship between student recreation complex use, academic performance, and persistence of first-time freshman. *NASPA Journal* 38(2): 254-268.
- Bryant, J. A., Banta, T. W., & Bradley, J. L. (1995). Assessment provides insight into the impact and effectiveness of campus recreation programs. *NASPA Journal*, 32(2): 153-160.
- Churchill, W. D. & Iwai, S. I. (1981). College attrition, student use of campus facilities, and a consideration of self-reported personal problems. *Research in Higher Education*, 14: 353-365.
- Collins, J., Valerius, L., King, T., & Graham, A. (2001). The relationship between college students' self-esteem and the frequency and importance of their participation in recreational activities. *NIRSA Journal* 25(2): 38 – 47.
- Dalgarn, M. K. (2001). The role of the campus recreation center in creating a community. *NIRSA Journal*, 25: 66-72.
- Ellis, G., Compton, D., Tyson, B., & Bohlig, M. (2002). Campus recreation participation, health, and quality of life. *NIRSA Journal*, 26(2): 51-60.

- Frauman, E. (2005). Differences between participants and non-participants of campus recreation offerings across demographic variables and perceptions of the college experience. *Recreational Sports Journal*, 29(2): 156-165.
- Gillespie, M. (2002). Attitudes of university students toward an integrated campus recreation programs. *Palaestra*, 18(3): 27-32.
- Holsberry, W., & Kovac, N. (Eds). (1991, Fall). *Newsletter of the National Intramural-Recreational Sports Association*. Corvallis, OR: NIRSA.
- Lindsey, R., Sessoms, E., & Willis, G. (2009). The impact of campus recreation sports facilities and programs on student recruitment and retention among male and female African-American students: A pilot study. *Recreational Sports Journal*, 33(1): 25-34.
- Lindsey, R., & Sessoms, E. (2006). Assessment of a campus recreation program on student recruitment, retention, and frequency of participation across certain demographics. *Recreational Sports Journal*, 30(1): 30-39.
- Maas, G. (1999). Relationship between campus recreation participation and measures of college success. Paper presented at the 50<sup>th</sup> Annual Conference of the NIRSA, Milwaukee, WI.
- Miller, G., Bullock, C., Clements, J., & Basi, M. (2000). Assessment of programs and services. *NIRSA Journal*, 24(1): 19-30.
- Milton, P. (2002). Leadership attitudes and behaviors of the effective recreational sports director. (Doctoral dissertation, Kent State University, 2002). *Digital Dissertations*, 3057409.
- NIRSA (2004). The Value of Recreational Sports in Higher Education: Impact on student enrollment, success, and buying power. Human Kinetics: Champaign, IL.
- Noyes, B. (1996). The program. *Athletic Business*, 20(4), 29-36.
- Osman, R. W., Cole, S. T., & Vessel, C. R. (2006). Examining the role of perceived service quality in predicting user satisfaction and behavioral intentions in a campus recreation setting. *Recreational Sports Journal*, 30(1), 20-29.
- Snodgrass, M. L. & Tinsley, C.E. (1990). Recreation and wellness: Identifying motivations for participation in recreational sports. *NIRSA Journal*, 15(1): 34-38.
- Titlebaum, P., Brennan, K., & Chynoweth, T. (2002). We want to play too. *Recreational Sports Journal*, 26(2): 74 – 78.

- US Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and Improving Health*. Washington: U.S. Government Printing Office.
- Watson, J., Ayers, S., Zizzi, S., & Naoi, A. (2006). Student recreation centers: A comparison of users and non-users on psychosocial variables. *NIRSA Journal*, 30(1): 9-20.
- Watson, J. (1998). A comparison of traditional and non-traditional students' leisure attitudes and leisure motivations. *NIRSA Journal*, 22(4): 22-30.
- Yoh, T., Mohr, M., & Gordon, B. (2008). Assessing satisfaction with recreational sport Facilities among college students with physical disabilities. *Recreational Sports Journal*, 32(2): 106-113.
- Young, S., Ross, C., & Barcelona, R. (2003). Perceived constraints by college students to participation in campus recreational sports programs. *Recreational Sports Journal*, 27(2): 47-62.