The Influence of University Recreation Centers on Student Return and Retention During COVID-19

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Abstract
Due to the COVID-19 pandemic, university and college student enrollment has decreased by slightly more than 5% from fall 2019 to the present. While previous studies have revealed that student involvement in recreation center activities increases return and retention at college campuses, are these results still true during the COVID-19 pandemic? The results indicated that students agreed they returned and planned to remain at the university due to a sense of belonging created from involvement in recreation center activities. The results also revealed significant relationships between underclassmen and a sense of belonging from participating in recreation center activities. Because of the COVID-19 pandemic, it is estimated that universities may lose between $17-$30 billion by 2025. From an applied viewpoint, the results offer information for university administrators to better understand how a student recreation center may attract and retain students during this unstable time in the United States higher education.

Keywords
Sense of belonging, student return, student retention, university recreation centers

The time between the spring of 2020 through the present day has been one of the most turbulent in the history of higher education in the United States since most colleges and universities had to pivot their operations due to the COVID-19 pandemic (Schleicher, 2020). In response, a majority of universities and colleges in the United States sent residential students home due to the high-risk environments for COVID-19 transmission on campuses (Jackson et al., 2021). As a result, university enrollments decreased between the fall of 2020 to the fall of 2021 by 2.7% (National Student Clearinghouse, 2022). Overall, university and college enrollment continued to decrease

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due to the pandemic by 5.1 percent or 938,000 students since fall 2019 (National Student Clearinghouse, 2022).

The onset of the COVID-19 pandemic has created liquidity as well solvency challenges to many universities and colleges throughout the United States (Kelchen et al., 2021). While university and college administrators have been concerned about student retention at their institutions for many years (Tight, 2020), COVID-19 presents unique challenges to student returning to campus as well retention once the students return. Since state and federal government funding is predicated on student retention, the failure to achieve certain retention standards may result in the university losing a significant amount of money (Mitchell et al., 2019). Kelchen et al. (2021) projected revenue losses of between $17 billion to $30 billion will occur between 2020 and 2025 due to students not enrolling or returning to university and college campuses. Thus, while it is important for tertiary institutions to attract students back to campus, it might be even more important to retain them (Haverila et al., 2020).

Many students were reticent to return to college and university campuses in the United States during the COVID-19 pandemic. Studies conducted before the COVID-19 pandemic revealed that involvement in university student recreation center activities had a positive influence on student retention and sense of belonging (Kampf & Teske, 2013; Miller, 2011; Milton et al., 2020). However, are these results still true during the recent COVID-19 pandemic?

The purpose of this unique study was threefold. The first purpose was to determine whether involvement in student recreation center activities influenced students to return to campus during COVID-19. The second purpose was to ascertain whether involvement in university recreation activities influenced student retention at the university during the COVID-19 pandemic. The third purpose was to determine whether any significant relationships existed between gender, school classification, and involvement in recreation center activities (including intramural and outdoor activities) to student sense of belonging and retention at the university during the COVID-19 pandemic.

Review of Literature

Sense of Belonging

Maslow (1962) referred to a sense of belonging as a fundamental human motivation in which individuals possess a strong desire to remain with a group. Maslow’s hierarchy of needs (1943) addresses a sense of belonging as the third of five levels of human motivation. The first level of Maslow’s hierarchy of needs recognizes the physiological needs such as air, food, shelter, drink, sleep to remain alive.

Maslow (1943) indicated that once individuals achieve the physiological requirements, the next level is safety. Malone (2016) found that a sense of belonging was increased by a perceived safe environment. After the physiological and safety levels of hierarchy are satisfied the individual’s sense of belonging will emerge (Maslow, 1954). As such, Maslow’s hierarchy model in this study refers to the various needs such as basic physiological, social affiliation, and safety needs which perform roles in shaping an individual’s actions towards a particular product or service (Cui et al., 2021).

College student recreation centers are common places for students to gather and experience a sense of belonging (Miller, 2011; Tinto, 1993). When students perceive a sense of belonging, they may feel appreciated as individuals and valued as part of the campus community (Cheng, 2004). Moffitt (2010) proposed that students who participate in university student recreation center activities are more likely to “demonstrate a sense of belonging in the community, have more interactions with peers, have increased emotional health, and increased leadership potential at the university” (p. 31). Previous studies have shown that students of all ages and from various demographic backgrounds can benefit from involvement in recreational activities. These benefits included increased interpersonal relationships and an improved sense of belonging to the university (Kirchenman, 2009).

Student Retention

While studies have reported that a sense of belonging is needed for student retention (Gayles & Baker, 2015; Gillen-O’Neel, 2021; Morrow &
Ackerman, 2012; Sriram et al., 2020), Thomas (2012) was more emphatic by stating that a sense of belonging is “critical to student retention” (p. 10). Campus recreational activities and services have been associated with the retention of students as those who choose to participate had a “99% fall-to-fall retention rate entering year two, and a 98% year three and year four retention rate” (Forrester et al., 2018, p. 69). Zegre et al. (2020) analyzed the relationship between university recreation facility involvement and the retention of full-time undergraduate students. The results of the study indicated a positive and significant relationship between full-time, first-time undergraduates and recreation center facility use.

McElveen and Ibele (2019) conducted a study of first-year retention rates of Division III student-athletes. The results of the study reported that intramural participants exhibited a higher retention rate than student-athletes. Kampf and Teske (2013) analyzed the relationship with students who participated in student recreation center programs and found that student involvement in club activities offered by the recreation center was two times as likely to remain at the university until graduation than those who did not participate. In a quantitative analysis of more than 450 undergraduate students, Miller (2011) assessed the impact of the use of a student recreation center on student retention. The results showed a significant relationship existed between student involvement in recreation center activities and student retention.

**Purpose of the Study**

Previous studies have revealed that student involvement in recreation center activities motivate students to return and remain at college campuses (Miller, 2011; Milton et al., 2020). However, during these uncertain times, many students are apprehensive about returning to a university campus due to the COVID-19 pandemic. Thus, the purposes of this research are to examine the following questions:

- **RQ1:** Will involvement in university recreation center programs influence students to return to campus during the COVID-19 pandemic?
- **RQ2:** Will a sense of belonging due to involvement in university recreation center programs motivate students to remain enrolled in the university during the COVID-19 pandemic?
- **RQ3:** Will significant relationships exist between gender, school classification, and involvement in recreation center activities (including outdoor activities) to student sense of belonging and retention at the university during the COVID-19 pandemic?

**Methodology**

**Participants**

The study took place at a research-intensive university in the southern part of the United States. After receiving Institutional Research Board (IRB) approval, the authors worked with the marketing director of the recreation center to generate a list of students who had worked out or participated in recreation center activities at least once per week, not including holidays, during the 2020 fall and beginning of the 2021 spring semester. It was determined that 400 students ranging from freshmen to graduate students met the criteria.

**Convenience Sampling**

Dörnyei (2007) indicated that students who attend the same university as the researcher are prime examples of convenience sampling. Convenience sampling occurs when the population is easily accessible and had the knowledge of the topic being investigated (Andrew et al., 2011). As a result, a convenience sampling technique was used in this study because the population met particular criteria of subjects being readily available and homogenous (i.e. students who worked out or participated in recreation center activities) (Etikan et al., 2016).

**Instrument**

A seventeen-item questionnaire was developed for this investigation. The development of the questionnaire was guided by a combination of the extant literature on the students’ needs in an evolving campus recreation environment including...
retention and sense of belonging (Huesman et al., 2009; Strayhorn, 2016). The first three items were based on the respondent’s demographics (e.g. school classification, gender, and the number of times the respondents participated in recreation center activities). It should be noted that the term “recreation center activities” included intramurals, individual workouts, and outdoor recreation activities. The next 15 items were Likert scale (1 = strongly agree to 5 = strongly disagree).

A pilot test was conducted to establish question sensitivity, understanding, and appropriateness. The input from the pilot study was gleaned from four staff members, four graduate students, and four faculty members with experience in survey-based research. Item construct on student sense of belonging and retention employed a Likert scale ranging from 1 = strongly agree to 5 = strongly disagree. All items were measured revealing a good internal consistency of .78 and reliability with a Cronbach’s alpha coefficient of .82 that was deemed acceptable (Nunnally & Bernstein, 1994). The questionnaire was distributed to the previously described 400 candidates using Qualtrics. Over four weeks in the 2021 spring semester, 142 out of 400 students fully completed it for an acceptable return rate of 36% (Baruch, 1999).

**Data Analysis**

Descriptive statistics were used to analyze the demographic data of the respondents. Means, as a measure of central tendency, and standard deviations, as a representation of variation were used to analyze the student demographics. The means and standard deviations were also employed to analyze student perceptions of having a sense of belonging to the university and retention. A Pearson’s correlation analysis was employed to determine if significant relationships existed between the respondent’s gender, school classification, or involvement in recreation center activities and their return to campus and retention at the university. An alpha level was set at < .01.

**Results**

**Demographics**

Of the 142 individuals that responded 78 (55%) were female and 64 (45%) were male. Furthermore, 41 (29%) identified as freshmen, 31 (22%) were sophomores, 22 (15%) were juniors, 19 (13%) were seniors, 18 (12%) were graduate students, and 11 (9%) were doctoral students. When asked how many times per week they worked out in the student recreation center activities 46 (32%) indicated at least once per week, 37 (26%) three times per week, and 22 (16%) five times per week. Furthermore, 74 (52%) did not participate in any intramural activities. Finally, 49 (34%) of the respondents did not participate in outdoor recreation activities which included hiking trails, canoeing, kayaking, and swimming with manatees (see Table 1).

| Table 1. Demographic Information. | Frequency | Percentage |
|-----------------------------------|-----------|------------|
| Gender                            |           |            |
| Female                            | 78        | 55         |
| Male                              | 64        | 45         |
| Class level                       |           |            |
| Freshman                          | 37        | 26         |
| Sophomore                         | 28        | 20         |
| Junior                            | 24        | 17         |
| Senior                            | 23        | 18         |
| Masters                           | 18        | 13         |
| Doctoral                          | 12        | 9          |
| Involvement in activities         |           |            |
| Number of individual workout times per week |           |            |
| Once per week                     | 46        | 32         |
| Two times per week                | 15        | 10         |
| Three times per week              | 37        | 26         |
| Four times per week               | 17        | 12         |
| Five times per week               | 22        | 16         |
| More than 5 times per week        | 5         | 4          |
| Number of intramural activities participated |           |            |
| No intramural activities          | 74        | 52         |
| 1-2 intramural activities         | 40        | 28         |
| 3-4 intramural activities         | 18        | 13         |
| More than 4 activities            | 10        | 7          |
| Number of outdoor recreation activities participated |           |            |
| No outdoor activities             | 93        | 66         |
| 1-2 outdoor activities            | 44        | 31         |
| More than 2 outdoor activities    | 5         | 4          |
University Recreation Center Influences on Student Return During COVID-19 Pandemic

The respondents agreed that their return to the university was due to the sense of belonging created from involvement in recreation center activities ($M = 1.96, SD = 1.03$). Moreover, the respondents revealed that satisfaction with the number and types of activities offered at the campus recreation center was a reason they returned to campus ($M = 2.21, SD = .92$). The respondents indicated that they returned to campus due to the belief that they could participate safely in the recreation center activities ($M = 2.25, SD = .92$). Additionally, the ability to be physically active in the student recreation center offerings highlighted the respondent's rationale to return to campus ($M = 2.54, SD = 1.04$). Other influences involvement in recreation center activities had on student return to campus included their ability to interact ($M = 2.43, SD = 1.08$), creating a network of friends ($M = 2.46, SD = .97$), and trust in their peers ($M = 2.67, SD = .90$). Finally, despite their involvement in recreation center activities, the students did not perceive a responsibility to the university ($M = 4.34, SD = 1.32$) as a reason to return to campus (see Tables 2 and 3).

Table 2. University Recreation Center Influence on Student Return During COVID-19 Pandemic.

|                                | Mean  | SD   |
|--------------------------------|-------|------|
| My sense of belonging, gained from in student recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 1.96  | 1.03 |
| My satisfaction with the number and types of recreation center activities was a reason for me to return to campus during the COVID-19 pandemic | 2.21  | .92  |
| Being able to safely participate in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 2.25  | .92  |
| My ability to interact with new people, gained from my involvement in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 2.43  | 1.08 |
| Interact with a network of friends, gained from my involvement in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 2.46  | .97  |
| Being able to be physically active due to my involvement in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 2.54  | 1.04 |
| My trust in my peers, gained from my involvement in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 2.67  | .90  |
| My sense of responsibility to the university, gained from my involvement in recreation center activities, was a reason for me to return to campus during the COVID-19 pandemic | 4.34  | 1.32 |

Table 3. University Recreation Center Influences on Retention During COVID-19 Pandemic.

|                                | Mean  | SD   |
|--------------------------------|-------|------|
| The reason I did not leave the university during the COVID-19 pandemic was my sense of belonging created by my involvement in the recreation center activities | 2.11  | 1.44 |
| The trust I received from peers from my involvement in student recreation activities was a reason I stayed at the university during the COVID-19 pandemic. | 2.20  | .97  |
| The reason I stayed at the university was due to my interactions with new people in recreation center activities during the COVID-19 pandemic. | 2.33  | 1.04 |
| I stayed at the university due to being able to creating a network of of friends in recreation center activities during the COVID-19 pandemic. | 2.43  | 1.01 |
| I stayed at the university due to my commitment to my peers participating in recreation center activities during the COVID-19 pandemic | 2.96  | 1.03 |
| I thought about leaving the university during the COVID-19 pandemic | 4.03  | 1.71 |
**University Recreation Center Influences on Retention During COVID-19 Pandemic**

The respondents did not agree that they had contemplated leaving the university during the COVID-19 pandemic ($M = 4.03$, $SD = 1.71$). The primary reason the students did not leave the university during the pandemic was due to a sense of belonging generated from their involvement in the recreation center activities ($M = 2.11$, $SD = 1.44$). The respondents perceived that they would remain at the university because of the trust they had in their peers ($M = 2.20$, $SD = .97$), interactions with new people ($M = 2.33$, $SD = 1.04$), ability to create a network of friends ($M = 2.43$; $SD = 1.01$), and commitment to their peers ($M = 2.96$, $SD = 1.034$) due to participating in student recreation center activities.

An important reason for the respondents to stay at the university was due to their satisfaction with the student recreation center activities during the COVID-19 pandemic ($M = 2.53$; $SD = 1.26$). The satisfaction extended to the respondents feeling safe while participating in the recreation center activities ($M = 2.62$, $SD = 1.04$). Finally, the students remained at the university because participating in the activities offered at the recreation center made them feel better about themselves ($M = 2.20$, $SD = .97$).

**Pearson’s Correlation Analyses**

**Academic classification.** A Pearson’s $r$ revealed positive relationships between academic classification of students and the sense of belonging ($r(137) = .23$, $p < .01$), interact with friends ($r(137) = .36$, $p < .01$), sense of safety ($r(137) = .28$, $p < .01$) due to involvement in student recreation activities during the COVID-19 pandemic. No other relationships were found.

**Gender.** A Pearson’s $r$ analysis also showed significant relationships between the gender of the respondents and a sense of belonging ($r(140) = .61$, $p < .01$) and interacting with friends ($r(140) = .27$, $p < .01$) due to involvement in student recreation center activities during the COVID-19 pandemic. However, a negative relationship emerged concerning the student considering leaving the university ($r(140) = -.20$, $p < .01$). No other relationships were observed.

**Student involvement in individual workout activities.** A Pearson’s $r$ revealed positive and significant relationships between student involvement in recreation center activities per week during the pandemic and a sense of safety ($r(138) = .25$, $p < .01$). However, a negative relationship was found between the number of times per week the respondent worked out per week and satisfaction with the university ($r(138) = -.22$, $p < .01$). No other relationships were observed.

**Student involvement in intramural and outdoor activities.** A Pearson’s $r$ indicated that no relationships were found between the involvement in intramural activities the respondent participated in and the sense of belonging and retention at the university during the pandemic. Additionally, no relationships were observed between the number of outdoor recreation activities the respondents had participated in and the sense of belonging nor retention at the university during the COVID-19 pandemic.

**Discussion**

Universities and colleges are in the most perilous financial point since the Great Recession because of the COVID-19 pandemic (Kelchen et al., 2021). Due to COVID-19 enrollment has fallen at non-profit, public tertiary institutions by 5.1% or 937,500 students since the start of the COVID-19 pandemic (National Student Clearinghouse, 2022). This information is significant as tuition and fees, not including institutional grant aid to students, are the second-largest producers for non-profit, public universities in the United States (Kelchen et al., 2021). Additionally, universities may lose significant revenue from the lack of dining, housing, and other campus services (Kelchen et al., 2021).

Prior studies have noted that university administrators and student affairs professionals have begun to formally recognize the impact of campus recreation activities on the retention of students (Miller, 2011; Milton et al., 2020). However, no other studies have been conducted to determine whether campus recreation centers continue to influence student return or retention during the
COVID-19 pandemic. Thus, the purpose of this study was to gain insights into if university recreation center activities influenced students to return to campus, a sense of belonging, and retention during the COVID-19 pandemic.

To address the first research question, the results revealed that students returned to campus during the COVID-19 pandemic due to a perceived sense of belonging from involvement in university recreation center activities. Furthermore, the students in this study revealed that satisfaction with the number and types of activities as well as being physically active by options offered by the recreation center were significant reasons for their return to campus. While these results support previous research indicating that benefits of recreation center activities include holistic and physical wellness, as well as stress reduction (Henchy, 2011; Lindsey & Sessoms, 2006), the need to be involved in such activities, maybe even greater during the COVID-19 pandemic (Shek, 2021).

The respondents also perceived that being able to safely participate in the recreation center activities was an important consideration for returning to campus. Other reasons the respondents considered returning to campus included interacting with new people, friends, and trust in others participating in recreation center activities. Thus, the results suggest that since the university recreation center satisfied the first three levels of Maslow’s Hierarchy of Needs (physiological, safety, and belonging), the respondents felt comfortable in returning to campus.

Similar to reasons why the respondents returned to campus, the results revealed that the students who remained at the university during the COVID-19 pandemic were a sense of belonging created by trust, interactions, and commitment to their friends that were developed from involvement in the campus recreation center activities. Tinto (2006) contended institutions of higher education should emphasize what can be done to retain students. Furthermore, researchers have indicated that students who possess a sense of belonging tend to take part in recreation center activities (Lower et al., 2013; Miller, 2011). It is through their involvement in university activities that students have an increased sense of belonging (Appleton et al., 2006; Tinto, 1993).

A Pearson’s r analysis revealed that the academic classification of the students was significantly associated with returning to the university and sense of belonging during the COVID-19 pandemic. It is interesting to note that the majority of respondents classified themselves as underclassmen. This finding supports Maunder’s (2018) contention that the sense of belonging is critical to the retention of undergraduate students as they develop new connections. Thus, it appears that freshmen and sophomores perceived that involvement in the student recreation center activities during the COVID-19 pandemic returned to campus due to a sense of belonging. This result is significant as freshmen enrollment has continued to decrease at universities and colleges in the United States (National Student Clearinghouse, 2022). These results suggest that underclassmen require increased support to create a strong sense of belonging.

Significant associations were also revealed between student involvement (i.e. number of times worked out per week) and having a sense of belonging. Hausmann et al. (2009) reported that the more a student is involved, the more likely they are to have an increased sense of belonging as well as remain enrolled at the university. Thus, the result of this study corroborates Hausmann and colleagues’ study that the more a student participates in campus recreation activities, the greater likelihood of a sense of belonging resulting in increased student retention.

Significant associations emerged between the gender of the respondent and sense of belonging to the university, and satisfaction with the university as reasons to remain at the university. However, a negative relationship was found between gender and leaving the university. Thus, this result provides a unique finding that while the female respondents developed a sense of belonging and satisfaction with the university, male respondents were more likely to leave the university during the pandemic despite their involvement in recreation center activities during the COVID-19 pandemic.

Limitations and Future Research

The key findings of this study should be considered within the context of several limitations. First, the findings of this study can be generalized
only to the students who responded at the selected university. In addition, all of the responses were self-reported. The accuracy of self-report surveys has been questioned in various studies because it is unclear whether or not participants are answering completely honestly (Jager et al., 2017).

Future research could include areas such as student engagement, involvement, sense of community, and place bonding offered by university student recreation centers that may be evaluated to provide a more complete picture of the impact of university student recreation centers during the pandemic. Since the student population was at one non-profit public university, future research could include multiple universities. Additionally, a similar study could be conducted at one or multiple private tertiary institutions.

Conclusion

The advent of the COVID-19 pandemic increased concerns about students returning and remaining on university campuses. Student enrollment at universities and colleges decreased by 2.7% or 476,100 students in fall 2021. Furthermore, since the beginning of the COVID-19 pandemic there has been an aggregate student enrollment decline of 5.1% or 937,500 students (National Student Clearinghouse, 2022). As a result, universities and colleges in the United States are facing extraordinary financial challenges from COVID-19 (Kelchen et al., 2021).

Due to the long-term, potential financial consequences, it is vital for university and college administrators to identify options that will attract and retain students to their campuses.

While many of the results of this study were similar to pre-COVID-19 studies, they reinforce the importance and influence that university student recreation centers have on students returning to and remaining on campus. The findings provided valuable information for recreational sports professionals as well as university administrators. From an applied viewpoint, the results identify information for university administrators to better understand how the presence of a student recreation center may attract and retain students throughout their academic careers during this unstable time in the United States higher education.

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