A Review of Campus Recreation and Sport-Based Experience Literature in Higher Education Contexts

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Abstract
This rapid review was conducted to synthesize the empirical research related to campus recreation participatory experiences that was published between 2011 and 2021. To carry out the review, three databases (SPORTDiscus, Web of Science, Scopus) were systematically searched for peer reviewed empirical literature related to campus recreation participatory sport experiences. The results were then screened with predetermined criteria and 180 studies remained for data extraction. Data was extracted and trends were identified for discussion. When comparing the results to a similar review conducted on literature published between 1998–2010 (cf. Barcelona & Sweeney, 2012), the results of the reveal that the use of theory is becoming increasingly prevalent as scholars are more regularly providing theoretical frameworks, key constructs and discussing scholarly contributions. The review also revealed limitations such as inconsistencies with measurement and that most studies have been conducted at single institutions, which should both be addressed in future research.

Keywords
campus recreation, sport experiences, consumer behavior, higher education, participation

Introduction
The first integrative review of campus recreational sport literature was conducted by Sweeney and Barcelona (2012) exclusively focusing on research published within the Recreational Sports Journal. They suggested that future reviews should include a wider range of journals. The review revealed that the use of theory was noticeably absent from the body of literature even though campus recreation departments are housed within postsecondary institutions. Eight categories of research emerged from the review: participation and constraints, administration, benefits/outcomes, research/program evaluation,
professional development, health and wellness, facilities and equipment, marketing/service quality, risk management and sociodemographic differences (Sweeney & Barcelona, 2012). Scholars that conduct research in the campus recreation space will likely benefit from another review that broadens its manuscript selection strategy while further concentrating on a particular theme. The purpose of this paper is to conduct a review of the empirical research related to campus recreation participatory experiences in a broader range of academic journals than previous reviews.

**Design**

To address the purpose, a comprehensive rapid review was conducted. Rapid reviews employ abbreviated systematic review methods in order to assess what is known about a policy or practical issue (Tricco et al., 2017). Rapid reviews employ comprehensive searches and then make careful methodology concessions that may include but are not limited to restricting the sources to peer reviewed literature, extracting only specific data from each source or modifying the quality appraisal steps through the review (Grant & Booth, 2009; Tricco et al., 2017). Rapid reviews can provide timely and user-friendly evidence to the scientific community (Khangura et al., 2012). To account for these methodological concessions and ensure replicability of the review, authors are to report each step of the search and selection of sources (Grant & Booth, 2009). The following sections outline the preferred reporting items for systematic reviews and meta analyses (PRISMA) methodology used for conducting this rapid review.

**Search Strategy**

The electronic databases selected for this review included SPORTDiscus, Scopus and Web of Science. These were identified by an academic librarian as the most prominent databases for sport, recreation and leisure literature. While searching the Scopus database, some subjects (medicine; biochemistry, genetics and molecular biology; neuroscience; and pharmacology, toxicology and pharmaceutics) were excluded to reduce the number of irrelevant studies. The search strategy consisted of the following keywords and applied the “related words” feature in each database: (a) “campus recreation*” OR “collegiate recreation” OR intramural* OR “college sport*” OR “university Sport*”; AND (b) “consumer behavior” OR “consumer behaviour” OR marketing OR “program outcome*” OR “service quality” OR satisfaction OR engagement OR experience* OR participat* OR play. The year of publication was not limited during the initial search. In total, two searches were conducted with the final round on October 4th, 2021. The results of the searches were uploaded to the online management system Covidence to assist with screening. It is noteworthy that some duplicate entries were uploaded, however the Covidence management system was able to help manage these by removing all duplicate records. The PRISMA chart, reports the total number of records that were uploaded to Covidence ($n = 16,009$; see Figure 1).

**Study Selection**

Inclusion and exclusion criteria were established that related to campus recreation participatory experiences provided by postsecondary institutions (see Table 1). Using the established criteria, the title and abstract of each study were then screened to remove irrelevant studies. During the title and abstract screening phase, studies were included if they did not explicitly meet the exclusion criteria. For example, studies that referred to the sample population as student athletes, but did not explicitly state varsity, NCAA or elite were included at this stage. All sources that remained after the title and abstract screening phase were then retrieved for full text screening. The full text of each study was then examined to determine if it should be included in the final study selection. During the full text stage, only studies that were published after January 1st, 2011 were included to avoid duplication and allow for comparisons with the Sweeney and Barcelona (2012) review. Through the full text screening phase, the reasons for exclusion were recorded (see Figure 1 for PRISMA flow chart).
Figure 1. PRIMA flow chart.

Table 1. Title and Abstract Inclusion and Exclusion Criteria.

| Inclusion Criteria                                                                 | Exclusion Criteria                                                                 |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| English Language                                                                  | Opinions/commentaries, reviews, conceptual papers, conference papers             |
| Published between January 1st, 2011 – October 4th, 2021                           | Published prior to December 31st, 2010.                                            |
| Peer-reviewed academic journal publications with empirical evidence                | Focus exclusively on high performance sport (i.e., included terminology such as professional, international, national, varsity, NCAA, elite) |
| Studies involving participatory sport, recreation, physical activity, other extracurricular activities provided by post-secondary institution sport or recreation departments | Focus on children, youth, high school, adult population                           |
| Post-secondary student population, former student perspective or staff perspective on the experience/activity | Focus on staff development, culture or unrelated to direct service provision       |
| Studies involving student-athletes that did not refer exclusively to high performance sport contexts | Medical/healthcare study (i.e., surgery, intramural coronary artery)              |
| Studies comparing high performance and recreational level sport experiences        | Issues accessing the article                                                      |
Data Extraction and Analysis

After the study selection was completed, data from each study was extracted that pertained to: first author, year, country, journal, purpose, theory or key constructs, methodology, methods, scales/analysis, sample size, sample characteristics, number of institutions the study was carried out at, activity context, key findings and future research.

Deductive coding was then used to categorize studies into themes by similar topics and theoretical perspectives. Four themes were used that related to Funk’s (2017) conceptualization of sport experiences: sociodemographic/participation trends, antecedents to participation, interactions and outcomes of participation. Specifically, antecedents to participation pertained to studies that examined preconceived thoughts, feelings or emotions that lead up to participation (i.e., motivations or constraints). Interactions pertained to participants’ perception of an interaction that took place before, during or after a participatory experience. Outcomes pertained to subjective or objective measures associated with participation (i.e., sense of community, student retention). Sociodemographic/participation trends included studies that investigated relationships between sociodemographic variables and participation trends. Like previous reviews, this process used a nonexclusive scheme to ensure the intent of each study was being captured (Barcelona & Quinn, 2011; Sweeney & Barcelona, 2012). Once the author completed extracting and charting all sources, a subsequent check was completed to confirm accuracy and completeness of all extracted data.

Results

Selection of Sources

A total of 16,009 articles were uploaded to the Covidence platform. The platform removed 4,396 duplicates and the inclusion/exclusion criteria was applied to 11,616 sources during title and abstract screening phase. After the title and abstract screening phase, 774 articles remained for full text screening. The full text screening resulted in the removal of 594 articles. In total, the systematic search and screening process identified 180 peer reviewed empirical articles to be included in the review (see Figure 1 for PRISMA flow chart).

Source Characteristics

The trend line depicted in Figure 2 illustrates that the number of studies published each year has generally increased between 2011 and 2021. It was found that the majority of studies were conducted in the United States (n = 127, 70.3%), followed by Canada (n = 14, 7.5%), the United Kingdom (n = 9, 5.0%), Turkey (n = 4, 2.2%) and Germany (n = 3, 1.7%). There were also 19 countries where only one or two studies were conducted (n = 24, 13.3%). The Recreational Sports Journal published almost half (n = 81, 45.0%) of the studies, followed by the Journal of American College Health (n = 7, 3.9%), and the Journal of Human Sport & Exercise; Sport, Education and Society; and the International Journal of Sport Management, Recreation & Tourism each published 3 studies (n = 1.7%). Most studies were published in journals related to sport, recreation or leisure (n = 121, 67.2%).

Most studies were conducted at single postsecondary institutions (n = 134, 74%) where the sample derived consisted primarily of members of that institution. Many studies (n = 62, 34.4%) acknowledged this to be a limitation and recommended that future research should capture larger and more diverse sample sizes at other institutions or geographic regions. Meanwhile, only 27 (15.0%) studies were conducted at multiple institutions and it could not be determined how many institutions were involved in 19 (10.6%) studies.

General campus recreation participation experiences were the context of 79 studies (43.9%). More specific programs or contexts included intramural sport (n = 41, 22.8%), sport clubs (n = 29, 16.1%), inclusive programing (n = 18, 10.0%), and others (see Table 2).

Research Methodology

The majority (n = 128, 71.1%) of studies identified by this review used quantitative methods. The total sample population of these studies was 408,103 (M = 3,264.82, SD = 11,053.76) and data was collected through cross sectional (n = 87), longitudinal (n = 14), pre and post test (n = 11), matching pair
samples \((n = 9)\) secondary data \((n = 5)\), minute by minute particle testing \((n = 1)\) and unspecified \((n = 1)\) study designs. Of these, 89 used at least one established scale or instrument, 36 created their own instruments and five used only secondary behavioral measures with no other accompanying instrument.

There were 30 \((16.7\%)\) studies that used qualitative methods. The total sample population of qualitative studies was 759 \((M = 27.11, SD = 33.23)\) and data was collected through open ended interviews \((n = 13)\), focus groups \((n = 5)\), observation \((n = 1)\), cross sectional qualitative surveys \((n = 1)\) and through another qualitative method to supplement open ended interviews \((n = 13)\). There were also 22 \((12.2\%)\) mixed methods studies which the total sample population was 10,244 \((M = 539.16, SD = 1,345.85)\).

**Use of Theory**

Most \((n = 126, 69.2\%)\) studies identified a theory, framework or key constructs to inform the study, or identified a theoretical contribution in the discussion. The most frequently cited was the student involvement theory (Astin, 1984), followed by leisure constraints theory (Crawford et al., 1991), student departure model (Tinto, 1993), self determination theory (Ryan & Deci, 2000), and the achievement goal theory (LeUnes, 2008). Table 3 depicts the theoretical perspectives or key constructs that were used more than three times. Meanwhile, almost one third \((n = 54, 29.7\%)\) of studies were considered atheoretical as they did not identify a theory or key constructs that guided the research.

**Themes**

The number of studies that pertained to each overarching theme were as follows: sociodemographic/
participation trends \((n = 52)\), antecedents to participation \((n = 62)\), interactions \((n = 56)\), and outcomes of participation \((n = 100)\). These themes are discussed below.

**Sociodemographic/Participation Trends.** The sociodemographic/participation trends theme included studies that focused on the sociodemographic characteristics of participants and the various activities that subpopulation groups do or do not participate in. For example, studies examined participation among various ethnic groups, that included broadly defined international students (e.g., Allen & Lyons, 2019; Buzzelli, 2016, Guo & Ross, 2014) and more specific groups like African American students (e.g., Barney et al., 2019; Patterson & Dorwart, 2019), international Asian students (e.g., Malette & Ismailzai, 2020). Studies also examined complexities related to gender such participation differences between man and woman (e.g., Chu & Zhang, 2018; Cooper et al., 2012; Guan et al., 2020), the LGTBQ community (e.g., Anderson et al., 2020; Patchett & Foster, 2015; Phipps, 2021) and the relationship between gender and the provision of programing (e.g., McDowell et al., 2016; Schneider et al., 2014; Soler et al., 2017). Studies also investigated the experiences of students with physical disabilities (e.g., Devine, 2016; Oysterheft et al., 2018; McKay et al., 2019), the design of adaptive programing (e.g., Fines & Block, 2021; Gillies & Dupuis, 2013; Shapiro et al., 2020) and the prevalence of programing for vulnerable populations (e.g., Horacek et al., 2014; Zuest et al., 2021). Some scholars also examined participation trends among students registered in specific educational programs (e.g., Gathman et al., 2017; Slade & Kies, 2015), differences between undergraduate and graduate students (e.g., Henchy, 2013) and participation among first year students (e.g., Chu & Zhang, 2018; Deng et al., 2021; Helms & Moiseichik, 2018).

**Antecedents to Participation.** The antecedents to participation theme included studies that focused on participant thoughts, feelings or emotions prior to participation, and the navigation of these leading up to participation. For example, many studies focused on participation constraints such as time and energy, school (e.g., Barney et al., 2019; Diehl et al., 2018; Guo & Ross, 2014; Lerner et al., 2011), required commitment (e.g., St Quinton & Brunton, 2018), skill, competition (e.g., Brunton & St Quinton, 2021; Rundio & Bunning, 2021; Selvaratnam et al., 2021; Shaikh et al., 2018), the equipment, built environment (e.g., Henchy, 2011; Martin & Griffiths, 2016; Spivey & Hritz, 2013) and activity alternatives (e.g., Stankowski et al., 2017). To combat constraints, studies identified participation enablers such as peers (e.g., Webb & Forrester, 2016), the breadth and access to opportunities (e.g., Brunton & St Quinton, 2021; Lower et al., 2015; Snyder et al., 2017; Zuest et al., 2021), financial resources (e.g., Fricke et al., 2018; Wood & Danyelchuk, 2015), self efficacy (e.g., Lower-Hoppe et al., 2021) and previous experience (Lyons et al., 2018. Studies also explored the motivational factors of participation such as socialization/peer support, competency/mastery (e.g., Anderson & Ramos, 2018; Beggs et al., 2014; Carter-Francique, 2011; Deng et al., 2021; Ramos et al., 2018), appearance (e.g., Cooper et al., 2012; Diehl et al., 2018), goal achievement (e.g., Lower-Hoppe et al., 2021; Snyder et al., 2017), entertainment/stimulation (e.g., Munusturalar et al., 2015; Shapiro et al., 2020). A few studies also investigated communication and marketing practices like information dissemination (e.g., Lee et al., 2020), the use of social media (e.g., Achen, 2015), the internet

### Table 3. Theories or Primary Constructs Utilized.

| Theoretical Approach/Key Constructs Utilized | Number of uses |
|---------------------------------------------|----------------|
| Student Involvement Theory                  | 27             |
| Leisure Constraints Theory                   | 9              |
| Student Departure Model                      | 9              |
| Self Determination Theory                    | 7              |
| Achievement Goal Theory                      | 7              |
| Leisure Motivation                           | 5              |
| Theory of Planned Behaviour                  | 5              |
| Service Quality                              | 5              |
| Identity Theory                              | 3              |
| Social Identity Theory                       | 3              |
| Socioecological Model                        | 3              |

Note. There were 52 other theories cited once or twice.
and word of mouth (e.g., Bilos & Galic, 2016), promotional items (e.g., Ciuffo et al., 2014), advertising and branding (e.g., Mills & Williams, 2016), and the campus recreation facility as an institutional recruitment tool (e.g., Weaver et al., 2017).

**Interactions.** Interactions was a theme that included studies pertaining to encounters with objects, the postsecondary institution, the campus recreation department/facility, or others involved in the activity. For example, many studies investigated the perception of campus recreation facilities such as the perceived adequacy (e.g., Horacek et al., 2014; Zubiaur et al., 2021), level of comfort while inside (e.g., Wilson et al., 2021), proximity to accommodation and transportation (e.g., Rahman et al., 2020) and service quality (e.g., Makubuya et al., 2020; Martinez et al., 2019; Wilson & Millar, 2021). Studies also investigated interactions with digital mediums such as social media (e.g., Achen, 2015) and digital tracking systems (e.g., Shutova et al., 2021). Another topic of interest was the interactions between students while participating in activities or at facilities (e.g., Warner & Dixon, 2013; Wilson et al., 2020). One study investigated air quality using minute by minute particle testing (e.g., Zajchowski et al., 2020).

**Outcomes of Participation.** The outcomes of participation included studies that investigated subjective or objective measures that were associated with participation. These investigated outcomes that occurred at the time of participation (i.e., during episodes), or indirectly after participation had concluded (i.e., between or after episodes) and outcomes could be considered either positive or negative. For example, many studies explored relationships between participation and various aspects of wellbeing such as physical fitness (e.g., Chrismas et al., 2019), socialization (e.g., Czekanski & Lower, 2019; Elkins et al., 2011), stress relief (e.g., Chang et al., 2019), happiness (e.g., Eubank & DeVita, 2021), health and wellness (e.g., Bachert et al., 2021; Forrester, 2015). Studies also investigated how participation led to the development of social capital (e.g., deBrun et al., 2021), leadership (e.g., Dugan et al., 2015), higher education learning outcomes (e.g., Flosdorf et al., 2016) and other workplace competencies (e.g., Brunton et al., 2020; Buzzelli, 2016). The association between participation and various measures of academic success was also investigated using grade point average (e.g., Brock et al., 2015; Chu & Zhang, 2018), student retention (e.g., Forrester et al., 2018) and degree completion (e.g., Byun et al., 2012). Some also investigated the associations between campus recreation participation and gambling (e.g., Martin et al., 2016) or alcohol consumption (e.g., Andes et al., 2012; Barry et al., 2015).

**Discussion**

The review systematically gathered and reviewed literature pertaining to participatory sport, recreation and physical activity experiences provided by postsecondary institutions and categorized them according to themes related to Funk’s (2017) sport experience framework. Along with themes, the results described the research methodologies, use of theory, and indicate that the amount of research being published from this context is increasing.

The review revealed that most studies published between 2011 to 2021 identified a theory, framework or key constructs to inform the research, or at least referenced a theoretical contribution in the discussion. This is important as theory has been referred to as “the currency of our scholarly realm” (Corley & Gioia, 2011, p.12). When discussing the development of theory in sport management, Doherty (2013) argued that “the strength of an academic discipline is its distinct body of knowledge” (p. 6). The Sweeney and Barcelona (2012) review identified 2006 as a point of academic maturation where the number of empirical papers published each year increased. Although the application of theory in research in this context appears to be increasing, the prevalence of atheoretical research may reflect more applied, pragmatic, research where scholars and practitioners work together to address institution-specific problems. Pragmatic research is also important and Corley and Gioia (2011) advocate for scholars to conduct research that has both a practical and theoretical utility so that knowledge is concurrently generated for academia and disseminated into practice. The increased use of theory found by this review is
encouraging and it is recommended that scholars seek utility in both theoretical and practical contributions when conducting future research in this context.

Like the previous review, the most prominent theory remains to be the student involvement theory (Astin, 1984) likely due to its focus on higher education contexts (Sweeney & Barcelona, 2012). This may seem like a surprise considering that most of the research is published in sport, recreation and leisure related journals. However, scholars have found that sport-related research is noticeably absent in higher education journals (Foster et al., 2021). There has also been a greater number of theories adopted from outside higher education that were not identified in the previous review. For example, leisure motivation, service quality, identity theory and the socioecological model were not identified in the previous review (cf. Sweeney & Barcelona, 2012). The adoption of theory from outside the higher education discipline is important because borrowing theory from alternative academic disciplines can help to adapt, extend and generate new theories, while also determining applicability from one context to another (Doherty, 2013). Campus recreation sport experiences by nature are multi-disciplinary as they take place in the higher education context, however, are also related to other social science disciplines such as sport management, physical education and leisure. As such, scholars should continue to adopt theories from various disciplines to determine their applicability to the campus recreation context.

Also like the previous review, most studies identified by this review used various quantitative methods to collect data (cf. Sweeney & Barcelona, 2012). However, within this body of literature, some constructs were not always measured through consistent methods of data collection and some scholars did not use established scales. To measure grade point average and campus recreation participation, for example, scholars have used cross sectional surveys (e.g., Mayers et al., 2017) or obtained secondary data from the campus recreation software or institution’s office of the registrar (McElveen & Rosson, 2014; Zegre et al., 2022). Using different measures to study the same construct can strengthen the findings of a particular body of work (Newman et al., 2013), however, it can also negatively affect the validity and reliability of the body of literature that has concentrated a particular construct (Babbie, 2020). A study found by this review (Standish & Umbach, 2019) highlighted this measurement issues as they found a nonresponse bias when they comparing both subjective and objective collected data for campus recreation facility usage, sport participation (i.e., intramural or club) and grade point average. Scholars have identified this and have started to refine issues with measuring facility usage (Zegre et al., 2022), however additional work should be conducted to address measurement issues.

The review found that the predominant theme of research was outcomes of participation. This demonstrates that scholars have begun to address Sweeney and Barcelona’s (2012) call to shift the research emphasis from motivations, facilitators and constraints (i.e., antecedents) to outcomes and impacts. The shift aligns with the “benefits movement” that emphasizes outcome-oriented program evaluations (Ellis et al., 2002) and can help campus recreation professionals better communicate and position the service within postsecondary institutions (Weese, 2010). The current review also corroborated Sweeney and Barcelona’s (2012) noted deficiency in the number of studies that investigated program quality, as it was the least prevalent topic of research. Program quality therefore remains to be an area for future investigation especially given the association between interactions (i.e., service quality) and outcomes (Denison, 2013).

The most frequently cited limitation identified by this review was that research was being conducted single institutions limiting the generalizability. This limitation is further demonstrated as research following similar methods has found conflicting results (e.g., Forrester et al., 2018; McElveen & Ibele, 2019; Slade & Kies, 2015). The conflicting results points to the contextual differences of sport, recreation and physical activity offerings between institutions, campus recreation departments or activities. Future scholars should therefore conduct research at multiple institutions and seek to understand contextual similarities and
differences. This is particularly important for determining the underlying mechanisms contributing to outcomes of participation and from a practical standpoint, may help institutions when determining where to allocate resources to obtain the most “return on investment”.

There are some limitations that should be acknowledged. The review was conducted by a single author, and so, including a second author through the quality appraisal steps would improve the rigor and reduce potential bias. Further, only three databases were searched and future research could expand the search to include additional databases. Finally, aligning with rapid review methodology, a thorough assessment of rigor was also beyond the scope of this paper (Grant & Booth, 2009). To address these limitations, future scholars should consider using systematic or scoping review designs (Grant & Booth, 2009). Despite these limitations, the review still addressed the current gap in the literature.

To conclude, this review described the various theories, and methods used by scholars who have investigated recreation and sport-based consumer experiences among postsecondary populations. The review was also the first to address a notable gap (cf. Sweeney & Barcelona, 2012) by systematically searching databases and identifying literature in multiple journals to depict a clearer understanding of the body of literature.

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References
Achen, R. M. (2015). Using Facebook and Twitter to encourage physical activity: Are college students connecting with campus recreation on social media? A pilot study. *Recreational Sports Journal*, 39, 132–143. https://doi.org/10.1123/rsj.2014-0046
Allen, J., & Lyons, R. (2019). International students participating in campus recreational sport. *The Sport Journal*, 22, 28.
Anderson, A. R., Knee, E., & Ramos, W. D. (2020). “I’m not an expert, but…”: Perspectives on aquatic management for LGBTQ participants. *Recreational Sports Journal*, 44(1), 24–37. https://doi.org/10.1177/1558866120909449
Anderson, A. R., & Ramos, W. D. (2018). Social motivation and health college club swimming. *Journal of American College Health*. https://doi.org/10.1080/07448481.2018.1453515
Andes, S., Poet, K., & McWilliams, S. (2012). The culture of high-risk alcohol use among club and intramural athletes. *Journal of American College Health*, 60(8), 556–561. https://doi.org/10.1080/07448481.2012.719559
Astin, A. W. (1984). Student involvement: A development theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308.
Babbie, E. R. (2020). *The Practice of Social Research* (15th ed.). Cengage Learning US. https://bookshelf.vitalsource.com/books/9780357360842
Bachert, P., Wasche, H., Albrecht, F., Hildebrand, G., Kunz, A. M., & Woll, A. (2021). Promoting students’ health at university: Key stakeholders, cooperation, and network development. *Frontiers in Public Health*, 9. https://doi.org/10.3389/fpubh.2021.680714
Barcelona, R. J., & Quinn, W. (2011). Trends in youth development research topics: An integrative review of positive youth development research published in selected journals, 2001-2010. *Journal of Youth Development*, 6(3), 18–37. https://doi.org/10.5195/jyd.2011.173
Barney, D., Kensinger, W., Miller, B., & Jordan, S. (2019). What barriers keep college-aged females from using the campus recreation center? *Asian Journal of Physical Education & Recreation*, 25(1), 16–28. https://doi.org/10.24112/ajper.251916
Barry, A. E., Howell, S. M., Riplinger, A., & Piazza-Gardner, A. K. (2015). Alcohol use among college athletes: Do intercollegiate, club or intramural student athletes drink differently? *Substance Use & Misuse*, 50, 302–307. https://doi.org/10.3109/10826084.2014.977398
Byun, S., Irvin, M. J., & Meece, J. L. (2012). Predictors of college recreation usage, academic performance, and selected health indices of college freshman. *Recreational Sports Journal*, 39, 27–36. https://doi.org/10.1123/rsj.2014-0061

Brunton, J. A., Canovas-Alvarez, F. J., Merono, L., Leiva-Arcas, A., Arias-Estero, J. L., Conde, E., & Sanchez-Pato, A. (2020). Implementing the European Sports Leadership Programme: A vehicle to help development graduate workplace competencies. *Journal of Human Sport & Exercise*, 16(1), 11–25. https://doi.org/10.14198/jhse.2021.161.02

Buzzelli, A. (2016). Developing learning outcomes for a collaborative event: Highlighting a recreational soccer tournament designed to connect international and domestic students. *Recreational Sports Journal*, 40, 82–91. https://doi.org/10.1123/rsj.2014-0068

Byun, S., Irvin, M. J., & Meece, J. L. (2012). Predictors of bachelor’s degree completion among rural students at four-year institutions. *The Review of Higher Education*, 35, 3. https://doi.org/10.1353/rhe.2012.0023

Carter-Francique, A. R. (2011). Fit and phat: Black college women and their relationship with physical activity, obesity and campus recreation facilities. *Sport, Education and Society*, 16(5), 553–570. https://doi.org/10.1080/13573322.2011.601136

Chang, Y., Davidson, C., Conklin, S., & Ewert, A. (2019). The impact of short-term adventure-based outdoor programs on college students’ stress reduction. *Journal of Adventure Education and Outdoor Learning*, 19(1), 67–83. https://doi.org/10.1080/14729679.2018.1507831

Chang, Y., Davidson, C., Conklin, S., & Ewert, A. (2016). Developing learning outcomes for a collaborative event: Highlighting a recreational soccer tournament designed to connect international and domestic students. *Recreational Sports Journal*, 40, 82–91. https://doi.org/10.1123/rsj.2014-0068

Chu, T. L., & Zhang, T. (2018). Sport club participation and health-related outcomes in college students: Comparisons by sex and academic classification. *Recreational Sports Journal*, 42, 33–47. https://doi.org/10.1123/rsj.2016-0030

Ciuffo, J., Johnson, J. E., & Tracy, D. R. (2014). Intramural sport marketing: An examination of effectiveness, participant motives, and demographic differences. *Recreational Sports Journal*, 38, 175–187. https://doi.org/10.1123/rsj.2014-0039

Cooper, N., Schuett, P. A., & Phillips, H. M. (2012). Examining intrinsic motivations in campus intramural sports. *Recreational Sports Journal*, 36, 25–36. https://doi.org/10.1123/rsj.36.1.25

Corley, K. G., & Gioia, D. A. (2011). Building theory about theory building: What constitutes a theoretical contribution. *Academy of Management Review*, 36(1), 12–32. https://doi.org/10.5465/amr.2009.0486

Crawford, D. W., Jackson, E. L., & Godbey, G. (1991). A hierarchical model of leisure constraints. *Leisure Sciences*, 13, 309–320. https://doi.org/10.1080/0140409109513147

Czekanski, W. A., & Lower, L. (2019). Collegiate sport club structure and function. *Qualitative Research in Sport, Exercise and Health*, 11(2), 231–245. https://doi.org/10.1080/2159676X.2018.1433711

DeBrun, G., Gerbers, K., & Bell, B. (2021). An examination of social capital in outdoor orientation programs. *Recreational Sports Journal*, 45(2), 131–138. https://doi.org/10.1177/15588661211016443

Denison, C. B. (2013). Perceptions of dimensions of service quality and recreational benefits in collegiate recreational sports programs [Unpublished dissertation for Doctor of Education requirements]. University of Northern Iowa, Cedar Falls, Iowa, United States of America.

Deng, Y., Hwang, Y., Campbell, S., McCullick, B. A., & Yli-Piipari, S. (2021). Institutional factors associated with college students’ healthy physical activity and body composition: A first semester follow-up. *Journal of American College Health*. https://doi.org/10.1080/07448481.2021.1922416

Devine, M. A. (2016). Leisure-time physical activity: Experiences of college students with disabilities.
Doherty, A. (2013). Investing in sport management: The value of good theory. *Sport Management Review, 16*, 5–11. https://doi.org/10.1016/j.smr.2011.12.006

Dugan, J. P., Turnman, N. T., & Torrez, M. A. (2015). When recreation is more than just sport: Advancing the leadership development of students in intramurals and club sports. *Recreational Sports Journal, 39*, 37–48. https://doi.org/10.1123/rsj.2015-0008

Dysterhelf, J., Chaparro, G., Rice, L., & Rice, I. (2018). The role of collegiate recreational sports participation in intramurals and club sports. *Recreational Sports Journal, 39*, 37–48. https://doi.org/10.1123/rsj.2015-0008

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Elkins, D. J., Forrester, S. A., & Noel-Elkins, A. V. (2011). The contribution of campus recreational sports participation to perceived sense of campus community. *Recreational Sports Journal, 35*, 24–34. https://doi.org/10.1123/rsj.35.1.24

Ellis, G. D., Compton, D. M., Tyson, B., & Bohlig, M. (2002). Campus recreation participation, health, and quality of life. *Recreational Sports Journal, 26*(2), 51–60. https://doi.org/10.1123/rsj.26.2.51

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Elkins, D. J., Forrester, S. A., & Noel-Elkins, A. V. (2011). The contribution of campus recreational sports participation to perceived sense of campus community. *Recreational Sports Journal, 35*, 24–34. https://doi.org/10.1123/rsj.35.1.24

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Elkins, D. J., Forrester, S. A., & Noel-Elkins, A. V. (2011). The contribution of campus recreational sports participation to perceived sense of campus community. *Recreational Sports Journal, 35*, 24–34. https://doi.org/10.1123/rsj.35.1.24

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Eubank, J. M., & DeVita, J. M. (2021). Informal recreation’s relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice, 58*(5), 560–573. https://doi.org/10.1080/19496591.2020.1822854

Guo, Q., & Ross, C. M. (2014). An exploratory study of Asian International Students’ campus recreational sports participation. *Recreational Sports Journal, 38*, 55–68. https://doi.org/10.1123/rsj.2013-0007

Foster, S. J. L., Springer, D., & Harry, M. (2021). “Please bear with me a moment as I write about sports”: Addressing the dearth of sport scholarship in general, high-impact higher education journals. *Innovative Higher Education, 47*(2), 175–200. https://doi.org/10.1007/s10755-021-09564-8

Forrester, S. A., Mcaulister-Kenny, K., & Locker, M. E. (2018). Association between collegiate recreational sports involvement and undergraduate student retention. *Recreational Sports Journal, 42*, 64–74. https://doi.org/10.1123/rsj.2017-0004

Forrester, S. A., McAllister-Kenny, K., & Locker, M. E. (2018). Association between collegiate recreational sports involvement and undergraduate student retention. *Recreational Sports Journal, 42*, 64–74. https://doi.org/10.1123/rsj.2017-0004

Friesen, A., & Block, M. (2021). Building collegiate adapted sports: Goalball case study. *Sport, Education and Society, 26*(3), 326–338. https://doi.org/10.1080/13573322.2020.1729113

Forrester, S. (2015). Benefits of collegiate recreational sports participation: Results from the 2013 NASPA assessment and knowledge consortium study. *Recreational Sports Journal, 39*, 2–15. https://doi.org/10.1123/rsj.2015-0005

Foster, S. J. L., Springer, D., & Harry, M. (2021). “Please bear with me a moment as I write about sports”: Addressing the dearth of sport scholarship in general, high-impact higher education journals. *Innovative Higher Education, 47*(2), 175–200. https://doi.org/10.1007/s10755-021-09564-8

Funk, D. C. (2017). Introducing a Sport Experience Design (SX) framework for sport consumer behaviour research. *Sport Management Review, 20*(2), 145–158. https://doi.org/10.1016/j.smr.2016.11.006

Fry, F. R., & Junge, C. A. (2016). Exploring the relationship between student recreation center use and well-being. *Journal of American College Health, 68*(2), 124–131. https://doi.org/10.1080/07448481.2018.1535493

Gillies, J., & Dupuis, S. L. (2013). A framework for creating a campus culture of inclusion: A participatory action research approach. *Annals of Leisure Research, 16*(3), 193–211. https://doi.org/10.1080/11745398.2013.832646

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal, 26*, 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Guo, Q., & Ross, C. M. (2014). An exploratory study of Asian International Students’ campus recreational sports participation. *Recreational Sports Journal, 38*, 55–68. https://doi.org/10.1123/rsj.2013-0007

Helms, K., & Moiseichik, M. (2018). Collegiate recreational sports participation as an adjustment aid for former high school athletes experiencing athlete role exit. *Recreational Sports Journal, 42*, 160–173. https://doi.org/10.1123/rsj.2017-0017
Henchy, A. (2011). The influence of campus recreation beyond the gym. *Recreational Sports Journal, 35*, 174–181. https://doi.org/10.1123/rsj.35.2.174

Henchy, A. (2013). The perceived benefits of participating in campus recreation programs and facilities: A comparison between undergraduate and graduate students. *Recreational Sports Journal, 37*, 97–105. https://doi.org/10.1123/rsj.37.2.97

Horacek, T. M., White, A. A., Byrd-Bredbenner, C., Reznar, M. M., Olfert, M. D., Morrell, J. S., Koenings, M. M., Brown, O. N., Shelnutt, K. P., Kattelmann, K. K., Greene, G. W., Colby, S. E., & Thompson-Snyder, C. A. (2014). PACES: A physical activity campus environmental supports audit on university campuses. *American Journal of Health Promotion, 28*(4), e104–e117. https://doi.org/10.4278/ajhp.121212-QUAN-604

Khangura, S., Konnyu, K., Cushman, R., Grimshaw, J., & Lerner, J., Burns, C., & de Roiste, A. (2011). Correlates of physical activity among college students. *Recreational Sports Journal, 35*, 95–106. https://doi.org/10.1123/rsj.35.2.95

LeUnes, A. (2008). *Sport psychology* (4th ed.). Psychology Press.

Lower, L. M., Turnor, B. A., & Petersen, J. C. (2015). Does greater opportunity for recreational sport involvement translate to greater degree of involvement? *International Journal of Sport Management, 16*(1), 62–76.

Lower-Hoppe, L. M., Evans, J. O., & Brgoch, S. M. (2021). Examining the social cognitive determinants of collegiate recreational sport involvement and outcomes. *Leisure/Loisir, 45*(2), 207–236. https://doi.org/10.1080/14927713.2021.1874832

Lyons, L. K., Dorsch, T. E., Bell, L. F., & Mason, L. G. (2018). Renegotiating identity: A phenomenological investigation of the college transition for former high school athletes no longer engaged in varsity competition. *Identity, 18*(1), 18–33. https://doi.org/10.1080/15283488.2017.1410156

Makubuya, T., Kell, Y., Maro, C., & Wang, Z. (2020). Campus wellness facility, student contentment and health. *Recreational Sports Journal, 44*(1), 60–66. https://doi.org/10.1177/1558866120927322

Malette, N., & Ismailzai, E. (2020). Building bridges to better bonds? Bridging and bonding capital development through on-campus club participation among international and domestic students. *Canadian Journal of Higher Education / Revue canadienne d’enseignement supérieur, 50*(4), 72–86. https://doi.org/10.47678/cjhe.vi0.188817

Martin, S., & Griffiths, C. (2016). The leisure experiences of university students with disabilities in Ireland. *Leisure/Loisir, 40*(4), 447–467. https://doi.org/10.1080/14927713.2016.1273130

Martin, R. J., Nelson, S. E., & Gallucci, A. R. (2016). Game on: Past year gambling, gambling-related problems, and fantasy sports gambling among college athletes and non-athletes. *Journal of Gambling Studies, 32*, 567–579. https://doi.org/10.1007/s10899-015-9561-y

Martinez, J. M., Barnhill, C., Otto, M., & Mosso, A. (2019). The influence of managerial practices and job-related characteristics on employee perceptions of service quality and turnover intention. *Recreational Sports Journal, 43*(1), 35–42. https://doi.org/10.1177/1558866119849313

Mayers, R. F., Wilson, A. W., & Potwarka, L. R. (2017). Moderating effects of campus recreation participation in the relationship between grade point average and first-year student engagement: An exploratory study. *Recreational Sports Journal, 41*, 101–110. https://doi.org/10.1123/rsj.2016-0021

McKay, C., Park, J. Y., & Haegele, J. (2019). An analysis of the structure, validity, and reliability of the Collegian Attitudes Toward Inclusive Campus Recreation (CAICR) scale. *Recreational Sports Journal, 43*(2), 73–83. https://doi.org/10.1177/1558866119884895

McDowell, J., Deterding, R., Elmore, T., Morford, E., & Morris, E. (2016). Title IX and campus recreation: Guidelines to increase gender equity in club and intramural sport programs. *Recreational Sports Journal, 40*, 133–151. https://doi.org/10.1123/rsj.2016-0012

McElvene, M., & Ibele, K. (2019). Retention and academic success of first-year student-athletes and intramural sports participants. *Recreational Sports Journal, 43*(1), 35–42.
McElveen, M., & Rossow, A. (2014). Relationship of intramural participation to GPA and retention in first-time-in-college students. Recreational Sports Journal, 38, 50–54. https://doi.org/10.1123/rsj.2013-0024

Mills, I., & Williams, A. (2016). Understanding brand equity in campus recreational sports: A consumer-based perspective. Recreational Sports Journal, 40, 120–132. https://doi.org/10.1123/rsj.2015-0019

Newman, I., Ridenour, C. S., Newman, C., & Smith, S. (2013). Detecting low-incidence effects: The value of mixed method research designs in low-n studies. Mid-Western Educational Researcher, 25(4), 31–46.

Patchett, E., & Foster, J. (2015). Inclusive recreation: The state of campus facilities, programs and policies for transgender participants. Recreational Sports Journal, 39, 83–91. https://doi.org/10.1123/rsj.2015-0028

Patterson, A. F., & Dorwart, C. E. (2019). A gateway to learning: Exploring the role of campus recreation and leisure experiences in developing a sense of purpose in African American males at a PWI. Recreational Sports Journal, 43(2), 93–105. https://doi.org/10.1177/1558866119883595

Phipps, C. (2021). Thinking beyond binary: Barriers to trans* participation in university sport. International Review for the Sociology of Sport, 56(1), 81–96. https://doi.org/10.1177/1012690219889621

Rahman, M., Mia, S., Ahmed, F., Thongrak, S., & Kiatpathomchai, S. (2020). Assessing students’ satisfaction in public universities in Bangladesh: An empirical study. Journal of Asian Finance, Economics and Business, 7(8), 323–332. https://doi.org/10.13106/jafeb.2020.vol17.no8.323

Ramos, W. D., Anderson, A. R., & Lee, D. (2018). Collegiate club swimming: An examination of leisure motivations. Recreational Sports Journal, 42, 75–89. https://doi.org/10.1123/rsj.2016-0025

Rundio, A., & Buning, R. J. (2021). Initiation and introduction into sport participation: New member experiences with collegiate sport clubs. Recreational Sports Journal, 45(2), 85–93. https://doi.org/10.1177/15588661211016432

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. The American Psychologist, 55(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Schneider, R. C., Stier, W. F., & Kampf, S. (2014). Gender equity perceptions related to college and university campus recreation programs. Recreational Sports Journal, 38, 2–13. https://doi.org/10.1123/rsj.2013-0005

Selvaratnam, V., Snelgrove, R., Wood, L., & Potwarka, L. R. (2021). How constraints to campus recreation participation differ based on activity type, gender, and citizenship. Recreational Sports Journal, 45(1), 61–68. https://doi.org/10.1177/15588661211995165

Shaikh, H. M., Patterson, M. S., Lanning, B., Meyer, M. R. U., & Patterson, C. A. (2018). Assessing college students’ use of campus recreation facilities through individual and environmental factors. Recreational Sports Journal, 42, 145–159. https://doi.org/10.1123/rsj.2017-0033

Shapiro, D., Pate, J. R., & Cottingham, M. (2020). A multi-institutional review of college campus adapted intramural sport programming for college students without a disability. Recreational Sports Journal, 44(2), 109–125. https://doi.org/10.1177/1558866120952093

Shutova, T., Vyotskaya, T., Efremova, N., & Nosova, A. (2021). Information and digital educational environment for sports at a university (Russian experience). Journal of Physical Education and Sport, 21(2), 757–764. https://doi.org/10.7752/jpes.2021.02094

Slade, A. N., & Kies, S. M. (2015). The relationship between academic performance and recreation use among first-year medical students. Medical Education Online, 20(1), 25105. https://doi.org/10.3402/meo.v20.25105

Snyder, K., Lee, J. M., Bjornsen, A., & Dinkel, D. (2017). What gets them moving? College students’ motivation for exercise: An exploratory study. Recreational Sports Journal, 41, 111–124. https://doi.org/10.1123/rsj.2017-0026

Soler, S., Prat, P., Puig, N., & Flintoff, A. (2017). Implementing gender equity policies in a university
sport organizations: Competing discourses from enthusiasm to resistance. *Quest (Grand Rapids, Mich)*, 69(2), 276–289. https://doi.org/10.1080/00336297.2016.1226186

Spivey, L. M., & Hritz, N. M. (2013). A longitudinal study of recreational sport participation and constraints. *Recreational Sports Journal*, 37, 14–28. https://doi.org/10.1123/rsj.37.1.14

St Quinton, T., & Brunton, J. (2018). The identification of reasons, solutions, and techniques informing a theory-based intervention targeting recreational sports participation. *Research Quarterly for Exercise and Sport*, 89(2), 255–264. https://doi.org/10.1080/02701367.2018.1443197

Standish, T., & Umbach, P. D. (2019). Should we be concerned about nonresponse bias in college student surveys? Evidence of bias from a validation study. *Research in Higher Education*, 60, 338–357. https://doi.org/10.1007/s11162-018-9530-2

Tricco, A. C., Langlois, E., & Straus, S. E., & World Health Organization. (2017). World Health Organization. (2017). Rapid reviews to strengthen health policy and systems: a practical guide. World Health Organization.

Warner, S., & Dixon, M. A. (2013). Sports and community on campus: Constructing a sports experience that matters. *Journal of College Student Development*, 54(3), 283–298. https://doi.org/10.1353/csd.2013.0044

Weaver, A. G., Forte, D. J., & McFadden, C. W. (2017). Perceptions of higher education administrators regarding the role of club sports in the recruitment and retention of male students. *Recreational Sports Journal*, 41, 42–54. https://doi.org/10.1123/rsj.2016-0023

Webb, E., & Forrester, S. (2016). Peer-created motivational climates: Variations in the perceptions of collegiate intramural sport participants. *International Journal of Sport Management, Recreation & Tourism*, 23, 22–50. https://doi.org/10.5199/ijsmart-1791-874X-23b

Weese, J. W. (2010). The four steps to exceptional leadership of campus recreation in turbulent times. *Recreational Sports Journal*, 34, 95–102. https://doi.org/10.1123/rsj.34.2.95

Wilson, K. E. S., & Millar, P. (2021). Intramural sport participation. An examination of participant benefits, service quality, program satisfaction, and student retention. *Recreational Sports Journal*, 45(2), 149–160. https://doi.org/10.1177/15588661211036906

Wilson, O. W. A., Colinear, C., Guthrie, D., & Bopp, M. (2020). Gender differences in college student physical activity, and campus recreational facility use, and comfort. *Journal of American College Health*. https://doi.org/10.1080/07448481.2020.1804388

Wilson, O. W. A., Bhuivyan, N., & Bopp, M. (2021). Factors contributing to gender inequities in physical activity and campus recreation facility use. *Journal of American College Health*, 1–9. https://doi.org/10.1080/07448481.2021.1965150

Wood, L., & Danylichuk, K. (2015). The impact of constraints and negotiations strategies on involvement in intramural sport. *Managing Sport and Leisure*, 20(3), 157–173. https://doi.org/10.1080/23750472.2015.1010279

Zegre, S. J., Hughes, R. P., Darling, A. M., & Decker, C. R. (2022). A data-driven approach for facility use definitions in campus recreation. *Recreational Sports Journal*, 46(1), 115–127. https://doi.org/10.1177/15588661221077692

Zajchowski, C. A. B., Rabinowitz, E., & Davis, J. K. (2020). Canaries at the climbing wall: A comparative study of particulate matter at two university climbing walls. *Recreational Sports Journal*, 44(2), 81–88. https://doi.org/10.1177/1558866120952772

Zubiaur, M., Zitouni, A., & Horno, S. S. (2021). Comparison of sports habits and attitudes in university students of physical and sports education of Mostaganem (Algeria) and physical activity and sport sciences of leon (Spain). *Frontiers in Psychology*, 11, 593322. https://doi.org/10.3389/fpsyg.2020.593322

Zuest, L., Lee, S., Leedeman, J., Li, S., & Clifford, D. E. (2021). Promoting body size diversity in university recreation centers. *Quest (Grand Rapids, Mich)*, 73, 357–374. https://doi.org/10.1080/00336297.2021.1970594