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C.A.R.E. To Challenge Stigma? A Directed Qualitative Content Analysis of Division I Mental Health Webpages

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Stigma surrounding mental health in sports is common and damaging. It often prevents athletes from seeking help, as athletes may feel fear of being judged or perceived as weak by teammates, coaches, and administrators when disclosing they may need help. Grey literature – such as athletic department mental health webpages – serves as a publicly accessible, non-academic communication tool that can reduce stigma and facilitate help-seeking by delivering clear, relatable, and evidence-informed mental health information to athletes and their support networks. Webpages can serve as accessible, proactive tools that educate, connect, and guide athletes toward care before crises emerge—making thoughtful design the key to meaningful impact. Through a directed qualitative content analysis (DQCA) of Division I Power Five (DI P5) athletic departments mental health webpages, this research explores what mental health information is presented and which anti-stigma strategies are used to encourage help-seeking among users. Findings demonstrated the content and organization of these webpages varied widely and notably lacked key content, including a lack of personal narratives, universal screenings tools, clear expectations about the help-seeking process, and detailed descriptions of available resources. Based on these findings, the C.A.R.E. framework is proposed – a practical guide for structuring mental health webpages to reduce stigma and encourage timely help-seeking.

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The perceived stigma surrounding athletes' mental health often creates barriers, preventing them from seeking the help they need (Beasley et al., 2024; Beasley & Hoffman, 2023). Unlike non-athletes, college athletes face unique pressures – from the normalization of playing through pain to fears that seeking help signals weakness (Castaldelli-Maia et al., 2019). In comparison to non-athletes, college athletes often delay seeking a diagnosis or treatment after experiencing symptoms (Edwards et al., 2022). Common barriers include uncertainty about what support entails and the belief that their experiences are part of the norm and do not require intervention (Bird et al., 2018). These personal hesitations are intensified by broader systemic challenges including negative attitudes from coaches and staff (Cutler & Dwyer, 2020), past negative experiences with providers (Moreland et al., 2018), limited on-campus access to care (Moore, 2016), and lack of awareness surrounding mental health services (Wilkerson et al., 2020), all of which create a climate that discourages help-seeking behavior.

Even when mental health services exist, athletes often are not aware of them due to poor promotion or fragmented messaging (Young et al., 2023). Thus, scholars and practitioners need to identity strategies that "get the students to the appropriate mental health professional as quickly as possible" (Edwards et al., 2022, p. 88). Athletic department webpages, an evolving form of grey literature, may play a pivotal role in this effort. While Olympic-level organizations have been criticized for underutilizing their websites in this space (Liddle, 2016), collegiate sports offer an opportunity to proactively promote mental health. Visiting an athletic department's mental health webpage is a form of self-guided, informal help-seeking that can serve as an important first step, especially for athletes hesitant to pursue formal support (Gulliver et al., 2012; Johnson et al., 2022). However, this method has been underexplored in online collegiate athletic settings (Pretorious et al., 2020). Given that this area remains underexplored, the purpose of this study is to evaluate mental health webpages from Division I Power Five (DI P5) athletic departments, identifying what mental health information is presented and which anti-stigma strategies are used to encourage help-seeking – specifically, contact interventions, mental health literacy (MHL), and integrated care. Contact interventions normalize help-seeking by sharing relatable stories, MHL improves awareness and symptom recognition, and integrated care builds trust by clearly presenting qualified professionals and demonstrating a coordinated, trustworthy care system that enhances users' confidence in reaching out. The following research questions guided our study:

RQ_1: What mental health information is shared on DI P5 athletic department webpages?

RQ_2: Which anti-stigma strategies are used on DI P5 athletic department webpages to encourage help-seeking?

Literature Review

Mental health stigma in sport may stem from the cultural norms of sport, often termed the sport ethic (Beasley & Johnson-Pack, 2024; Bunch et al., 2024). Ath-

letes may internalize a culture that equates toughness with success, leading them to view mental health struggles as a sign of weakness or personal failure – ultimately deterring them from seeking help (Habeeb et al., 2022). Therefore, reducing mental health stigma in sport requires a systems-level approach that goes beyond athletes and includes coaches, support staff, athletic administrators, the organization, and the wider community (Beasley & Hoffman, 2023; Beasley et al., 2024). Because athletes often rely on a trusted network of coaches, family, and trainers, the beliefs and MHL of these trusted voices significantly influence help-seeking behaviors (Moreland et al., 2018; Sullivan et al., 2019; Van Raalte et al., 2015). Yet, despite their importance, coaches often lack knowledge on connecting athletes to proper resources (Beasley et al., 2024), and parents or peers may miss warning signs without sufficient MHL. Educating both athletes and their support networks can broaden awareness and create an environment that normalizes help-seeking behavior (Purcell et al., 2019), which is critical for college athletes who face unique barriers to mental health care (Moreland et al., 2018).

Marginalized college athletes are part of the student populations at each P5 campus, where they often face layered stigma and cultural barriers to seeking mental health support. Black student-athletes, for instance, are more likely to confide in family than coaches or professionals because pursuing and discussing mental health was viewed as a weakness (Wilkerson et al., 2020, 2022). Additionally, a lack of culturally sensitive support further perpetuates silence and stigma within the team and athletic department. While marginalized athletes often rely on family over professionals due to cultural barriers, the absence of athletic department websites as outreach tools further limits awareness and access to critical support.While Young and co-authors (2023) found that universities promote mental health through internal channels such as emails, pamphlets, posters, social media, workshops, and team meetings, athletic department websites were not identified as a tool used for outreach – highlighting a notable gap in digital engagement strategies. This oversight matters, as several athletes remain unaware of available resources and coaches lack knowledge on connecting athletes to proper resources (Beasley et al., 2024; Moreland et al., 2018; Sudano & Miles, 2017). This highlights an opportunity for athletic websites to bridge the gap by providing accessible, public-facing resources.

Athletic department websites are a form of grey literature, which are public tools that communicate values and influence perceptions (Pedersen et al., 2021; Ruihley et al., 2012). To date, there has not been any study that assess athletic department website, but other forms of grey literature, such as student handbooks, have been analyzed. Cassilo and Sanderson (2024) found that college athlete handbooks included minimal content on mental health, and when it was present, it was often framed through the lens of athletic performance or linked to disciplinary issues like substance abuse. The handbooks largely placed the responsibility on athletes to seek help, reflecting a passive stance from athletic departments. Additionally, references to diversity, inclusion, or culturally sensitive mental health support were notably absent, raising concerns about the accessibility and framing of care. Their findings emphasized while the resources listed may be supportive, the framing and delivery

reflect a reactive model, lacking intentional efforts to reduce stigma or actively promote mental health (Cassilo & Sanderson, 2024).

However, unlike student handbooks, which are static, internal, and typically accessed only when needed, webpages are dynamic, widely accessible, and frequently updated. Therefore, this study builds on findings of Cassilo and Sanderson (2024) by examining whether public-facing digital platforms adopt a more proactive, inclusive, and accessible approach to athlete mental health than internal documents have traditionally offered. As institutional investment may improve both athlete well-being and team performance (Humphreys et al., 2007; Stokowski et al., 2020), public-facing institutional grey literature is an important topic for exploration in the scholarship of college athlete mental health.

Conceptual Framework

Grey literature refers to information and research materials that are produced outside of traditional academic publishing, such as reports, policy documents, guidelines, and webpages (Giustini, 2019; Prior et al., 2022). Therefore, athletic department webpages serve as a form of grey literature – publicly accessible, non-peer-reviewed content that communicates institutional values and practices (Pedersen et al., 2021). These digital platforms meet athletes where they are and move institutions closer to creating a culture where mental health is seen as foundational to success. Prior and co-authors (2022) emphasized the importance of grey literature in synthesizing mental health policies and aligning them with peer-reviewed recommendations, while also identifying that grey literature often lacks detailed, practical guidance for real-world application, leaving gaps in how mental health messaging is translated into action.

However, research suggests that effective grey literature can improve help-seeking behaviors. Johnson and co-authors (2022) identified that digital technology like webpages support informal help-seeking behavior by facilitating access to 24/7 tailored content like case vignettes, MHL, destigmatizing information, and embedded links. These webpages offer a low-barrier, self-directed resource where athletes can explore options before pursuing formal care. Research supports digital strategies in sport settings. Multiple scholars (Brewer & Petrie, 2013; Van Raalte et al., 2015) advocate for web-based interventions informed by athletic stakeholders to improve mental health outcomes, yet few studies have explored how college athletic websites fulfill this role. This gap is especially relevant for athletes hesitant to disclose issues due to stigma, fear of judgment, or concerns about confidentiality (Hatteberg, 2020; Wilkerson et al., 2020). Properly structured webpages can promote awareness and serve as a confidential bridge to formal care, therefore helping athletes find support even when coaches or trainers lack mental health expertise. Specifically, Prior and co-authors (2022) suggest that when grey literature incorporates themes such as stigma reduction, mental health literacy (MHL), and multidisciplinary care, it has the potential to reduce mental health stigma and promote help-seeking behaviors. Therefore, each concept is defined and operationalized for this study in the following sections.

Challenging Stigma: Contact Interventions

For this study, we specifically looked at strategies to challenge stigma through the lens of contact interventions. Seeman and co-authors (2016) highlight that public perceptions of mental health diagnoses are influenced by factors such as culture, tradition, and access to education and healthcare. Allport (1958) proposed that increased social contact with stigmatized groups can replace misconceptions and reduce prejudice. This theory has been widely applied by using positive interactions with individuals who have experienced mental health challenges to reduce the stigma they face. Previous researchers (Corrigan et al., 2001, 2012; Gronholm et al., 2017; Kutcher et al., 2016) confirmed that live or video-based interactions are effective in changing adults' attitudes towards individuals facing mental health challenges and fostering empathy, but the evidence for its long-term impact on behavior is limited.

With frequent contact as an effective intervention among this age group, hearing from peers who have navigated similar challenges can humanize mental health struggles and reduce fear of judgement (Purcell et al., 2019). Parrott (2021) offers practical strategies for media coverage of mental health in sports, advocating for transparent discussions about diagnoses, symptoms, and treatments. This could involve creating anonymous interviews with former college athletes and staff or case vignettes, where athletes can discuss their mental health challenges, the symptoms they experienced, and how they sought diagnosis and treatment through available support services (Gronholm et al., 2017). Parrott (2021) also suggests sharing athletes' full narratives, including their personal stories and direct quotes, to humanize their experiences and foster empathy. This approach humanizes their experiences, showcasing aspects beyond sports such as family background, friendships, hometowns, and interests outside of athletics. Adopting a strength-based narrative, which highlights resilience while acknowledging vulnerabilities, also challenges the sport ethic and encourages open dialogue about mental health. This could look like athletic departments highlighting peer or former athletes as proactive and resourceful individuals who seek mental health support and cultivate strong support networks, emphasizing how these actions contribute to their personal and professional development.

Reducing stigma in college athletics through contact is essential for fostering a supportive environment where athletes are comfortable seeking help without fear of judgment. These interactions break down stereotypes, promote empathy, and facilitate understanding (Mittal et al., 2012), leading to earlier intervention, better mental health outcomes, and overall well-being for athletes. By encouraging and facilitating these interactions, athletic departments can help reduce stigma around mental health services and support holistic athlete development.

Mental Health Literacy (MHL)

In addition to contact interventions, MHL plays a crucial role in this effort. Initially, the goal of health literacy (HL) was to understand physical health to adhere to medical treatments. Jorm (2012) expanded the scope to include prevention of mental

disorders, recognizing symptoms, self-help strategies, and first aid skills. Today, HL has evolved, particularly in the context of MHL. Recent definitions of MHL have merged over time to encompass various aspects of mental health, combining prior MHL definitions and current HL definitions, emphasizing a broader, more holistic view of mental well-being. Current MHL (Kutcher et al., 2016) involves:

> (1) "understanding how to obtain and maintain positive mental health; (2) understanding mental disorders and their treatments; (3) decreasing stigma related to mental disorders; and, (4) enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities)" (p. 155).

Although efficacy research is mixed, MHL interventions may improve mental health outcomes in sport populations through increasing education (Bu, 2000). With the evolution of technology, such MHL educational approaches can differ widely in how information is conveyed. Corrigan et al.'s (2012) meta-analysis found that education in combination with social contact interventions are effective in reducing stigma by providing factual information and encouraging personal interactions with stigmatized groups. These strategies foster empathy and understanding publicly (Mittal et al., 2012), though more research is needed on their application to college athletes.

The importance of MHL has been further validated in the athletic context. Gulliver and co-authors (2012) effectively trialed the delivery of a MHL program to elite athletes via team-based workshops facilitated by mental health professionals. This approach proved successful, offering athletes the chance to discuss and address concerns with trained professionals, particularly regarding confidentiality and the implications of help-seeking.

Integrated Care

For this study, we focused on integrated care, rather than multidisciplinary care. While similar, multidisciplinary support involves professionals from different fields working independently (Prior et al., 2022), whereas integrated or interprofessional care emphasizes collaboration among experts to address athletes' mental health comprehensively (McHenry et al., 2021; Sudano et al., 2016). This integrated approach allows doctors, clinical psychologists, social workers, and other professionals to work together to address both physical and mental well-being of college athletes, which is currently practiced by some athletic departments. For example, a college athlete may be experiencing anxiety. A psychologist may offer cognitive-behavioral therapy for anxiety, while a doctor monitors the college athlete's physical health and prescribes medication, if necessary. In a multidisciplinary approach, the psychologist and doctor might work independently, focusing on their own areas of expertise without coordination which could lead to fragmented care, where the mental and physical health are treated separately. Whereas, in an integrated care model, the psychologist

and doctor would communicate and work together, ensuring that the cognitive-behavioral therapy and any medication prescribed complement each other. For instance, the psychologist might adjust therapy strategies based on the doctor's findings about the college athlete's physical health, leading to a more cohesive and comprehensive treatment plan. In this example, an integrated approach would be more effective for the overall well-being of a college athletes than a multidisciplinary because it fosters collaboration between the psychologist and doctor to address the college athlete's performance anxiety holistically. Scholars advocate for this integrated care model, especially within athletic spaces to bring together mental health professionals, such as psychologists, counselors, and social workers, to address a blend of mental, medical, and behavioral health needs (McHenry et al., 2021; Sudano et al., 2016).

Integrated care coupled with interprofessional competence offer a holistic approach to supporting college athletes' mental health by involving multiple professionals each contributing specialized expertise. However, distinctions among these roles must be clearly understood. For example, athletes with clinical needs may require a licensed psychologist, while those seeking performance support may benefit from a certified mental performance consultant (CMPC). Without this clarity, confusion can undermine trust and reduce help-seeking. Public-facing tools like athletic department webpages are ideal platforms to explain these differences and encourage informed decisions.

Despite the potential benefits, integrated care models also face several challenges. Athletes may hesitate to disclose clinical mental health symptoms, especially when providers are involved that may not be familiar with athlete identities (Yoon & Petrie, 2023). Even when in place, unclear communication about provider roles can hinder effectiveness. Scholarship underscores the need for structured protocols, improved screening practices, and enhanced training for coaches and administrators (McHenry et al., 2021; Sudano et al., 2016). These efforts help reduce stigma, improve referral processes, and ensure athletes receive the right support at the right time. Ultimately, athletic department webpages must reflect these systems with transparency and cultural competence, guiding college athletes toward effective, stigma-free mental health care.

Method

A directed qualitative content analysis (DQCA; Kibiswa, 2019) of athletic department mental health webpages was conducted to examine what information is being shared on the mental health webpages of DI P5 conference athletic department websites and identify the strategies used to reduce stigma and encourage help-seeking – specifically contact interventions, MHL, and integrated care. The DQCA allowed for existing theory and literature to guide the data collection and coding processes. According to Hsieh and Shannon (2005), "The goal of a directed approach to content analysis is to validate or extend conceptually a theoretical framework or theory" (p. 1281). A DQCA was appropriate for this study because it allowed the

research team to build on specific, theory-based constructs to highlight best practices for reducing stigma and allow for a structured, yet flexible, analysis of mental health content on athletic webpages. Additionally, because the study aimed to assess what information is being presented and which strategies are being used on webpages, using DQCA helped deductively identify whether and how these strategies appear in the content. The data analysis administered in this research was conducted using a three-phase and eight-step schema of textual analysis approach established in the literature (Hsieh & Shannon, 2005; Kibiswa, 2019; Mayring, 2002). In Phase One (Preparation Phase), we developed a priori codes informed by Prior and co-author's (2022) review of grey literature on athlete mental health support and existing sport literature, defined operational codes for our study, and identified webpages as our unit of analysis. In Phase Two (Data Analysis Phase), using the a priori codes we coded each athletic department website for the presence of contact interventions, MHL, and integrated care. Coded data was then organized and interpreted for patterns and gaps. In Phase Three (Reporting Phase), we verified coding consistency, reported findings aligned with the study framework, and provided a detailed narrative description to support transparency and replicability. Ultimately, this study examines what information is being shared on the mental health webpages of DI P5 conference athletic department websites and identifies the anti-stigma strategies used to encourage help-seeking.

Sample

The sample for this DQCA consisted of university athletic department webpages. Data was drawn from institution's athletic webpages by searching the school's name followed by "athletics and mental health" and "athletics and psychology". For example, a search term included Duke athletics mental health to find Duke's Mental Health and Performance page through the athletic website. The sample was limited to those colleges and universities competing in the NCAA DI P5 conferences – specifically the Atlantic Coast Conference (ACC, 15 schools), Big Ten (14 schools), Big 12 (13 schools), Pac12 (12 schools), and Southeastern Conference (SEC, 14 schools). It is important to note that shortly after data collection, conference realignment impacted the title of "P5", and some schools moved conferences in Fall 2024. Nonetheless, the impetus to focus on P5 was to provide an exploratory basis focused on the institutions with the most resources with the understanding their websites can provide an exemplary for others. A total of 68 athletic department webpages mental health webpages were collected and coded between January and May of 2024. Of the 68, 16 athletic departments did not provide access to a dedicated mental health webpage during the time of collection. Therefore, a final sample of 52 mental health webpages were analyzed.

Data Analysis

The research team analyzed the data using a three-phase and eight-step schema of textual analysis: (1) preparation, (2) data analysis, and (3) reporting, as outlined by Kibiswa (2019).

In the preparation phase (Steps 1-3), we began by developing the study framework and operational definitions. Drawing on Prior and co-author's (2022) review of grey literature, we identified three major gaps related to athlete mental health support: challenging stigma, MHL, and multidisciplinary care. These became our a priori codes, later refined to reflect best practices in health promotion and digital outreach. Specifically, we focused on contact interventions as a best practice in stigma reduction (e.g., Purcell et al., 2019) and we replaced multidisciplinary care with integrated care (e.g., McHenry et al., 2021; Sudano et al., 2016), emphasizing collaboration among qualified providers across sport and mental health.

Each code was operationalized with subcategories using literature on anti-stigma strategies, educational outreach, and integrated care models (e.g., Corrigan et al., 2012; Kutcher et al., 2016; McHenry et al., 2021; Parrott, 2021; Sudano et al., 2016). For example, challenging stigma was defined through contact interventions by indicators such as transparent discussions of diagnoses, athlete quotes or videos, strength-based narratives, challenges sport ethic, and calls to action (e.g., clear contact during crisis, Parrott, 2021). MHL was defined by knowing how to achieve and sustain positive mental health, recognizing mental disorders and their remedies, and improving help-seeking skills. Integrated care included evidence of trainers as an integral part of care teams and the presence of diverse licensed mental health professionals. The unit of analysis was each institution's publicly accessible mental health webpage ($n = 52$), and the lead researcher became immersed in each webpage, analyzing layout, tone, ease of navigation, and overall presentation to gain a sense of the data and refine the coding structure.

In the second phase (Steps 4-6), using Excel, the primary researcher coded the webpages line-by-line according to the operational definitions. For each subcategory (e.g., "discusses diagnosis", "includes athlete quote", "lists provider credentials"), webpages were marked as "Yes" or "No" and included a verbatim or descriptive example. Examples included writing detailed descriptions embedded videos of athletes sharing mental health experiences, FAQ sections describing what to expect in therapy, or lists of providers such as LCSWs, CMPCs, and LPCs. We also documented key logistical content such as inclusion of office location, after-hours support, referral instructions, cost transparency, and confidentiality statements – each nested under the "Improving Help-Seeking Skills" subcategory. To ensure consistency, the lead researcher archived PDF copies of each webpage at the time of collection. Coding was reviewed and discussed with a second researcher, and the team met to peer debrief and resolve discrepancies.

In the final phase (Steps 7-8), codes were grouped thematically and analyzed across institutions to identify trends, strengths, and gaps. We created a summary matrix to display which schools included which codes. Institutions that demonstrated exemplary webpage design and messaging were highlighted to illustrate best practices. Finally, findings were reported narratively, using embedded quotes and examples to demonstrate how P5 athletic departments do—or do not—leverage their webpages to support athlete mental health, reduce stigma, and promote help-seeking among both athletes and their broader support networks.

Table 1
Stigma Reduction Strategies

A Priori Code (Prior et al., 2022)	Sub-Category	References
Contact Interventions	Transparent discussions of diagnosis	Parrott (2021)
	Presenting individuals' full stories	Parrott (2021)
	Including direct quotes from those with mental health challenges	Parrott (2021)
	Adopting a strength-based narrative	Parrott (2021)
	Challenging prevailing sport ethic	Parrott (2021)
	Call to action	Parrott (2021)
Mental Health Literacy (MHL)	Knowing how to achieve and sustain positive mental health	Kutcher et al. (2016); Purcell et al. (2019);
	Recognizing mental disorders and their remedies	Kutcher et al. (2016); Sudano & Miles (2017); Kroshus (2016)
	Improving help-seeking skills	Kutcher et al. (2016); Gulliver et al. (2012); Moreland et al. (2018)
Integrated Care	Integrated care	Sudano et al. (2016)
	Interprofessional competence	Lopez & Levy (2013); McHenry et al. (2021)

Findings and Discussion

The findings of this study revealed that most DI P5 athletic departments had a dedicated mental health webpage. However, alarmingly, 31% of these departments lacked dedicated mental health webpages, leaving athletes without immediate online resources. Those with webpages included basic crisis resources, staff directories, and brief overviews of available services, but the content and organization of the webpages varied widely. Navigation and naming were also inconsistent, with pages appearing under various tabs and using different terms like “Sports Psychology” or “Mental Health.” Notably, most pages lacked key content, including personal narratives, universal screening tools, clear expectations about the help-seeking process, and detailed descriptions of available resources, which research has shown can help reduce stigma and facilitate help-seeking (Gulliver, 2012; Parrott, 2021; Sudano & Miles, 2017). To address these gaps, we present the findings below then propose a practical C.A.R.E. framework explained in the following section.

Contact Interventions

Discussions of Diagnosis

Among these mental health webpages, transparent discussions about diagnoses, symptoms, and treatment remain limited with only 11.5% of institutions engaging in these discussions. Institutions emphasized that their mental health content is for informational purposes and not for diagnosing conditions. This limited inclusion, paired with disclaimers that the content is informational rather than diagnostic, suggests that institutions may take a cautious approach to avoid liability or misinterpretation, while still attempting to raise mental health awareness. However, Gulliver and co-authors (2012) identified that a lack of knowledge about the symptoms and the application of that knowledge was a leading barrier to athletes not seeking help.

Other P5 institutions took a proactive identification approach by offering actionable tools like Mississippi State University's "How to Support a College Athlete in Distress", prominently displayed to encourage proactive support (Mississippi State Athletics, n.d.). Similarly, Rutgers University provides resources to mental health diagnoses and symptoms under their "Signs Your Mental Wellness May Need Some Training" section, aiming to help athletes self-assess their mental health and recognize when professional help might be needed (Rutgers Athletics, n.d.). This language connects directly to early intervention and can promote open discussions of mental health but does not explicitly address diagnosis. Other language included on these pages emphasized awareness, education, and support for managing mental health, but direct discussions about diagnosis are generally limited and framed cautiously. For example, University of Illinois, Urbana-Champaign makes an emphasis in the 'About' section that "all information on this page is meant to help in an informational capacity and should not be used to make any diagnoses" (Illinois, Urbana Champaign Athletics, n.d.). When they did mention diagnoses, it is often in the context of symptoms treatment options, or general management strategies. This is consistent with Cassilo and Sanderson's (2024) findings on handbooks, where mental health resources similarly placed the responsibility on athletes to initiate care, rather than presenting a more guided or supportive pathway. Additionally, statistics on diagnosable mental health concerns and mental health statistics for college athletes were included on some pages. This is evident on Michigan State University's page who referenced a John Hopkins study that found, "only about 10% of student-athletes with a mental health condition seek help" as the second bulleted statistic on their page (Michigan State Athletics, n.d.).

Because college athletes have low help-seeking behaviors (Bird et al., 2018), P5 institutions may limit open discussions of diagnoses, symptoms, and treatments on their mental health webpages by focusing too generally on awareness and referrals to align with this perception. However, there is opportunity for these institutions to provide an intervention by normalizing the experience of seeking support and framing diagnosis as an opportunity to personalize care and optimize both mental health and performance.

Personal Stories and Quotes from College Athletes

P5 institutions varied in their use of personal stories and quotes from college athletes on their mental health webpages. Only 27% of institutions included quotes from college and professional athletes by providing embedded videos or links to external platforms that contain stories of athletes confronting mental health challenges, and just 11% showcased their full, authentic stories.

While personal storytelling can reduce stigma and promote help-seeking, it is important to recognize that not all athletes may feel ready – or obligated – to share their experiences publicly. People can fully support mental health awareness while choosing to protect their privacy. Some athletes may fear judgment, breaches of confidentiality, or damage to their public image (Edwards et al., 2022), particularly in high-profile or competitive environments, like Division I campuses. Others may feel their experiences will not be understood or worry that speaking out could affect how teammates or coaches view them. These are valid concerns that reflect the persistent stigma surrounding mental health in sport (Young et al., 2023). The limited use of personal stories underscores the need to build environments of trust and safety, where athletes feel empowered to speak out if and when they choose.

Institutions like the University of Michigan have used storytelling to reduce stigma through programs like Athletes Connected (AC), which combines educational presentations by mental health professionals with follow-up videos of athletes sharing personal experiences. For example, a video featuring a University of Michigan gymnast discussing the loss of his mother and the support he received from AC is one way the Michigan humanized mental health support on their webpage (University of Michigan Athletics, n.d.). This contact- and education-based approach has been shown to significantly increase mental health knowledge and improve attitudes toward help-seeking for DI athletes in the short term (Kern, 2017). Other schools, such as University of Notre Dame with its #IrishStrong campaign and the University of Illinois Urbana-Champaign with the Green Bandana Project, have also highlighted athlete-led mental health messaging. However, such efforts vary across P5 mental health webpages. This evidence suggests that combining professional-led education with relatable athlete stories can be a powerful way to challenge stigma and foster help-seeking among student-athletes.

Strength-Based Narratives and Challenging the Sport Ethic

The sport ethic refers to the culturally ingrained belief in the extreme pursuit of victory in athletics – often at the expense of personal well-being (Bennett, 2024). This mindset can discourage athletes from seeking help by framing vulnerability as weakness. Encouragingly, our findings show that 82.7% of mental health webpages from Division I P5 conference athletic departments included efforts to challenge this harmful narrative by reframing toughness in ways that prioritize mental health. Statements like “Champions are often faced with challenges, and no issue is too small to seek services” (Baylor Athletics, n.d.), counter the idea that athletes must always be self-reliant or mentally invulnerable. This statement could attract athletes to seek help by framing challenges as a natural part of success, encouraging proactive mental health care by emphasizing that no issue is too small, and fosters inclu-

sivity by validating struggles of all levels and encouraging athletes to view seeking help as a form of strength. Research suggests that online content has the potential to challenge stigma by framing athletes' disclosures in a stigma-challenging way rather than stigmatizing way (Gwarjanski & Parrott, 2018).

Auburn University emphasizes "holistic mental health care" that supports personal, academic, and athletic success. These pages often employed strength-based approaches to the language used in their mission, aiming to empower athletes while promoting a positive view of mental health. This is evident in Auburn University's statement: "Our mission is to provide Auburn student-athletes with holistic mental health care, wellness education, and applied sport psychology interventions. The CSP team supports student-athletes so they will thrive personally, academically, athletically, and in life beyond Auburn" (para 2). Wake Forest University also reinforces a positive view with its statement, "It is important to recognize that mental health is health. It is just as important to address as physical health" (Wake Forest Athletics, n.d.).These approaches effectively integrate mental health into the broader context of athlete well-being (Bennett, 2024).

Calls to Action

Among the 52 institutions, 38 institutions (73%) offered a clear, direct message that urges individuals to take immediate steps – such as contacting emergency services in a mental health crisis. Many webpages provided immediate crisis resources that read similarly to "In crisis, please call 911 or 988". The explicit inclusion of calls to action ensures that athletes have clear pathways to seek help, further dismantling the "tough it out" mentality, often pervasive in sports culture. A key focus is on ensuring access to emergency and essential resources. Most institutions listed psychological emergency clinicians, suicide prevention hotlines, and links to sexual violence services and national emergency resources to ensure access. Many also include university-specific after-hours support, ensuring round-the-clock assistance, while others provide links to external organizations like the NCAA and Hilinski's Hope, a national initiative promoting awareness and education of mental health and wellness for athletes. The inclusion of these strategies reflects a growing institutional recognition of the urgency surrounding athlete mental health. The next step involves equipping athletes with the knowledge and confidence to proactively understand, identify, and navigate mental health concerns, highlighting the importance of building MHL.

Mental Health Literacy (MHL)

Accessible Resources for Positive Mental Health

P5 institutions have utilized their mental health webpages to provide a wide array of accessible resources aimed at promoting positive mental health among college athletes. 82.7% of the mental health webpages included information and tools to assist with techniques like mindfulness and resilience. Mindfulness is emphasized as one of many effective tools for stress reduction and mental focus, especially among college athletes (Glass et al., 2019; Jones, 2020). Popular mindfulness apps were

commonly linked, while some institutions offered on campus mindfulness training programs, stress management clinics, and yoga sessions to equip college athletes with coping and problem-solving skills. Self-help tools, including Therapy Assistance Online (TAO) and relaxation training libraries, were also provided to help users develop mindfulness practices independently. Handouts and guides on topics such as transitioning out of sports, coping with grief and loss, and embracing unpredictability were also included.

About half (53.8%) of the institutions offered various peer advocacy resources, which has been identified as the preferred method of MHL programming in sports medicine (Purcell et al., 2019). Many partnered with organizations, like Hilinski's Hope and Active Minds, to promote awareness and peer support. Universities also provided team consultations, mental performance training, and leadership development. Some linked to free peer support platforms like Togetherall.com, expanding access to mental health resources for athletes. Additionally, only 14% of institutions included specific resources for marginalized student-athletes, reflecting a broader gap in accessible and inclusive mental health support. This may suggest that institutions recognize the value of peer advocacy and team-based mental health support but may lack centralized, athlete- and identity-specific spaces for engagement.

Transparent Screening Process

Transparent and standardized screening tools were not universally implemented with only 23% mentioning that they offer mental health screenings. This limits the accessibility to screening tools for college athletes, which was also evident a decade prior in Sudano and co-author's (2016) study. A notable exception include Pennsylvania State University, which offers the only anonymous online mental health screening option among all institutions in this study. Kroshus (2016) advocates for early detection through universal screenings, which can be facilitated by online tools for early intervention. Integrating assessment and recognition tools like those recommended by the NCAA (n.d.) and improving referral systems would help normalize help-seeking and reduce stigma.

Enhanced Help-Seeking Skills

More than 75% of the institutions analyzed provided office locations for mental health services, which aligns with NCAA (n.d.) best practices that recommend proximity to athletic facilities to enhance visibility and access. Additionally, 57% of schools clearly stated that mental health services are confidential unless written consent is given, similar the findings in college athlete handbooks (Cassilo & Sanderson, 2024). Many of these institutions provide clarity about confidentiality during initial sessions, outlining exceptions such as imminent harm, suspected abuse, or legal obligations to help athletes understand their privacy rights. These strategies may be used by most institutions to help normalize help-seeking and build trust, especially when paired with transparent FAQs about therapy logistics, privacy, and long-term care, as seen at schools like Auburn and Texas A&M. In addition, many institutions include

direct contact details and appointment instructions to further reduce access barriers. However, omitting office locations or confidentiality information may be signaling limited access or underdeveloped outreach, potentially leaving athletes uninformed and hesitant to seek care.

Given the demanding schedules of college athletes, 55% of institutions provide after-hours mental health resources such as links to 24/7 crisis hotlines, indicating an awareness of the need for flexible and responsive care. Schools like University of Illinois-Urbana Champaign and Wake Forest University go further by offering robust support for the athlete's network. University of Illinois-Urbana Champaign provides emergency vs. crisis guidance and practical steps for coaches, while Wake Forest University's site includes mental health education for staff and athletes, peer support advice, and warning signs of concern in sections titled: "What If I Need Help?" or "Helping Someone in Need" (Wake Forest Athletics, n.d.). These examples reflect that some university athletic departments value education, preparedness, and shared responsibility in addressing athlete mental health, and are actively working to close the gaps in providing coaches access to mental health resources (Beasley et al., 2024) and model best practices in MHL (NCAA, n.d.).

Despite this, only 32% of institutions outline what athletes should expect when seeking mental health support, a lack of transparency that may discourage athletes from utilizing available resources due to uncertainty or stigma (Watson, 2005), ultimately undermining MHL. This inconsistency suggests limited collaboration between athletic departments and counseling services in presenting unified, athlete-centered information. Clear FAQs that explain expectations around time commitment, confidentiality, provider qualifications, and follow-up care can improve transparency and build trust (Coyle et al., 2017). Similarly, service costs are also inconsistently addressed. Only 26% of institutions mention them, and just a few clarify that on campus services are free or that off campus care may involve insurance. This lack of clarity is opposite than what was found in handbooks (Cassilo & Sanderson, 2024), which may reflect an oversight or an assumption that athletes will navigate costs independently. Yet, for athletes managing both time and financial constraints, being upfront about expectations and service costs is critical. It is also important to acknowledge the variability in care models across athletic departments (Kroshus, 2016), such as general campus counseling centers, embedded athletic staff, or off-campus referrals, which can impact access and cost transparency. Each model has trade-offs related to privacy, specialization, and cost. Regardless of structure, making this information public via webpages is essential for supporting informed decisions and strengthening MHL (Van Raalte et al., 2015).

Referral processes are another inconsistent area, with only 40% of institutions describing how to access additional care on their mental health webpages. While some, like Mississippi State University offer clear steps and frameworks, others like University of Illinois Urbana-Champaign take it a step further by featuring evidence-based material like the "Delphi Criteria for Urgent Referral to a Community Mental Health Service", (Hilton et al., 2008) on its "When to Refer" tab. However,

over half of the DI P5 university athletic departments still present vague or absent guidance on these webpages. This perhaps suggests weak coordination between athletic and counseling services and a missed opportunity to educate staff and athletes on when and how to seek more specialized help.

Integrated Care

About 83% of the P5 athletic departments provided a visible starting point for mental health support by listing mental health professionals and identifying athletic trainers as initial contacts, whereas 48.1% listed a mix of mental health professionals such as, CMCPs, LPs, LSWs, LPCs, with their contact information on the webpage. This indicates that while initial access is generally well-structured, there may be gaps in transparency regarding available mental health specialists. This could impact how easily athletes can connect with the most appropriate care providers.

While including staff names and credentials promotes transparency, the absence of clear explanations on how to engage these professionals or their specific roles reduces the usefulness of the listing. Research shows that vagueness on which professionals are appropriate for mental health problems can perpetuate stigma and lead to ineffective care (McHenry et al., 2021), as athletes may hesitate to seek help due to confusion or fear of unknown steps. P5 institutions can better support athletes by adopting clear, empathetic communication and more detailed resource integration on their webpages. This emphasizes a need for a more centralized approach and interprofessional collaboration between communications and mental health professionals to enhance care pathways.

Implications

Despite growing attention to mental health, many P5 DI athletic department webpages do not reflect this progress. As Prior and co-authors (2022) noted, a lack of practical guidance persists, and this study found key content missing – such as personal stories, screening tools, and clear help-seeking steps. These gaps matter, as college athletes face unique mental health challenges (Edwards et al., 2022), and poorly designed webpages may limit trust and discourage help-seeking. Unlike static documents (Cassilo & Sanderson, 2024), webpages can serve as accessible, proactive tools that educate, connect, and guide athletes toward care before crises emerge – making thoughtful design essential for meaningful impact. Therefore, we propose addressing these challenges by implementing the C.A.R.E. Framework – a centralized approach that consolidates resources on an organized webpage and features links to external resources. This framework which includes *C*ommunicating the Story, *A*ddressing Expectations, *R*efining Access to Help and *E*mphasizing Inclusivity outlined below.

C.A.R.E. Framework for Reducing Stigma Online via Athletic Department Webpages

The current reality on many DI P5 mental health webpages includes inconsistencies in page visibility, confusing navigation, and limited inclusive content

Table 2. Frequency and Examples of Stigma Reduction Strategies on Division I Mental Health Webpages

A Priori Code (Prior et al., 2022)	**Sub-Category**	**Subcategory Description**	**Example**	**Frequency** Bold indicates majority. **(Included v. Not Included)** *N* = 52 ***n (%)***	
Contact Interventions	Transparent discussions	Includes discussion of diagnoses, symptoms and treatment	"All information on this page is meant to help in an informational capacity and should not be used to make any diagnoses" -University of Illinois Urbana-Champaign, para 3-4.	6 (11.5%)	**46 (88.5%)**
	Presenting individuals' full stories	Features real-life stories of current/ former athletes highlighting their experience beyond their diagnosis	Kelsey Plum, a former University of Washington basketball player and current WNBA player, was highlighted as a mental health advocate, sharing her journey.	6 (11.5%)	**46 (88.5%)**
	Including direct quotes from those with mental health challenges	Includes first-person quotes direct from college athletes	"It's been a complete game changer, being able to speak to someone with no judgment." -University of Southern California linked article features a direct quote from a men's track and field student-athlete	14 (27%)	**38 (73%)**

Adopting a strength-based narrative	Disclosures are described using language that reflects resilience or equates challenges to physical injury	"Equating mental health issues with 'invisible injuries'." -University of Washington	**51 (98%)**	1 (2%)
Challenging prevailing sport ethic	Balances references of strength with acknowledge-ment of health needs	Institutional missions, like Notre Dame, aimed to "promote a culture of inclusion, well-being, and excellence both in and out of sport".	**43 (82.7%)**	9 (17.3%)
Call to action	Clear in-structions for immediate help-seeking	If you or someone you know is struggling, you can reach us through our online referral form or call 988.	**38 (73%)**	14 (27%)

Mental Health Literacy (MHL)	Knowing how to achieve/sustain positive mental health	Tools for independent mental health management (mindfulness apps, techniques, handouts)	Self-help tools: mindfulness apps (Headspace, Calm, and Breathe2Relax); handouts	**43 (83%)**	9 (17.3%)
		Peer support structures	Team-building services, group counseling, and mental skills workshops	**28 (53.8%)**	24 (46.2%)
	Recognizing mental disorders and their remedies	Screening Assessments	Online or in-person tools for identifying mental health issues (screening assessments, checklists) E.g., Crisis identification tools for coaches, University of Illinois Urbana-Champaign; Anonymous online mental health screening, Penn State	12 (23%)	**40 (77%)**
	Improving help-seeking skills	Location of Offices	Identifies where athletes can find mental health services on campus, including building name or office number E.g., Office located in Smith Hall, Room 203.	**40 (77%)**	12 (23%)
		Confidentiality	Explicitly outlines that mental health information remains private and describes any exceptions (legal, safety, etc.)	**30 (57.7%)**	22 (42.3%)

		After Hours Support	Provides 24/7 mental health support or external emergency resources National Suicide and Crisis Lifeline (988) and Crisis Text Line (741741)	**29 (55.8%)**	23 (44.2%)
		What to expect	Offers details about basic scheduling details, session length, paperwork, and treatment goals.	17 (32.7%)	**35 (67.3%)**
		Cost	Clarifies whether on-campus services are free; off-campus care may involve insurance.	14 (27%)	**38 (73%)**
		Referral process	Mention of structured pathways to describe how athletes are referred to mental health services	21 (40.3%)	**31 (59.6%)**
Integrated Care	Integrated care	Initial Athletic Contact Points	Listed athletic trainers as starting points for accessing mental health care.	**43 (83%)**	9 (17.3%)
	Interprofessional competence	Qualified provider listing	Lists names, credentials, and roles of available mental health professionals. A mix of professionals (CMPCs, LPs, LSWs, LPCs) listed with credentials and contact info	25 (48.1%)	**27 (52%)**

which were evident in the findings of this study. The following section explores the C.A.R.E. Framework, which directly addresses the practical gaps identified by Prior and co-authors (2022), and reflected in this study, by offering a structured, applied model for designing athletic department webpages that support athlete mental health.

Findings from this study about the lack of personal stories, quotes, and transparent discussions about diagnoses, symptoms, and treatments, suggests a missed opportunity to reduce stigma and foster relatability. While respecting athlete privacy is crucial, this absence may reflect a larger issue: a sport culture where mental health is still viewed as a vulnerability. Without these authentic narratives, webpages fall short in normalizing mental health challenges and encouraging help-seeking behaviors. Therefore, we propose Phase 1 of the C.A.R.E. Framework – *Communicate the Full Story*.

Phase 1 focuses on humanizing mental health by highlighting diverse athlete experiences beyond clinical language. Institutions are encouraged to feature case vignettes, first-person stories, and testimonials that show how athletes manage mental health alongside performance. Simple tools – like "Mental Health Mondays" or anonymous story submissions – can normalize help-seeking and reduce stigma. Consulting student-led groups in this effort ensures authenticity and fosters a more supportive environment.

One of the most significant barriers found in the study was the lack of clear explanations regarding what to expect during mental health services. Many webpages provide appointment scheduling details but omit critical information about session structure, confidentiality policies, costs, and the referral process. Without this clarity, athletes may feel uncertain or hesitant about reaching out for support. To address this, we propose Phase 2 of the C.A.R.E. Framework – *Address Expectations*.

Phase 2 of the C.A.R.E. framework emphasizes transparency by clearly outlining confidentiality policies, service costs, and the referral process. Institutions should explain what remains private in counseling, clarify paperwork and session details, and offer step-by-step guides for accessing care. Tools like FAQs, infographics, and flowcharts can demystify the process and build trust. Highlighting what is and if not shared with coaches or families helps reduce fear, while providing targeted resources for staff supports a department-wide culture of care.

Results from this study highlighted a lack of organization and difficult-to-navigate webpages between DI P5 members. Many webpages lack clear entry points for mental health support due to disorganized or hard-to-find resources and limited visibility of crisis support options. The lack of self-screening tools further hindered athletes from identifying mental health concerns and determining when to seek help. These barriers created missed opportunities to provide an entry point for those who may be hesitant or unsure about pursuing professional support. To enhance usability, we propose Phase 3 of the C.A.R.E. Framework – *Refine Access to Help*.

Phase 3 focuses on making mental health resources easy to find and use. Athletic departments should place mental health links clearly on their websites – ideally under main tabs like "About Us" – with direct scheduling links, 24/7 crisis support, and contact info for key personnel. A streamlined layout with navigation bars, refer-

ral steps, and self-screening tools enhances access. Resources should support both athletes and coaches, reinforcing that mental health is a central part of athlete care.

While many webpages successfully challenge traditional sport narratives by redefining toughness to include mental health, some have failed to build a comprehensive mental health framework that addresses diversity, the unique needs of athletes, and the involvement of coaches and staff in supporting athletes' mental health. Therefore, to ensures that mental health support is accessible and relevant for all, we propose Phase 4 of the C.A.R.E. Framework – *Emphasize Inclusivity*.

This final phase emphasizes inclusivity by ensuring mental health resources reflect the diverse experiences of college athletes. Institutions should showcase a culturally competent team, offer identity-based support (e.g., for BIPOC, LGBTQIA+, and international students), and provide multilingual and varied-format materials. Directories should highlight providers' backgrounds and qualifications, while webpages can include content on transitions, injuries, and identity beyond sport. Peer networks and staff guides – such as communication tips or referral tools – can further foster belonging. This inclusive approach builds trust and ensures all athletes feel seen, supported, and empowered to seek help.

Institutions should develop resource guides that help staff or families recognize when an athlete may need mental health support and outline effective referral processes. A, "Safe to Say", document outlining strategies for coaching athletes with common mental health challenges can serve as a practical tool for guiding language use, emphasizing how words and communication styles impact mental health. By embedding inclusivity into mental health webpages, institutions can proactively create a more supportive and accessible environment for all.

Fundamentally, these pages should foster a safe, open environment where college athletes can discuss their well-being, understand what to expect when seeking help, and easily access mental health resources. They should also provide guidance for coaches, staff, and support systems to encourage help-seeking without stigma.

Limitations and Future Research

This study has some limitations that future research can address. First, the study focused on 52 DI P5 schools. It is important to note that while some P5 schools changed conferences in Fall 2024, the focus on P5 institutions in this study was intentional, aiming to explore how the most well-resourced programs use their websites as potential models for others. Future research should examine mental health resources vary across schools, conferences, divisions, and associations to explore how resource availability and accessibility differ based on institutional size, funding, and competition levels. Second, the study relied solely on grey literature, analyzing only publicly available athletic department webpages. This approach limits insight into how these resources are used and perceived, leaving a gap in understanding their engagement and effectiveness – an area that could serve as the foundation for future research. Future studies could build on the findings of this study by pairing the findings of this DQCA with athlete surveys or interviews, which could offer valuable insight into how athletes actually engage with these webpages and whether the

Table 3. C.A.R.E. Recommendations to Reduce Stigma on Collegiate Athletic Department Mental Health Webpages

Stigma Reduction Strategy	Aim	Recommendations	Example	Implications
COMMUNICATE	Fostering open dialogue to ensure athletes receive transparent, and stigma-free messaging about mental health resources	· Incorporate athlete testimonials and success stories · Allow anonymous submissions for mental health success stories	· A bold banner reads "Your Mental Health Matters—You Are Not Alone." An embedded short video features a student-athlete sharing their mental health journey.	· Encourages help-seeking by normalizing mental health struggles and highlighting positive outcomes.
ADDRESS EXPECTATIONS	Clearly define what college athletes can expect when seeking mental health support, reducing uncertainty and concerns about confidentiality, commitment, and impact on athletic participation.	· Provide a detailed FAQ addressing confidentiality, session attendance, and time commitment · Clearly explain pathways to care, including emergency vs. non-emergency support · Develop a transparent referral process	· An FAQ section answers common concerns: "Is this confidential?" or "Will my coach know?"	· Reduces fear and hesitation in seeking help by clarifying what will be discussed and helps to balance athletes' busy schedules · Ensures athletes understand where to go for different levels of mental health concerns

REFINE ACCESS TO HELP	Streamline and enhance the accessibility of mental health resources by improving the organization and visibility of support services	· Feature a clear, highly visible appointment scheduling system and 24/7 crisis hotlines · Include self-screening tools for mental health concerns · Provide digital self-help resources (e.g., apps, handouts)	· A clearly visible "Get Help Today" button links to 24/7 crisis hotlines. A directory of counselors and psychologists is listed with specialties.	· Empowers athletes to assess their mental health and determine when professional support may be needed. · Encourages proactive mental health management through easily accessible tools.
EMPHASIZE INCLUSIVITY	Ensure that mental health resources are accessible, relevant, and representative of all college athletes, particularly those from diverse and marginalized communities.	· Feature a diverse team of mental health professionals, highlighting their cultural competencies · Create identity-based mental health resources (e.g., dedicated sections for BIPOC, LGBTQ+, and international college athletes) · Offer peer-led support programs · Develop coach, staff, and family-specific resources	· Content tailored for BIPOC, LGBTQIA+, and first-generation athletes, featuring relatable stories and dedicated resources.	· Ensures all athletes see themselves reflected in the resources provided · Provides a relatable support system · Helps athletes, coaches, and staff communicate in ways that foster a positive mental health culture

strategies employed effectively reduce stigma and promote MHL. Third, a limitation of this study is its focus on anti-stigma strategies using a DQCA approach, which may overlook other important dimensions of mental health communication. Future research could build on these findings by applying alternative theoretical lenses – such as resource dependency theory, organizational legitimacy theory, or user experience (UX) design frameworks – to explore the external influences and organizational constraints around constructing these pages, what messages athletes find most persuasive, or how design affects engagement. Methodologically, researchers could incorporate randomized controlled trials (RCT), surveys, or interviews with college athletes and staff to assess webpage impact and effectiveness in real-time, offering deeper insights into accessibility, trust, and decision-making. Finally, the research team acknowledges that conferences can have various mental health initiatives, institutions can change affiliations, and that webpages can be modified or updated at any time, which may affect the consistency and availability of information for both users and researchers. Future research could address this by examining the impact of changes over time, tracking user engagement and outcomes before and after adjustments.

Conclusion

Institutions must create a safe, open environment where college athletes can discuss their well-being, access mental health education, and feel encouraged to seek support without stigma. Findings suggest despite growing attention to mental health, many DI athletic department webpages do not reflect this progress as there was a lack of content and organization of these webpages which was notably missing personal narratives, universal screenings tools, clear expectations about the help-seeking process, and detailed descriptions of available resources. To address these gaps, this study suggests implementing a proactive approach to communication, expectation-setting, accessibility, and inclusivity by consolidating resources on a page using the C.A.R.E. framework to reduce stigma and facilitate help-seeking using athletic department's mental health webpages. This framework provides a phased approach to improving mental health initiatives in athletics by fostering open dialogue to ensure that college athletes receive comprehensive, transparent, and stigma-free messaging about mental health resources through the *Communicate the Full Story* phase. The *Address Expectations* phase focuses on clearly defining what college athletes can expect when seeking mental health support, while the *Refine Access to Help* phase aims to streamline and enhance the accessibility of mental health resources by improving the organization and visibility of support services. Finally, the *Emphasize Inclusivity* phase ensures mental health webpages reflect the diverse experiences and backgrounds of college athletes. This framework serves as a practical guide for structuring mental health webpages to reduce stigma and encourage timely help-seeking.

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Perceived Stress and Burnout: Experiences of College Coaches in NCAA Division III Institutions

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The purpose of this research is to explore how gender and family dynamics, particularly parenthood, impacts stress and burnout levels among National Collegiate Athletic Association (NCAA) Division III coaches. Our sample reported moderate perceived stress but low overall burnout. This study analyzed 752 responses using the Copenhagen Burnout Inventory (α = .945) and Perceived Stress Scale (α = .888), applying descriptive statistics and Mann-Whitney U tests to identify differences. Results indicate that women coaches report significantly higher stress and burnout levels than men. Conversely, coaches with children experience lower perceived stress and personal burnout compared to those without children. These findings underscore gender disparities in stress and burnout while highlighting the potential buffering effect of parenthood. Personal life factors, particularly family dynamics, appear to play a crucial role in coaches' mental well-being. Understanding burnout among coaches is essential for fostering a healthy team environment. Sport organizations should invest in mental health support tailored to coaches' needs, incorporating family-oriented interventions to mitigate burnout. Prioritizing coaches' well-being can enhance overall team functioning and athlete development.

Key words: mental fatigue, work-related exhaustion, role overload

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In recent years, there has been a growing emphasis on burnout and mental health and well-being in collegiate sports, particularly regarding the well-being of student-athletes. These athletes must balance the demands of their sport with their academic responsibilities, and underperformance in either area—combined with their numerous obligations—can contribute to mental health struggles and burnout (Brown et al., 2022). While extensive research has been conducted on managing student-athlete mental health, far less attention has been given to the mental well-being of coaches (McGuire, 2023). A recent study conducted by the NCAA highlighted the increased strain on coaches' mental health and well-being, as a third of all survey respondents reported feeling mental fatigue, due to being overwhelmed by their growing demands on the job, which have caused sleep related issues (McGuire, 2023). Work-related and financial concerns were identified as the primary factors negatively affecting coaches' mental health and well-being, particularly among millennial and younger NCAA coaches (McGuire, 2023).

Mental health issues marked by emotional or mental fatigue can be described as burnout, a syndrome that happens with prolonged stress at work or home that results in being overwhelmed, cynical, or loss of motivation (Wright et al., 2023). Understanding burnout among college coaches is important as it can have a direct impact on the quality of the relationship they have with their athletes. Moreover, although the World Health Organization (2019) classifies burnout as a workplace phenomenon, there is emerging information that burnout can manifest from personal life stress, as well as those work demands and patient/client/athlete interactions (Oglesby et al., 2020; Olusoga et al., 2019; Taylor et al., 2019; Wright et al., 2023). Although unrealistic work demands are large contributors to burnout, individual factors (i.e., gender, work addiction) can influence experiences as well for coaches and others working in sport (Oglesby et al., 2020; Olusoga et al., 2019; Taylor et al., 2019; Wright et al., 2023). Specifically, women and those who have a strong identity to the work (work addicted) can experience greater levels of burnout (Oglesby et al., 2020; Olusoga et al., 2019; Taylor et al., 2019). Parenthood also can confound experiences of burnout; as work-family conflict has been reported as a prime catalyst for burnout (Oglesby et al., 2020).

Literature Review

Stress in Coaching

Coaching is increasingly recognized as a high-stress profession. Coaches face long working hours, job insecurity, and the emotional demands of player development and team dynamics; all that may contribute to chronic stress (Olusoga et al., 2021). Moreover, working in sport has been associated with challenges around work-life balance, exacerbated by the organizational expectations associated with the roles and responsibilities of those working in sport (Graham & Smith, 2022). Coaches at any level face a variety of stressors including work-related (e.g., competition preparation, conflicts with athletes), performance (e.g., winning, success of the program)

and personal (e.g., missed family time; Olusoga et al., 2010, 2019; Schaffran et al., 2016). Evidence indicates that employment within collegiate sport is highly challenging and demanding, as coaches are required to manage numerous stressors that often persist over extended periods of time (Raedeke, 2004). These stressors include long work hours, recruiting pressures, performance expectations, and administrative responsibilities, which collectively increase the risk of burnout. Raedeke's work contributes to the field by highlighting how chronic occupational demands in coaching impact well-being and underscoring the need for organizational and individual strategies to support coaches' mental health.

Experiences of stress can stem from a variety of sources, including organizational demands (e.g., long working hours, high job expectations), personal life circumstances (e.g., family responsibilities), and individual characteristics (e.g., gender, perfectionism; Tashman et al., 2010). Perceived stress is commonly defined as the subjective appraisal of these stressors and one's perceived ability to manage them effectively (Cohen et al., 1983). Smith's (1986) cognitive-affective model of stress in sport and coaching provides a useful framework for understanding this process. The model conceptualizes stress as a dynamic transaction between the individual and their environment, emphasizing the role of cognitive appraisal and coping resources (Smith, 1986). According to this model, when individuals perceive environmental demands as exceeding their coping abilities, and appraise the situation as threatening or uncontrollable, they are more likely to experience negative psychological and physiological outcomes (Smith, 1986). This perspective aligns with findings that individuals who perceive their stressors as unpredictable or unmanageable are at greater risk for compromised mental and physical well-being.

Perceived stress has been linked previously among coaches (Olusoga et al., 2019; Wright et al., 2023). As the season continues and job-related stress accumulates, coaches are likely to experience a tool on their mental health and well-being, or even burnout (Raedeke, 2004). Coaches may experience similar pressures and challenges with their mental health and well-being as their athletes (Pilkington et al., 2022). The NCAA Division I setting is often the central focus of these discussions around stress and working in sport, as the culture is described as non-stop with underlying expectations of working long hours (e.g., ≥40 per week), being physically present or available 24/7, along with travel that does not end with the season (Bruening & Dixon, 2007; Dabbs et al., 2016; Dixon & Bruening, 2005; Huml et al., 2020; Taylor et al., 2019). While all three NCAA divisions have stressful time demands and work commitments, the Division I setting has more prominent stressors including the transfer portal, the heightened expectations of winning, and a growing influence on Name, Image, and Likeness (NIL) deals; this has added new layers of responsibility for collegiate coaches (Friedman & Steinfeldt, 2024). These additional pressures can increase workplace stress and perceived stress—both of which are linked to burnout (Bruening & Dixon, 2007; Dixon & Bruening, 2005; Huml et al., 2020; Taylor et al., 2019; Wright et al., 2023).

Burnout in Coaching

Burnout is a psychological syndrome that develops in response to chronic stress, particularly when the perceived demands consistently outweigh coping resources. Freudenberger (1980) defined burnout as "a state of fatigue or frustration brought about by a devotion to a cause, way of life, or relationship that failed to produce the expected reward" (Freudenberger, 1980). According to Smith's (1986) Cognitive-Affective Model, burnout unfolds through a four-stage process. In the first stage (*situational demands*), a coach may be juggling intense competition schedules, administrative duties, and family responsibilities, such as caring for young children or aging parents (Smith, 1986). In the second stage (*cognitive appraisal)*, the coach begins to perceive these overlapping demands as unmanageable, questioning their ability to meet expectations both professionally and personally (Smith, 1986). This leads to the third stage (*physiological response*), where chronic stress manifests as fatigue (Smith, 1986). Finally, in the fourth stage (*behavioral responses*), the coach may begin to withdraw emotionally from their team, reduce efforts, or feel detached from their role, ultimately leading to burnout (Smith, 1986).

Although definitions have evolved over time, they consistently emphasize burnout as a state of emotional, physical, and mental fatigue (Demerouti, 2024; Khammissa et al., 2022; WHO, 2019). Individuals working in high demand jobs such as coaches, athletic trainers, and other stakeholders in sport are susceptible to burnout (Singe et al., 2025). Coaching is a high-pressure profession that requires deep emotional investment, like the athletes they mentor. The constant pressure to achieve results can take a toll, and while many coaches are driven by the pursuit of excellence (Knights & Ruddock-Hudson, 2016), failure to meet expectations can be detrimental to their mental health, as burnout is likely.

Organizational Stressors and Burnout

Burnout has been previously recognized as a byproduct of work-related stress; however, burnout is believed to be caused by multiple sources including personal factors, interactions with athletes, and work demands (Kristensen et al., 2005). Workplace stress within sport can be categorized into three primary areas: the conditions of the workplace, the expectations placed on individuals, and the overall workload. When these stressors are prolonged or exceed one's coping resources, they can contribute directly to burnout by fostering emotional exhaustion, reduced sense of accomplishment, and depersonalization (Maslach & Leiter, 2016; Raedeke, 2004). Coaches are expected to win and make sacrifices to achieve success, expectations that create the plausibility of workaholism, a leading factor in burnout among coaches (Taylor et al., 2019). Furthermore, long hours (e.g., practice, recruiting, competitions), travel, and the ever-changing landscape of college athletics provide a foundation for burnout to occur. Working with athletes can also lead to burnout, as once described as a syndrome that manifests by the strain of caring for others. Coaches are leaders of their team who are inherently meant to guide, support, and encourage their team to achieve their goals (Freudenberger, 1980).

Personal Stressors and Burnout

Personal life stress can arise from family and spousal relationships, household responsibilities, and challenges in finding time for personal hobbies, exercise, or self-care. These personal demands often interact with professional responsibilities, creating work-family conflict; a situation in which the demands of work and family roles are mutually incompatible. In athletic training, WFC has been identified as a key predictor of burnout, contributing to emotional exhaustion, reduced personal accomplishment, and decreased job satisfaction (Graham & Dixon, 2017; Bruening & Dixon, 2007; Dabbs et al., 2016). Prior research highlights that irregular schedules, long work hours, and performance pressures intensify this conflict, demonstrating how personal and professional spheres intersect to affect coaches' well-being (Taylor et al., 2019).

Women in sport and athletic training often navigate complex demands that contribute to elevated stress and burnout. Despite working fewer hours than their male counterparts, they report higher levels of burnout—driven not only by professional pressures but also by societal expectations to excel in both career and caregiving roles (Mazerolle & Eason, 2015; Rynkiewicz et al., 2022). This "superwoman" ideal places women in a constant state of striving, where success in one domain can feel like failure in another (Mazerolle & Eason, 2015). Many report experiencing guilt—whether for missing family time due to work obligations or for stepping back professionally to prioritize home responsibilities (Rynkiewicz et al., 2022). These emotional burdens, compounded by role overload, highlight the need to examine how gender and family status intersect to influence well-being in athletic training professions.

In addition to personal stressors, professional demands within athletic training—including workload, administrative responsibilities, and performance expectations—also contribute to burnout. These workplace stressors can compound personal stress, leading to cumulative fatigue and emotional strain (Maslach & Leiter, 2016; Raedeke, 2004). Understanding both personal and organizational contributors provides a comprehensive view of burnout in the field, clarifying what the existing literature reveals and identifying gaps that the current study aims to address.

The NCAA Division III setting currently has 429 programs making it the largest of the three NCAA subdivisions. Unlike the other two divisions, NCAA Division III institutions do not have scholarships to offer their athletes and may have smaller athletic budgets. The context in which athletics programs are delivered within the NCAA Division III setting could lead to unique stressors for coaches but has yet to be explored in the literature. Coaches in the NCAA Division III setting develop their programs without athletic scholarships and smaller budgets as compared to those in the NCAA Division I and II settings. The recent NCAA survey suggests that although coaches within the NCAA Division III report stress, it appears to be less than those in NCAA Division I (McGuire, 2023). Moreover, empirical evidence suggests that low to moderate stress levels have been reported in college coaches and that burnout can occur due to perceived stress from one's work and personal life

(Wright et al., 2023). The purpose of this study was twofold: (1) to explore perceived stress among NCAA Division III coaches using the perceived stress model, and (2) to investigate the experiences of burnout within the same population. In particular, the current study examined various demographic variables on perceived stress and burnout including gender and family status. There is enough evidence to suggest that stress and burnout are high in athletics, but little research has focused specifically on the NCAA Division III setting.

It was hypothesized that NCAA Division III coaches will experience moderate levels of total perceived stress (H1) and burnout (H2). It was hypothesized that NCAA Division III women coaches will experience higher levels of perceived stress (H3) and total burnout (H4) compared to men coaches. It was hypothesized that NCAA Division III coaches who have children will report higher levels of perceived stress (H5) and personal burnout (H6) compared to those who do not have children.

Method

Research Design

An online cross-sectional survey (Qualtrics, Provo UT) was used to collect data on coaches' perceived stress and burnout while working full time in the NCAA Division III setting. Institutional review board approval was secured prior to data collection. Both scales used in data collection have been reported as valid and reliable instruments to collect data on perceived stress (Cohen et al., 1983; Kotwas et al., 2017) and burnout (Kristensen et al., 2005; Snarr & Beasley, 2022). The Perceived Stress Scale (PSS) has been used within the coaching population previously (Knight et al., 2013). The CBI has been used within sport previously among sport performance coaches (Snarr & Beasley, 2022) and athletic trainers (Singe et al., 2025; Singe et al., 2023), but not yet with coaches in the NCAA setting.

Participants, Recruitment and Exclusion Criteria

To participate in this study, participants were full-time coaches working in the NCAA Division III level. This excludes any volunteer, part-time, or graduate assistant coaches. A research team accessed the 429 institutions' websites sponsoring NCAA Division III athletics programs. A database of coaches' email addresses was created for recruitment purposes. An email was sent out to all the coaches listed in January 2025. Following the initial invitation, a reminder email was sent three weeks later. Emails of the Division III coaches were obtained through publicly available information on school websites. From there, data were collected based on how many coaches accessed the email and completed the survey. Prior to completing the survey, participants were given an informational sheet to orientate them about the study's purpose, what to expect within the survey, and consent.

Procedures

Quantitative analysis through a cross-sectional survey was utilized. Coaches at the Division III level responded to a survey administered through the Qualtrics

platform. The survey was anticipated to take 15-20 minutes to complete and contained questions that have been previously reviewed by three experts on work-life balance for clarity and content as they relate to the aims of the study. Prior to the survey, participants were informed that they may withdraw from the study at any point. Furthermore, participants were informed that there were no identifying markers to be collected, and the responses were completely anonymous and could not be connected to the participants in any way. Three screening questions were asked at the start of the survey to confirm eligibility. These screening questions confirmed that they work full-time in the NCAA Division III setting, the title of the coaching position they hold, and confirmed the level of sport they coach. If the participants answered "no" or "other" to any of these questions they were directed to the end of the survey and excluded from the study. For those that were eligible, they were able to begin the survey. The survey began with demographic questions asking about age, gender, number of children, marital status, and employment status. This information was used to separate the participants into groups for analysis. The final part of the survey included two validated scales that have been previously used in studies including the coaching population (Moen et al., 2024; Santi et al., 2021; Snarr & Beasley, 2022).

Instrumentation

The Perceived Stress Scale (PSS) is a reliable ($\alpha = 0.85$), 10-item scale that measures the amount of stress an individual is perceiving (Cohen et al., 1983) using a 5-point Likert scale (ranging from never to very often). Results of the scale were analyzed as instructed in the validation of the scale, where a score between 0 to 13 is considered low, 14 to 26 is moderate, and 27 to 40 would indicate high stress (Cohen et al., 1983).

The Copenhagen Burnout Inventory (CBI) is a reliable ($\alpha = 0.86$), 19-item scale that was used to identify the level of overall burnout that the coach is experiencing, as well as personal, work, and client-based burnout (Kristensen et al., 2005). The first six questions assess personal burnout, which reflects one's overall fatigue from life, the next seven questions are burnout from work experiences, and the final six questions evaluate burnout from working with clients (Kristensen et al., 2005). The wording in the CBI was modified to fit the coaching profession as the word "clients" was changed to "athletes". Each individual component of the scale can be summed to determine the source of burnout for each participant as well as the overall burnout score. The 5-point Likert scale is rated from 0 (never/almost never), 25 (seldom), 50 (sometimes), 75 (often), and 100 (always), with a higher score indicating a higher level of burnout. Scores below 50 are considered low, 50 to 74 is moderate, 75 to 99 is high, and 100 indicates severe burnout.

Data Analysis

Data from the survey responses were exported from Qualtrics into Excel (Microsoft Corporation). The data were cleaned and filtered through, and responses were excluded if critical responses were incomplete, questions were left unanswered, or the entirety of the scales were incomplete per scale instructions. The responses that

remained were analyzed using SPSS (version 30.0; IBM Corporation). Descriptive statistics were performed to calculate means for demographic information. Mann-Whitney U tests were used to examine differences between men and women coaches within the CBI and PSS scales, as well as to compare those with and without children among the two scales. In all cases $p < 0.05$ was established as the level of statistical significance.

Results

A total of 16,483 emails were sent in January 2025. 1,279 subjects began the survey (7.7% response rate), and 1,228 surveys were completed (96% completion rate). After reviewing the responses and removing those that were not eligible or did not complete the entirety of the scales per scale instructions, 752 responses remained and were analyzed further. The Cronbach α was calculated for the PSS and CBI to determine the internal consistency within our population and yielded a value of 0.888 for PSS and a value of 0.945 for CBI.

Participant Demographics

On average, the participants' age was 41 ± 12 years and at the time of completing the survey, had 16 ± 11 years of experience coaching and were working an average of 50 ± 15 hours per week. See Table 1 for participant demographics.

Table 1
Participant Demographics

Demographic Variable	*n*	%
Gender		
Men	462	61.6%
Women	285	38.0%
Other	3	0.4%
Not Reported	2	
Marital Status		
Married	459	61.0%
Single	198	26.3%
Cohabitating	48	6.4%
Divorced	18	2.4%
Other (Separated, Widowed, Dating, etc.)	29	4.0%
Have Children		
Yes	395	52.7%
No	355	47.3%
Not Reported	2	

Note. Percentages are based on a total sample size of 752 coaches. Some participants chose not to report gender or parental status.

Perceived Stress and Burnout

Participants reported moderate levels of perceived stress on the Perceived Stress Scale (PSS; $M = 17.4$, $SD = 6.4$), supporting Hypothesis 1. Table 2 presents the distribution of perceived stress severity across the sample. Total burnout scores on the Copenhagen Burnout Inventory (CBI) were low ($M = 44.7$, $SD = 18.4$), leading to the rejection of Hypothesis 2. Subscale analyses revealed moderate levels of personal burnout ($M = 54.0$, $SD = 19.2$), low work-related burnout ($M = 47.2$, $SD = 21.2$), and low athlete-related burnout ($M = 32.5$, $SD = 21.6$). Table 3 provides a detailed breakdown of burnout severity.

Table 2
Severity of Perceived Stress among Collegiate Coaches

Category	*n* (%)
Low	212 (28.3)
Moderate	477 (63.7)
High	60 (8.0)

Table 3
Severity of Burnout among Collegiate Coaches

Category	*n* (%)
Low	450 (59.8)
Moderate	255 (33.9)
High	47 (6.3)
Severe	0 (0)

Gender, Perceived Stress, and Burnout

Women coaches reported significantly higher levels of perceived stress and total burnout compared to men coaches, supporting Hypotheses 3 and 4. Specifically, women reported a mean Perceived Stress Scale (PSS) score of 18.4 (SD = 5.9), while men reported a mean score of 16.8 (SD = 6.7). A Mann–Whitney U test indicated that this difference was statistically significant, $U = 55{,}910.5$, $p < .001$. For total burnout, women coaches reported a mean score of 49.8 (SD = 17.4), whereas men coaches reported a mean of 41.5 (SD = 18.3). This difference was also statistically significant, $U = 48{,}847.5$, $p < .001$. Table 4 presents Copenhagen Burnout Inventory (CBI) scores and standard deviations by gender and overall.

Table 4
CBI Scale and Subscale Means by Gender

Scale and Subscales	Men Mean (± SD)	Women Mean (± SD)	Overall Mean (± SD)
Total Burnout Inventory**	41.5 ± 18.3	49.8 ± 17.4	44.7 ± 18.4
Personal-related burnout**	50.4 ± 19.4	59.5 ± 17.6	54.0 ± 19.2
Work-related burnout**	44.1 ± 21.4	52.0 ± 20.2	47.2 ± 21.2
Athlete-related burnout**	29.4 ± 21.2	37.5 ± 21.2	32.5 + 21.6

Note. CBI – Copenhagen Burnout Inventory.
***p<0.001*

Parental Status, Perceived Stress and Burnout

Coaches with children (n = 393) reported significantly lower levels of perceived stress (p = .004) and personal burnout (p = .013) compared to coaches without children (n = 354), which did not support Hypotheses 5 and 6. Coaches with children reported a mean Perceived Stress Scale (PSS) score of 16.4 (± 6.5), whereas coaches without children reported a score of 18.2 (± 6.2). A Mann–Whitney U test revealed this difference was statistically significant, U = 61,053.5, p = .004. For personal burnout, coaches with children reported a mean score of 52.3 (± 18.9), while those without children reported a score of 55.7 (± 19.5). This is also a significant difference as indicated by a Mann–Whitney U test, U = 62,746.0, p = .013. Table 5 presents the Copenhagen Burnout Inventory (CBI) means and standard deviations for coaches with and without children, as well as overall.

Table 5
CBI Scale and Subscale Means by Familial Status

Scale and Subscales	Yes Children Mean (± SD)	No Children Mean (± SD)	Overall Mean (± SD)
Total Burnout Inventory*	43.1 ± 18.3	46.8 ± 18.3	44.7 ± 18.4
Personal-related burnout*	52.3 ± 18.9	55.7 ± 19.5	54.0 ± 19.2
Work-related burnout*	44.8 ± 21.2	49.9 ± 21.0	47.2 ± 21.2
Athlete-related burnout	31.9 ± 21.7	33.3 ± 21.5	32.5 + 21.6

Note. CBI – Copenhagen Burnout Inventory.
**p<0.05*

Discussion

Sport organizations have their own unique set of work demands and stressors, making it challenging at times which can lead to burnout (Huml et al., 2020; Taylor et al., 2019). There is evidence that coaches and others who work in sport demonstrate tendencies for workaholism, experience work-family conflict, and burnout. Occupational and life stress may contribute to these experiences. Within

the coaching literature, there is a heavy focus on the NCAA Division I setting and little on the NCAA Division III setting. The unexpected finding, that coaches with children report lower stress and personal burnout, contradicts common assumptions that parenthood increases strain due to added responsibilities, time demands, and emotional pressures. Instead, this aligns with the demands–rewards perspective, which suggests that parenthood can provide meaning, fulfillment, and protective effects that buffer against stress and burnout (Ren et al., 2024).

Coaching and Stress

The landscape of coaching is one that places high demands on coaches, which can lead to a perception of high occupational stress. We predicted that NCAA Division III coaches would experience moderate levels of stress due to the time demands, recruiting and retention demands, pressures to win, and job security (Knight et al., 2013; Wright et al., 2023). Within our sample, we found that 64% of the coaches reported moderate levels of stress. This confirmed our initial hypothesis and aligned with the vast literature (Tashman et al., 2010) on coaching, that coaching is a stressful profession (Knight et al., 2013; Wright et al., 2023).

Literature may not always discuss how the level (i.e., Division I vs Division III) can influence occupational stressors, but often each level within the NCAA setting can bring different stressors. Our study's design did not collect insights on the work and personal stressors for our coaches, perceived stressors in the NCAA DIII setting could be lack of athletic scholarships, coaching hours, and travel. Hours worked are another factor contributing to perceived stress, with this sample reporting an average of 55 or more hours per week at the time of the survey. Such extended work hours can be stressful, even when coaches enjoy their jobs, as they reduce the time available for personal activities, hobbies, and household responsibilities. Coaching in sport often demands significant dedication and long hours, and prior research has consistently shown that most coaches work well beyond a standard 40-hour workweek (Huml et al., 2020; Taylor et al., 2019).

Salaries of NCAA Division III coaches are much lower than those of NCAA Division I and II coaches (NFHCA, 2022). Financial strain can lead to increased perceived stress, particularly for those who view themselves as the breadwinner of their families. Our sample was comprised largely (62%) of men coaches which could give merit to this theory. Additionally, for this sample personal burnout was the highest subscale with our sample reporting moderate levels of personal burnout compared to low for work and athlete-based burnout.

Coaching and Burnout

Burnout does not occur overnight, but rather it is a process of prolonged stress that goes unmanaged. We predicted, initially, that burnout would also be moderate for this group of college coaches. However, we found that the overall score was classified as low. In fact, 60% of the sample was categorized as low, compared to 34% with moderate burnout. Of note, this is an interesting finding as our sample had moderate levels of perceived stress, a known predictor of burnout (Singe et al., 2025).

Because burnout is considered a process rather than a singular event, the perceived stress measured in our sample may represent only a transitory stage. Historically, burnout was viewed strictly as an occupational hazard; however, emerging literature suggests that personal factors also contribute to its development. For example, consistent with recent work in athletic training (Singe, Mydosh, Cairns, & Eason, 2023; Singe, Cairns, & Eason, 2025), our results showed that personal burnout was the highest subscale, followed by work and then athlete burnout. Notably, the personal burnout score in our sample was classified as moderate (see Tables 3 and 4). This finding is important because it reinforces the evolving perspective that personal life stressors play a central role in the burnout process, not just occupational demands. By highlighting the prominence of personal burnout among coaches, this study expands existing knowledge by demonstrating how stressors outside the workplace may interact with professional responsibilities, offering a more comprehensive view of the factors contributing to burnout in sport.

Previous studies have found that there are many factors contributing to burnout in coaches such as ruminating over their performance, working too many hours, lack of control of results, scrutiny from the media, and more. (Hassmén et al., 2019, 2020; Kilo & Hassmén, 2016). Workplace fit could also explain why work and athlete burnout were lower compared to personal burnout. Findings from our study align with Sas-Nowosielski et al.'s findings that sports coaches are not emotionally exhausted despite the number of stressors they may be experiencing (Sas-Nowosielski et al., 2018). This could be because they have strong support systems, may find enjoyment in their jobs as coaches, and find passion in their work. A coach's passion for their job increases their job satisfaction (Gilbert, 2012), and may even cause coaches to work more hours than they are paid for (Hassmén et al., 2019). Passion, along with coping strategies, may play an important role in protecting coaches from burning out in their high stress jobs.

Gender, Stress and Burnout

Women coaches experience higher levels of stress and burnout compared to men often due to role conflict, workload incongruence, and the tendencies for emotional-based coping compared to problem-based coping (Bentzen et al., 2016; Caccese & Mayerberg, 1984; Fletcher & Scott, 2010). Both hypotheses were confirmed within our sample—women coaches in the NCAA Division III setting report higher levels of stress and burnout compared to men coaches. Women in general often have lower tolerance to stress, often feeling the burden of life, family, and work stress compared to men (Knight et al., 2013). Additionally, biologically speaking, women tend to feel their stressors and view stress as a threat (Matud, 2004); a perception that naturally leads to higher levels of perceived stress.

Our sample demonstrated that women coaches reported higher levels of burnout compared to the men. This was expected as the literature has found that women are more prone to burnout within the collegiate setting, regardless of role (Lopez et al., 2020) in sport (i.e., coach, athletic trainer) (Singe et al., 2025; Taylor et al., 2019). Coaching can be all consuming with demands extending well beyond the competitive season, which can increase the demands placed on the coach. Working

55 hours or more, as reported by our sample, limits time to complete personal tasks, responsibilities, and obligations. Balancing work and home responsibilities have been linked to burnout, and for women they often take on many roles at home—which could explain why they report moderate levels of personal and work-related burnout (Mazerolle & Eason, 2015). Furthermore, women in sport have been found to report higher levels of stress and burnout despite working less hours, as they feel the pressures to be superwomen exceling at home and work (Mazerolle & Eason, 2015; Rynkiewicz et al., 2022).

Family and Burnout

Coaching is demanding and requires significant time and energy, including travel, practices, and games which limit time with family, and conflict with family commitments such as childcare, school events, and leisure time. With this in mind, we assumed that our sample of coaches who were balancing parenthood as well would report higher levels of stress and burnout. Parenting is an ongoing stressor which is why we predicted both to be moderate for our sample (Ren et al., 2024). We did, however, find the opposite of our hypothesis. Our results suggest that having children may serve as a protective factor against perceived stress and burnout instead of an additional burden adding to them. Although personal burnout was found to be moderate, those who had children reported lower levels compared to those without children.

This aligns with the findings of Knights and Ruddock-Hudson, who found that coaches' families can serve as a source of support (Knights & Ruddock-Hudson, 2016). Parenthood can create resilience for a person, a key stress management and coping strategy (Michael et al., 2024). Using work-life enrichment theory (Greenhaus & Powell, 2006), when a person assumes one role, they gain strength or skills in another. So, perhaps those coaches who have children have developed time management skills, structure with their days for efficiency, and have built their support networks. Parenthood can act as a buffer against burnout by providing purpose, emotional connection, and a sense of fulfillment—factors that can counterbalance the draining effects of work-related stress.

Implications for Sport

For coaches and athletic administrators, these findings emphasize the importance of prioritizing mental health support, not only for athletes, but for coaches as well. Woman coaches may be at a greater risk for stress and burnout and could benefit from resources such as access to counseling services, or more flexible schedules. Additionally, the finding that coaches with children reported lower stress and burnout suggests that encouraging work-life balance and making policies family friendly might enhance coach well-being. Athletic departments should consider integrating mental health resources that support all members of a coaching staff to create a healthier work environment, improve job satisfaction, and to contribute to improved team performance and retention of coaches. Investing in the mental health and well-being of coaches should be a necessity for sustainable success in sport.

Limitations and Future Research

A limitation of this study, and one that has been present in most coach burnout studies, is that many of these studies are cross-sectional survey designs. There is a lack of longitudinal studies that may help us understand burnout in coaches and how it affects them over the course of the season and offseason. Since the study relies on self-reported data through surveys, there is also a possibility of response bias within the data, as coaches may under or overreport their levels of stress and burnout. Additionally, the time of year that the survey was sent out (January 2025) might have altered the responses from coaches in terms of burnout, perceived stress, and hours worked per week as it was the holiday season/winter break. There are several areas that future research should touch upon. The impact of burnout on coaches both in and out of the work environment should be explored to examine the impact the burnout might have on their athletes or family. Prevention and treatment of burnout should also be further researched, as aiming to mitigate the effects of burnout may be crucial for some coaches.

Conclusion

This study provides important insights into perceived stress and reported burnout experienced by NCAA Division III coaches. The findings did not support the hypotheses that coaches with children experience higher levels of stress and burnout. This suggests that having children may serve as a protective factor against burnout and perceived stress. The results did confirm the hypotheses that women coaches experience higher levels of perceived stress and burnout. These results add to the understanding of coach mental health and well-being, though the cross-sectional design limits the ability to track mental health over the course of a season or even a career for a coach. Future research should aim to explore longitudinal studies, examine the impact that coach burnout has on others around them, and explore ways to prevent or treat burnout in coaches. The findings from this study highlight the importance of addressing mental health in all aspects of sports, including athletes, coaches, and other staff members.

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An Analysis of Female Division I Student-Athlete Expenditures and NACDA Director's Cup Points

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NCAA Division I athletic departments sponsor both men's and women's programs, but female athletes are often under sourced compared to their male counterparts. Male college athletes generally have more scholarship funding, recruit funding, and higher head coaching salaries. An examination of women's resources, particularly as individual sports relate to NACDA Director's Cup points, is nonexistent. Therefore, the purpose of this study was to examine the relationship between three areas of female athletic expenditures and the likelihood of earning Directors' Cup points. The study drew on the Critical Feminist Theory as a lens for examining why females are disadvantaged in college athletics, and to offer strategies for resource allocation that can maximize the success of women's sport programs. Findings suggested women's athletic expenditures were impactful, particularly with regard to the sport of gymnastics and power conference affiliation, which increase the odds of earning Directors' Cup points.

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In National Collegiate Athletic Association (NCAA) Division I intercollegiate athletics, overall program success is evaluated not only through marquee wins in football and men's basketball, but through broad-based excellence across all sports. One of the most comprehensive and prestigious measures of success is the National Association of Collegiate Directors of Athletics (NACDA) Directors' Cup, an annual award administered by the National Association of Collegiate Directors of Athletics. Institutions earn Directors' Cup points based on their teams' performance in NCAA championship events, with the top finishes in both men's and women's sports con-

tributing to a school's final score (Lawrence et al., 2012; NACDA, 2024). These standings are used by athletic departments to signal departmental excellence, enhance institutional branding, and attract support from donors, recruits, and alumni (Stokowski et al., 2020).

The Directors' Cup has become a proxy for comprehensive athletic success. As athletic departments pursue improvement in these standings, strategic resource allocation becomes critical (Beaudin, 2018; Lawrence et al., 2009). Longstanding gender-based resource disparities, however, threaten to undermine women's teams' contributions to overall athletic success (Staurowsky et al., 2022). Despite notable progress since the passage of Title IX, research continues to show that women's teams receive significantly fewer resources across several key expenditure categories, including athletically related student aid, recruiting budgets, and head coaching salaries (Gregg & Fielding, 2016; Staurowsky et al., 2022). These resource gaps exist even as the popularity and participation of female sports has grown. The number of female athletes has increased from fewer than 30,000 in 1972 to more than 220,000 in 2023 (NCAA, 2023).

This misalignment of resources is not only a matter of equity - it may also hinder athletic departments from maximizing their competitive potential. Evidence suggests that investments in women's sports may yield greater returns in Directors' Cup points than equivalent investments in men's sports, particularly in non-revenue programs (Beaudin, 2018; Lawrence et al., 2022). Nevertheless, women's teams remain systematically underfunded, reflecting broader structural inequities that have been deeply embedded in the culture of intercollegiate athletics (Birrell, 2000; Hoeber, 2007).

Guided by critical feminist theory, which emphasizes the ways in which power imbalances marginalize women in organizational systems, this study seeks to investigate how female athlete resources impact athletic success. Specifically, the purpose of this study was to examine the relationship between three key areas of women's athletic expenditures—athletically related student aid, team head coaching salaries, and recruiting expenses—and their association with earning Directors' Cup points. By identifying which investment strategies are most strongly associated with competitive success in specific women's sports, this research offers data-driven insights for athletic departments aiming to enhance equity and improve Directors' Cup performance.

Literature Review

Spending in Intercollegiate Athletics

Since the passing of Title IX, the number of women competing in intercollegiate athletics has grown at an astounding rate, from under 30,000 in 1972 to over 230,000 female athletes competing at NCAA institutions across 10,682 teams (NCAA, 2024). At the time of Title IX's passage, the average Division I institution sponsored just 2.5 women's sports. By 1981–82, the number of sponsored sport had increased to

7.3, and in 2022–23 the average was 10.6 (NCAA, 2024). This growth occurred after decades in which women's intercollegiate athletics operated under their own governance structure, the Association for Intercollegiate Athletics for Women (AIAW; Gerber, 1975), prior to the NCAA's acquisition of women's championships in 1982 (Smith, 2021). This historical shift underscored both the rapid expansion of opportunities for female athletes and the persistence of structural inequities in gender resource allocation.

Despite increased opportunities, financial data reveal that women's program funding continues to lag significantly behind men's programs. In 2022–23, NCAA institutions reported more than $18.9 billion in operating expenses across Division I athletics, with Power Conference programs (the ACC, Big Ten, Big 12, Pac-12, and SEC, plus Notre Dame) accounting for the largest shares (Knight Commission, 2023). Yet women's teams, despite making up 47% of Division I athletes, received approximately 30% of total recruiting resources (Fulks, 2020). For example, during the 2019–20 academic year, $214.1 million was spent nationwide on recruiting, but only $75.3 million was directed toward female athletes (Staurowsky et al., 2022). This discrepancy highlights a central paradox: although nearly half of Division I athletes are women, men's programs, particularly football and basketball, continue to consume disproportionate shares of the recruiting budget.

Recruiting expenses, as defined by the EADA include "all expenses an institution incurs attributable to recruiting activities (U.S. Department of Education, 2025, p. 1)," such as official and unofficial campus visits, transportation, lodging, meals, recruiting services, and staff travel. These costs are essential to talent acquisition, yet expenditures differ drastically across sports. Football alone often commands multimillion-dollar recruiting budgets, while the majority of women's sports operate with resources at a fraction of that level (Knight Commission, 2023). As a result, women's teams face significant disadvantages in attracting top athletes, which undermines both competitive balance and institutions' ability to maximize Directors' Cup success.

The annual operating cost of intercollegiate athletic departments continues to rise, particularly in the "Power Conferences." These institutions regularly exceed $100 million in athletics spending annually, while many Group of Five schools (American, Conference USA, Mid American, Mountain West, Sun Belt) spend less than half that total (Walker & Misawa, 2018). Men's sports, particularly football, dominate these budgets. The average FBS football program spends more than $20 million annually, compared to less than $10 million for all women's programs combined at many institutions (Fulks, 2020). These disparities illustrate the importance of examining women's resource allocations not just in terms of participation equity, but also in relation to financial investment and comprehensive measures of athletic department success (i.e., Directors' Cup points).

Athletically Related Student Aid

Although Title IX has led to significant progress in the expansion of women's intercollegiate sport, during the 2019-2020 academic year female athletes received

over $250 million less in scholarships than male athletes, with 49 Football Bowl Subdivision (FBS) schools having underfunded women's athletic scholarships (Jacoby et al., 2022; Staurowsky, 2022). Scholarships are critical for many students, especially given that students who receive such financial support are more likely to have a higher cumulative Grade Point Average (GPA) and are more likely to graduate from their universities in four years compared to those student athletes not on scholarship (McLaughlin, 2014). Accordingly, female athletes not receiving an equitable amount of athletically related student aid as compared to their male counterparts could have a negative effect on their performance in the classroom.

Coaching Salaries

Previous research has indicated that human resources in athletics provide a competitive advantage, often stemming from the coaches who help to develop and foster a sense of excellence among their athletes (Cunningham & Ashley, 2001; Wright et al., 1995). While these studies have outlined the importance of investing in coaches and athletes as providing a source of competitive advantage for many programs, many schools have not done so in the context of their women's sports (Cunningham, 2003; McLaughlin, 2014). For example, the head coach of a woman's team at Indiana University makes an average of $257,257 a year, while the head coaches of men's teams make an average of $1,094,647 a year (EADA, 2026). Group of Five schools show similar patterns. At Central Michigan University, for example, those numbers are $135,614 and $367,250, respectively (U.S. Department of Education, 2025). Across all schools that are members of the NCAA FBS, the coaches of women's teams receive only 19% of the total $1 billion spent on salaries for head coaches within their athletic departments (Staurowsky, 2022).

Recruiting Expenses

Intercollegiate athletic departments spend large sums of money to recruit the most talented players to achieve competitive success (Bergman & Logan, 2020; Caro, 2012). The money spent recruiting these athletes, however, has been disproportionately spent on male athletes. In particular, during the 2019-2020 academic year, of the $214,140,778 that was spent recruiting athletes, $75,290,142 (approximately 30%) was spent recruiting female athletes (Bergman & Logan, 2020). Given the suggestions in prior research that increased spending on women's sport programs at the intercollegiate level can result in greater success for those athletic departments (i.e., Directors' Cup standings; Beaudin, 2018; Lawrence et al., 2012), the aforementioned discrepancies in athletically-related student aid, head coaches salaries, and recruiting expenses between men's and women's sports could have a direct impact on the success of these athletic departments.

Sport Type

Individual sports often present unique resource demands compared to team sports, and these distinctions can influence both program sustainability and compet-

itive success. For example, sports such as gymnastics and tennis typically require fewer athletes, but higher per-athlete investments in coaching, equipment, and specialized facilities, while larger roster sports like soccer or softball spread resources across more participants (Lawrence et al., 2012; MacKeddie-Haslam, 2022). Prior research indicates that resource inputs can have differential impacts on success depending on the sport; in gymnastics, even modest increases in coaching salaries and recruiting budgets have been shown to strongly predict competitive outcomes (Colbert & Eckard, 2015). Conversely, in sports with broader rosters, such as soccer or lacrosse, scholarship allocations may be more critical to program competitiveness (Johnson et al., 2012; Pierce et al., 2017). These distinctions suggest that understanding which financial variables most strongly predict success in a given sport can help athletic directors deploy limited resources more effectively. Tailoring investment strategies to the unique characteristics of individual sports may not only improve competitive outcomes, but also enhance institutional standing in Directors' Cup rankings (Beaudin, 2018; Staurowsky et al., 2022).

NACDA Directors' Cup

There are metrics that can be utilized to define what athletic departments consider success. Some metrics include conference/national championships, post-season appearances, revenue generation, cumulative grade point averages of student athletes, and graduation rates of student athletes (Anderson, 2012; Baade & Sundberg, 1996; Humphreys &. Mondello, 2007; Litan et al., 2003; Orszag & Orszag, 2005; Osborne, 2004; Pope & Pope, 2008; Stinson & Howard, 2008; Terry et al., 2014; Turner et al., 2001; Walker, 2015). Although some of these metrics provide meaningful information, the most comprehensive marker of overall athletic success is a measure that considers athletic performance from men's and women's teams relative to all other programs in the U.S.

NACDA began the Directors' Cup competition in 1993 as a program to reward institutions that adopted a broad-based method to achieve success in many sports, across both men's and women's competition (NACDA, 2026). The competition encompasses all sports in which the NCAA, National Association of Intercollegiate Athletics (NAIA), or National Junior Collegiate Athletics Association (NJCAA) offers a championship, including FBS football, with the top 10 men's and women's teams from a given university being included in that institution's total score for a given year (NACDA, 2024). Each school must include baseball, men's and women's basketball, and women's volleyball, with the institutions that achieve success across many different sports having the highest rankings in the overall standings (Lawrence et al., 2012). A winning score varies by year and national finish. An NCAA championship earns the most points at 100 with a sliding scale for lower finishes. In the most recent Cup standings, the University of Texas won the 2024-25 Cup earning 1,255.25 points. To earn that level of points, most teams must perform well nationally, and funding is often linked to performance (Beaudin, 2018; Lawrence et al., 2007, 2012) Accordingly, the way an athletic department deploys its resources

can influence its overall success for the year in the form of Directors' Cup standings (Beaudin, 2018; Jones, 2013; Lawrence et al., 2007, 2012; Won, 2004).

The benefit of winning the Cup includes national prestige and recognition, in addition to a crystal trophy, plaques, and postgraduate scholarships. The winning institution is acknowledged for having broad success throughout the entire athletic program, is considered a benchmark for athletic achievement, and is often associated with a culture of athletic excellence (Lawrence et al., 2012). At the Division I level, the University of North Carolina won the first Directors' Cup in 1993-94. Stanford University has won the cup a record 26 times, including 25 consecutive seasons from 1994-95 to 2020-21. In Division II Grand Valley State has won the most awards with 17, while Williams College has had the most Division III success, winning 22 out of 28 possible times.

There has been prior research utilizing the Directors' Cup standings as a proxy measure of success relative to athletic departments' expenditures, with the general results indicating that the more money reserved for athletic expenditures, the more success that program would have in competition (Jones, 2013; Won, 2004). Prior research has also indicated that when both men's and women's sports are equally successful, the institution will do well in the Directors' Cup (Steinbach, 2006). Regarding women's sports in particular, research has indicated that for every $1 million increase in women's athletic expenditures, a university would achieve 8.7 more Directors' Cup points than if that money was spent on men's teams (Beaudin, 2018). That finding represents a significant impact of points considering that women's point totals sometimes exceeded the Directors' Cup point totals of entire institutions (NACDA, 2025). Therefore, an understanding of what factors have the most direct relationship to Directors' Cup points relative to the resource allocation by athletic departments on women's sports can impact the overall success and national prestige of these departments. Accordingly, the following hypotheses were proposed:

H1: There will be a positive significant relationship among head coaching salaries for female sports and NACDA Directors' Cup standings.

H2: There will be a positive significant relationship among athletically related student aid for female athletes and NACDA Directors' Cup standings.

H3: There will be a positive significant relationship among recruiting expenses for women's teams and NACDA Directors' Cup standings.

H4: NACDA Directors' Cup standings for each sport will be significantly predicted by the three independent variables under investigation (head coaching salaries for female sports, athletically related student aid for females, and recruiting expenses for women's teams).

Critical Feminist Theory

Critical Feminist Theory was used as the lens from which to make meaning within this work. Critical theory focuses on how social belief systems and relationships are formed in power and privilege (Fiske, 1993). Scholars who have utilized critical theory (e.g., critical race theory) to investigate athletic organizations examine

whether these organizations privilege some groups over others based on asymmetrical power relationships that reflect broader political, cultural, and economic factors within society (Alvesson & Willmott, 2003; Hylton, 2018). One such example is gender, the social meanings attached to a specific sex, which works to influence the perceptions, expectations, and evaluations of women and men, along with the roles, opportunities, and material circumstances of women's and men's lives (Wood, 2008). Examinations of gender roles and inequities within society often occur through the lens of critical feminist theory (CFT; Tsakmakis et al., 2023). CFT assumes that women are routinely devalued and marginalized. CFT also assumes women have less resources and social capital (Birrell, 2000; Hoeber, 2007).

The lens of CFT has been underutilized in sport-related research, particularly within intercollegiate athletics, a context where unequal distribution of resources occurs frequently on a global scale (Burt, 2021). These unequal distributions are born from a culture of physical competition where males have historically dominated in both participation and power (Coakley, 2020). After Title IX, resistance to sport equality still existed, so much that women required the AIAW. Undoubtedly, assimilating into a male-dominated college sport culture revealed inequity. Hoeber (2007) examined the ways gender inequity is embedded in the culture of sport organizations, arguing that gender-based relationships are used to establish organizational reasoning and common-sense beliefs, known as truth rules. Truth rules are the unspoken practices that are present in an organization or company that are accepted as true (Fletcher, 1991).

The goal of critical feminist inquiry is to disrupt the status quo and traditional power structures (Taskmakis et al., 2023). It achieves this by "critiquing taken for granted assumptions and establishing conditions whereby individuals can draw upon alternative vocabularies to produce new meanings and practices [within an organization] …" (Hoeber, 2007, p. 261). The belief that women's sports contribute less value than men's sports (Beaudin, 2018; Burt, 2021; Fletcher, 1991; Hoeber, 2007; Lawrence et al., 2009; Staurowsky et al., 2022) is the type of assumption that the current study aims to investigate, which is why CFT was adopted.

Method

This study employed a descriptive analytical historical design (Sterling et al., 2017) to collect archived data related to female intercollegiate athletic resources and NACDA Directors' Cup Standings. All variables in the current study were from a representative sample of NCAA Division I public institutions (two Power Four conferences and two Group of Five conferences) collected between 2010 and 2023 (see Table 1). Delineating between Power and Group institutions allowed for representative evaluation of all Division I programs while noting the differences among Power and Group institutions. Evaluating Power and Group institutions differently is logical considering that Power conferences have considerably more resources and legislative autonomy than institutions from the Group of Five (Portnoy, 2025).

Table 1
Years of Analysis and Number of Teams per Year

Year	Conference	Number of Schools	Number of Sports
2010	Power Four	24	139
	Group of Five	20	106
2011	Power Four	24	138
	Group of Five	20	106
2012	Power Four	24	138
	Group of Five	19	101
2013	Power Four	24	139
	Group of Five	21	112
2014	Power Four	24	140
	Group of Five	20	105
2015	Power Four	24	140
	Group of Five	20	106
2016	Power Four	24	140
	Group of Five	20	106
2017	Power Four	24	140
	Group of Five	21	111
2018	Power Four	24	140
	Group of Five	21	112
2020	Power Four	24	140
	Group of Five	21	111
2021	Power Four	24	140
	Group of Five	21	112
2022	Power Four	24	140
	Group of Five	21	113

The academic year of 2019-2020 (fall sports in 2019, spring sports in 2020) were not included in the data collection because the NACDA Cup standings were not calculated due to the COVID-19 pandemic. The starting year of 2010 was selected to ensure there was over a decade of data while accounting for the removal of 2019-2020 year. The year 2023 is the most recent year that includes data from all variables. Only sports that utilize a regular season conference schedule were included in this study.

Using critical feminist theory as the theoretical lens from which athletic resource allocation was viewed allowed framing of perspectives relevant to women's historically under-resourced experiences. Though this lens, discovery of new strategies to more effectively allocate resources for female athletes are offered. In turn, this discovery could lead to more athletic success, and ultimately more Directors' Cup points.

Procedure

Women's intercollegiate recruiting expenses, athletically related student aid, and head coaching salaries were extracted from the Equity in Athletics Disclosure Act (EADA) Cutting Tool. These variables were selected because they are the areas of athletic expenditures that continue to have the largest gap between men's and women's programs (Kaplan & Fink, 2021), and directly contribute to athletic outcomes. The EADA (2026) defined recruiting expenses as "all expenses an institution incurs attributable to recruiting activities… include[ing] expenses for lodging, meals, and transportation for both recruits and personnel engaged in recruiting" (p. 1); head coaching salary as "all wages and bonuses the institution pays a coach as compensation attributable to coaching" (n.p.); and athletically related student aid as "any scholarship, grant, or other form of financial assistance offered by an institution, the terms of which require the recipient to participate in a program of intercollegiate athletics at the institution" (n.p.). The data were collected for all women's sports teams that had regular season head-to-head conference matchups (i.e., basketball, gymnastics, lacrosse, soccer, softball, tennis, volleyball, and water polo). Public institutions were used for this analysis because they receive federal funding and must complete an annual EADA report whereas some private schools do not receive federal funds.

Data were also extracted from the NACDA Directors' Cup standings. This data can be found in the previous Directors' Cup standings archives (NACDA, 2024). The female contribution to the institution's overall Directors' Cup score was calculated by manually combining all the points earned by women's sports teams that had regular season head-to-head conference matchups from an institution. This number resulted in the female contribution to an institution's Directors' Cup score.

Data Analysis

Data were collected and stored in an electronic Microsoft Excel database and was analyzed using the Statistical Package for the Social Sciences software. Frequencies and measures of central tendency were calculated to describe the context of athletic/academic success. To provide meaningful and realistic differences in potential funding levels, Directors' Cup analyses were based on $10,000 increases in each variable and adjusted subsequently. Changes in $10,000 increments provided a sensitive enough threshold to detect how manageable funding changes could impact each variable and allowed for a multiple of 10 to compare larger funding perspectives. Hypotheses one through three were tested using Pearson and Point-Biserial Correlations. Hypothesis four was tested using binary logistical regression to determine the degree to which each variable aided in the probability of earning NACDA Directors' Cup points. All assumptions were met for statistical analyses.

Results

Within the sample (n = 2,980 individual institutions by sport and year), the variable that contributed most to spending was female athletically related student aid (M = $4,513,468.67). The next second highest area of spending in the sample

collected was female recruiting expenses (M = $331,698.43). Last was the head coaching salaries for female sports (M = $173,716.53). For Directors' Cup points, Power conferences (M = 34.84) demonstrated nearly five times the number of Directors' Cup contributions as Group of Five conferences (M = 6.27; see Table 2).

Table 2
Descriptive Information for Variables Under Investigation

	Power Four Conferences	Group of Five Conferences	Total
Conference	N=1679	N=1301	2980
Female Recruiting Expenses (total dollars)	M = $450,059.41 SD = $204,581.69	M = $178,948.17 SD = $95,129.84	M = $331,698.43 SD = $213.565.20
Head Coaching Salaries (total dollars)	M = $218,603.91 SD =$76,952.90	M = $115,787.30 SD = $58,863.14	M = $173,716.53 SD = $86,306.27
Athletically Related Student Aid (total dollars)	M = $5,275,487.85 SD = $1,446,925.42	M = $3,530,048.08 SD = $1,330,965.23	M = $4,513,468.67 SD = $1,643,762.73
Directors' Cup Points Contributed	M = 34.84 SD = 33.67	M = 6.27 SD = 16.24	M = 22.37 SD = 30.90

Table 3 provides the correlation coefficients for the variables under investigation. H1 was confirmed, indicating a positive significant relationship among head coaching salaries for female sports and NACDA Directors' Cup standings (r = .386). H2 was confirmed as well, revealing a positive significant relationship among athletically related student aid for female athletes and NACDA Directors' Cup standings (r = .350). H3 was also confirmed, showing a positive significant relationship among recruiting expenses for women's teams and NACDA Directors' Cup standings (r = .385). The strongest relationship occurred among head coaching salaries for female sports and female recruiting expenses (r = .677).

Table 3
Pearson and Point Biserial Correlations (and Significance Levels) for Variables Under Investigation

	Sport	Conference (1=Power, 2=Non-Power)	Female Recruiting Expenses (total dollars)	Head Coaching Salaries (total dollars)	Athletically Related Student Aid (total dollars)	Directors' Cup Points Contributed
Sport	1.00					
Conference (1=Power, 2=NonPower)	-.002 (.898)	1.00				
Female Recruiting Expenses (total dollars)	.005 (.769)	-.630 (<.01**)	1.00			
Head Coaching Salaries (total dollars)	.012 (.497)	-.591 (<.01**)	.677 (<.01**)	1.00		
Athletically Related Student Aid (total dollars)	.060 (<.01**)	-.527 (<.01**)	.476 (<.01**)	.578 (<.01**)	1.00	
Directors' Cup Points Contributed	-.059 (<.01**)	-.459 (<.01**)	.385 (<.01**)	.386 (<.01**)	.350 (<.01**)	1.00

Note: *p<.05, **p<.001

Initial results of the binary logistic regression revealed that water polo did not contain enough entries (i.e., there were not enough teams) for a valid model. Thus, water polo was removed from the analysis. The final model with results by sport is displayed in Table 4. All regression models were significant (Basketball [x^2 = 141.2, $p < .01$]; Gymnastics [$x^2 = 151.5$, $p < .01$]; Soccer [$x^2 = 89.4$, $p<.01$]; Softball [x^2 =247.2, $p < .01$]; Tennis [$x^2 = 171.0$, $p < .01$]; Volleyball [$x^2 = 109.5$, $p < .01$]; Lacrosse [$x^2 = 37.1$, $p < .01$]). The most predictive sport for earning Directors' Cup points was gymnastics (Nagelkerke $R^2 = .608$) followed by softball (Nagelkerke $R^2 = .553$), lacrosse (Nagelkerke $R^2 = .417$), tennis (Nagelkerke $R^2 = .403$), basketball (Nagelkerke $R^2 = .323$), volleyball (Nagelkerke $R^2 = .262$), and soccer (Nagelkerke $R^2 = .216$). Although each model was significant, the three financial variables within each model were not consistently significant across each sport. Gymnastics was the only sport where all three financial variables were significant. Thus, H4 was rejected.

Table 4
Binary Regression Results for Women's Sports

	β	S.E.	Wald	df	Sig.	Exp (β)	95% C.I. for EXP (β)	
							Lower	Upper
Basketball								
Conference	-.09	.33	.08	1	.773	.91	.48	1.73
Recruiting Expenses	.01	.01	2.50	1	.114	1.1	1.00	1.03
Head Coach Salary	.13	.02	37.27	1	<.001**	.14	1.09	1.19
Student Aid	.00	.00	.03	1	.868	1.00	1.00	1.00
Gymnastics								
Conference	2.45	.85	8.22	1	.004**	11.60	2.17	61.93
Recruiting Expenses	.04	.02	5.36	1	.021*	1.05	1.01	1.09
Head Coach Salary	.15	.07	4.63	1	.031*	1.16	1.01	1.32
Student Aid	-.01	.00	6.85	1	.009**	.99	.99	1.00
Soccer								
Conference	.70	.30	5.61	1	.018*	2.02	1.13	3.62
Recruiting Expenses	.01	.01	1.41	1	.235	1.01	.99	1.03
Head Coach Salary	.04	.02	4.93	1	.026*	1.04	1.00	1.08
Student Aid	.00	.00	4.10	1	.043*	1.00	1.00	1.00
Softball								
Conference	2.29	.39	34.22	1	<.001**	9.89	4.59	21.30
Recruiting Expenses	.01	.01	.76	1	.382	1.01	.98	1.04
Head Coach Salary	.04	.02	3.35	1	.067	1.05	1.00	1.10

Student Aid	.00	.00	2.05	1	.152	1.00	1.00	1.00
Tennis								
Conference	1.54	.32	22.85	1	<.001**	4.67	2.48	8.78
Recruiting Expenses	.02	.01	3.58	1	.058	1.02	1.00	1.04
Head Coach Salary	.02	.02	1.61	1	.204	1.02	.99	1.06
Student Aid	.00	.00	11.81	1	<.001**	1.00	1.00	1.01
Volleyball								
Conference	1.69	.33	26.65	1	<.001**	5.45	2.86	10.37
Recruiting Expenses	.01	.01	.47	1	.492	1.01	.99	1.02
Head Coach Salary	.00	.02	.01	1	.909	1.00	.97	1.04
Student Aid	.00	.00	2.66	1	.103	1.00	1.00	1.00
Lacrosse								
Conference	.52	.69	.58	1	.445	1.69	.44	6.48
Recruiting Expenses	.05	.03	3.79	1	.052	1.06	1.00	1.11
Head Coach Salary	.16	.05	10.36	1	.001**	1.17	1.07	1.30
Student Aid	-.01	.00	4.53	1	.033*	.99	.99	1.00

*p<.05, **p<.001

Discussion

To date, there have not been studies focused exclusively on female athletic expenditures relative to specific on-field success of specific sports. To help fill this knowledge gap, the current study yielded results that could lead to more effective utilization of athletic department resources dedicated to female sports through the analysis of three categories of financial resources. The findings are best understood through an analysis of descriptive, correlational, and predictive results.

Descriptive information generally supported existing research. The highest female expenditure was athletically-related student aid (M = $4,513,468.67). While this was the highest area of spending relative to the other variables, and is consistent across institutions, it illustrates the commitment to provide athletic scholarships at the largest institutions is a primary budget consideration. It is, however, important to note the stark differences in spending at Power Four institutions versus spending at Group of Five institutions. For example, Louisiana State University (M= $5,697,026.67), on average, spends more than twice the amount on female student aid as Bowling Green State University (M = $2,424,525.58). This trend is consistent when comparing power schools to group schools.

One primary reason for the large gap of athletic expenditures is due to the differences in conference allocations. For example, Southeastern Conference institutions receive approximately $32.7 million while Group of Five institutions averaged $2 million per institution (Walker & Misawa, 2018). Walker and Misawa (2018) highlighted the large gap between financial profiles of Power Four and Group of Five institutions that disrupt competitive balance. Moreover, aligning with CFT, it is important to note that previous research suggests male athletes receive approximately $252 million more in athletically related student aid than females annually (Staurowsky, 2022). This supports CFT's main assertion that women are devalued within the broader lens of society (Hoeber, 2007). When considering the disproportionately low amount of student aid for females, especially at the Group of Five levels, it is easy to understand how athletic outcomes are impacted. These findings support critical feminist theory by exposing the ongoing resource advantage that male sports have had since the creation of intercollegiate athletes while highlighting the current under-resourcing of women college athletes.

The second highest mean was for recruiting budgets. The results of the current study suggest there has been an increase in female recruiting budgets since the work of Staurowsky (2022), who showed the 2019-2020 mean recruiting budgets of $75,290. Moreover, current results show that average recruiting expenses for females was $331,698, which is considerably less than the $4.5 million average spent on student aid. It is important to note, however, that the vast increase in recruiting budgets may be the result of the pandemic occurring during the time in which the data for the Staurowsky (2022) study were collected. Furthermore, it is noteworthy that recruiting budgets for Power conferences (M = $450,059) were more than dou-

ble those of Group conferences (M = $178,948), further reinforcing the vast differences in conference resources.

The lowest female athletic expenditure examined was head coaching salaries (M = $173,716.53). Despite this being the lowest expenditure, there was nearly twice the budget for the Power Four head coaching salaries (M = $218,603) than the Group of Five head coaching salaries (M = $115,787). Again, this finding is supported by previous research that examined large gaps in conference financial profiles (Walker & Misawa, 2018). Previous research has also suggested that while head coaching salaries for women's teams are on the rise, there is still a significant earning gap (Gentry & Alexander, 2012; Traugutt et al., 2018). Work from Traugutt and co-authors (2018) revealed the median head coach's salary of men's basketball programs was $2.7 million while the median head coach's salary of women's programs was only $690,000. Staurowsky (2022) confirmed evidence that across all NCAA Division I FBS institutions, coaches of women's teams receive only 19% of the $1 billion that is spent on head coaching salaries. The highest paid coaches in women's basketball, who happen to all coach in Power conferences, raise the average mean. Without women's basketball salaries in Power conferences, the overall women's coaching salaries would be far less than identified in these results further reinforcing the lack of resources devoted to women's sports. As with athletically-related student aid, the unequal distribution of resources between men's and women's sports reflects the traditional paradigm within physical competition (Burt, 2021). Through the lens of CFT it is clear that despite efforts to remedy the situation women's intercollegiate athletics remain under-resourced.

Relationship to Directors' Cup Points

When investigating the relationships among variables, nearly all combinations of variables were significant. Specific to H1, the significant positive relationship (r = .386) between head coaching salaries and Directors' Cup points confirms the hypothesis. This finding is not surprising considering the common assumption that higher paid coaches are better coaches, and that quality of coaching leads to increased salaries and higher winning percentages (Mixon et al., 2013). Thus, it is a positive sign that when coaches are paid larger sums, it relates to on-field success, even if female coaching salaries still lag behind men (U.S. Department of Education, 2023). Interpreting this specific relationship, however, should be approached with caution as coaching salaries can sometimes be retroactive to winning, implying that winning and high salaries are not necessarily occurring at the same time. Nonetheless, there is a strong relationship between the two variables that cannot be ignored. This notion is especially relevant when utilizing the CFT framework because, regardless of the gender of the coach, paying them more can result in athletic success.

H2 was also confirmed. Student aid was found to have a significant positive relationship with Directors' Cup points. Similar to coaching salaries, it was reasonable to assume the more money spent on student aid would produce more on-field success given the ability to attract skilled athletes with scholarship funds. This finding supports previous research that athletic departments with high student aid had

higher Directors' Cup totals (Won, 2004). In addition to Directors' Cup points, student aid has also been found to be positively related to student-athlete academic performance (Milton et al., 2012). Milton and co-authors (2012) found that scholarship student-athletes had significantly higher GPAs than non-scholarship athletes. Hardwick-Day (2008) also concluded athletic scholarships offered to females are more beneficial to an institution's academic profile. Thus, increasing the amount spent on student aid may lead to athletic departments succeeding on the field and in the classroom.

While the findings of the current study indicate a positive significant relationship between athletically related student aid and Directors' Cup points, it is important to note that female athletes are still underserved regarding athletically related student aid compared to their male counterparts (Staurowsky, 2022) supporting the primary assumption of CFT (Birrell, 2020; Hoeber, 2007). Athletic departments would have needed to award $750 million more in athletic scholarships to female athletes during the 2019-2020 academic year to be proportional to the women's undergraduate enrollment (Staurowsky, 2022). Despite these gender differences, athletic directors are aware of the importance of athletic aid and encourage donors to help their cause (Virginia Sports, 2025). As one prominent athletic director whose athletic program recently finished fifth in Directors' Cup standings wrote, "your investments fuel the success of our programs, empowering student-athletes to achieve greatness, in their sport and beyond" (Virginia Sports, 2025, para. 1).

H3, which predicted a positive significant relationship between female recruiting expenses Directors' Cup points, was also confirmed. This finding is certainly in line with an investment philosophy that securing high-level athletic talent can yield positive results (Jewell 2020). It is reasonable that as athletic directors invest in their coaches and recruiting efforts, their likelihood of on-field success increases, especially if they are investing more than other institutions in their conference (Frank, 2004). Previous research supports this finding and emphasizes that the acquisition of high-quality human capital is critical to success (Harris et al., 2025). More specifically, Lawrence et al. (2012) and Beaudin's (2018) findings suggest increased spending on women's programs is correlated with increased Directors' Cup standings, while there is no evidence that spending on men's sports is related to more points. Although previous research suggested department wide spending on women's programs results in a greater number of Directors' Cup points, during the 2019-2020 academic year, only 30% of the total amount spent nationwide on recruiting was spent on female athletic programs (Staurowsky, 2022). The relational findings from the first three hypotheses in this study, in combination with the individual sport predictions, can now inform athletic directors of the areas in which spending can most effectively be directed.

Beyond the three hypotheses, there were a few other noteworthy relationships. The strongest correlation occurred between head coaching salaries for female sports and female recruiting expenses (r = .677). This finding suggests programs that can spend money on their head coaching salaries also have the resource profile to pay for recruiting expenditures. This relationship may also suggest that spending money

on recruiting could lead to better coaching outcomes, and ultimately higher coaching salaries. Another strong correlation was found among recruiting expenses and conference (r = -.630). The strong correlation is supported by research confirming vast differences in financial profiles of Group of Five and Power Four conferences that reinforce an existing "arms race" in college athletics. For example, Walker and Misawa (2018) identified the smallest Power Five budget belonged to the PAC-12 at $82.8 million, while the largest Group of Five budget was the American Athletic Conference's $49.20 million. Not surprisingly, schools that belong to a Power conference have more resources to spend on aid, coaching, and recruiting. Despite these Power conference advantages, it is important to remember that both Power Four and Group of Five institutions are still underserving their female athletes (Gaynor, 2011; Staurowsky, 2022). This underlying reality aligns with the critical feminist theory assumption that society is structured with inequitable relationships of power whereby women are routinely devalued and marginalized despite their potential to bring their athletic department increased prestige through athletic achievement in the form of Directors' Cup points (Birrell, 2000; Hoeber, 2007).

Individual Sport Predictions

This is the first study to investigate the predictive ability of resource allocations to team success relative to specific sports. For basketball, head coaching salary was the only significant predictor of Directors' Cup points. Every $10,000 increase in head coaching salaries for female sports increased the odds of earning Directors' Cup points by 14%. Subsequently, an increase of $50,000 in head coaching salaries improved the odds of earning Directors' Cup points by 92%. Ironically, coaching salaries are not predicted most by coach experience or their on-court performance, but by size of basketball program revenue (Brewer et al., 2015). Given that Power Four schools have considerably more resources to help generate revenue (Walker & Misawa, 2018), it is not surprising Power schools can invest more in basketball programs that generate revenue.

While the current study shows how notable an increase in women's basketball head coaching salaries is for Directors' Cup points, women's coaches earn only about half of men's basketball coaching salaries (Humphreys, 2000). It appears an investment in women's basketball head coaches has the potential to impact Directors' Cup points more so than men's coaching salaries given the large gap that exists. Ironically, no other variables were significant in increasing the predictable odds of Directors' Cup points for basketball. Similar to the relationship results, however, predictive results should be interpreted with caution because coach salaries can be a reward after already having success, rather than producing success after increasing salaries. Additionally, the pay gap between men's and women's basketball salaries has improved, however, women coaches' compensation continues to lag far behind men's coaches at comparable levels (Graham, 2023), further reinforcing critical feminist theory specific to the sport of basketball.

Gymnastics appears to be the most influential sport for earning Directors' Cup points. Unlike basketball, where only head coach salaries were predictive, all vari-

ables significantly aided in predicting Directors' Cup points. The most significant predictive variable was conference ($p = .004$). The results of the current study suggest that athletic directors of Power Four schools who want to improve Directors' Cup points should invest in their women's gymnastics programs. Power Four gymnastics programs increase the odds of earning Directors' Cup points by 1060% compared to Group of Five schools. For recruiting, a $10,000 increase in recruiting expenses for women's gymnastics, increases the odds of earning Directors' Cup Points by 5%. A $50,000 increase in recruiting expenses would increase the odds of earning Directors' Cup points by 22%. A $50,000 increase in head coaching salaries for women's gymnastics would result in a 112% increase in the program's odds of earning Directors' Cup points. For athletically related student aid, a $50,000 increase would result in a 5% increase in the odds that gymnastics will earn Directors' Cup points.

These gymnastics numbers are not surprising given that coaching pay and team performance are positively correlated (Colbert & Eckard, 2015), and the strong relationships that exist between variables seen in Table 3. What is somewhat surprising is that gymnastics was more predictive of cup points than any other sport. This finding could be due to the commitment necessary to have competitive gymnastics programs often found at larger institutions that can afford equipment, training space, and recruitment of a relatively small number of elite gymnasts. Thus, it may be most beneficial for athletic departments that wish to increase Directors' Cup points to invest in this uniquely influential sport. It is important to note, however, there are only 62 current DI women's gymnastics programs. Therefore, if more schools were to create/invest/sponsor women's gymnastics, investment may eventually lead to diminished returns. For the time being, however, gymnastics appears to be a sound investment.

For soccer, the results indicated that head coaching salary and student aid, as well as the team's conference, were significant. Similar to gymnastics, soccer programs that were part of a Power Four conference increased their odds of earning Directors' Cup points by 102%. Additionally, a $50,000 increase in a head coach's salary would increase the odds of Directors' Cup points by 22%. While student aid was found to be significant, an increase was minimal in predictive ability, indicating less focus should be spent on aid compared to coach salary. Investing in women's soccer programs, however, may be counterintuitive to some veteran athletic directors because some women's soccer programs were added to allow athletic departments to be compliant with Title IX (Mehrhoff, 2001). If women's soccer programs are viewed as a way to be in compliance, rather than a viable sport capable of national success, a systemic problem exists as suggested by critical feminist theory. The results from this study confirm that women's soccer is indeed a contributing factor to Directors' Cup standings, particularly for Power Four institutions that invest in their head coach.

Conference affiliation was the only significant variable that led to an increased chance of earning Directors' Cup points for softball. As the data continues to reinforce, programs in Power Four conferences are the most nationally successful programs. In fact, the odds of earning Directors' Cup points increases by 889% for softball programs in Power conferences. This finding further confirms the vast dif-

ferences in financial resource profiles between Power Four and Group of Five institutions (Harris et al., 2025; Walker & Misawa, 2018). It is somewhat curious that financial variables were not significant predictors of Cup points for softball given its growing popularity for televised games. Last year, the Women's College World Series was the most watched ever with 2.2 million viewers and year over year growth of 2% (Callahan, 2025). Additionally, the nature of softball as a largely warm-weather sport restricts the number of elite athletes, most of whom end up at Power schools (Garcia, 2022). One out of five softball student athletes who compete at the Division I level originate from California (Garcia, 2022). Moreover, successful programs have invested in large softball stadiums and training facilities that are clearly dissimilar between Power and Group of Five institutions (Bardahl & Mandel, 2024).

For both tennis and volleyball, the only significant variable that contributed to an increase in the odds of earning Directors' Cup points was conference. Increasing Directors' Cup points was 367% more likely for tennis programs and 445% more likely for volleyball programs residing in a Power Four conference. These results further confirm the level of dominance exhibited by Power schools relative to Group schools. The findings also seem to highlight a large talent disparity in sports where participation numbers are dramatically lower in scholastic sport participation. In other words, if less females are playing sports at lower levels, there are fewer elite players to recruit, and those players ultimately find themselves at the largest and most resourced programs in the Power Four conferences. For example, of the sports examined in the current study, during the 2023-2024 academic year, tennis and lacrosse had the lowest national scholastic participation rates at 195,766 and 101,204 participants respectively (NFHS, 2025). This system is different from males, who have 1.2 million more athletes playing at lower levels and can populate Group of Five rosters with talent closer to elite status (NFHS, 2025). Ultimately, the accumulation of elite talent at Power schools rather than Group schools reinforces the arms race mentality where the "haves" and "have nots" are identifiable (Wolohan, 2015).

Similar to basketball, gymnastics, and soccer, head coaching salaries of women's lacrosse was a significant predictor of Directors' Cup points. For every $10,000 increase in a head coach's salary, the odds of earning Directors' Cup points increased by 17%. Furthermore, a $50,000 increase in a head coach's salary would result in a 123% increase in the odds of a lacrosse team earning Directors' Cup points. While previous research outlines the importance of coaching performance (Johnson et al., 2013, 2015, 2017; Pierce et al., 2017), the current study highlights the impact of investing in head coaching salaries of female teams, or that salaries are a result of performance. It is also noteworthy that lacrosse is an Olympic sport that does not receive the national notoriety often found in more commercialized sports like basketball, softball, and volleyball. Thus, head coaching salaries are typically lower for lacrosse coaches compared to the other sports. Increasing lacrosse head coach salaries may be a more cost-effective decision compared to larger investments if an increase in Directors' Cup points is the goal.

Overall, the current study aligns with previous research that outlines the vast differences between schools competing at the Power Four and Group of Five lev-

els. Notably, the largest athletic department budget at a Group of Five school was $33.6 million less than the smallest athletic budget at a Power Four school (Walker & Misawa, 2018). This point is further enforced by the large standard deviations present in the current study, especially for head coaching salaries (SD = $86,306.27). The conference also plays an important role as the gap for average coaching salaries grows between Power and Non-Power programs (Hirko et al., 2025). Moreover, these results suggest that if the resource gap widens due to ongoing NIL collectives, transfer portal decisions, or direct payments from the recent House vs. NCAA decision (Mandel & Williams, 2025), the likelihood of underdog stories from small school success decreases.

Limitations & Future Recommendations

While this study promoted further understanding of the relationship between athletic expenditures and on-field success of Division I public institutions, there are limitations. First, the data were collected from two representative Power conferences and two Group conferences. Although there were 2,980 data points, which is statistically representative of the population, the data did not include all Division I public institutions. It is recommended that any comprehensive replication or extension of the current study consider data from additional Division I public institutions like the method used in the Jones (2013) and Beaudin (2018) studies. Furthermore, additional examination based on other relevant groupings of variables (e.g., NCAA subdivisions) could yield different results.

Second, the variables examined in this study are limited when considering the possible number of variables that could contribute to athletic success and Directors' Cup points. There may be other athletic expenditures (e.g., assistant coach salaries, infrastructure investments) that could have a positive relationship with on-field success. Future research could consider both broad and narrow approaches to define athletic expenditure variables beyond the three primary sources examined here.

Conclusion

The results from this study can be utilized by administrators shaping their athletic budgets to increase their department's odds of earning Directors' Cup points. With increased Directors' Cup points come increased notoriety and prestige because of athletic success. The current landscape of college athletics, however, is changing rapidly. The final approval of the House v. NCAA settlement, which allows schools to directly pay student-athletes, has the potential to cause significant financial decisions for many athletic departments (Mandel & Williams, 2025). Effective resource allocation will certainly be in an athletic director's best interest. With NCAA programs now able to spend up to $20.5 million dollars on direct NIL payments for the 2025-2026 academic year, many smaller Group of Five programs may struggle more than before. Schools in the Group of Five will face challenges that Power Four conferences are better suited to navigate (Helwick, 2025). This study provides athletic departments with information to better allocate their resources specifically towards individual sports, and in turn increase their odds of earning benefits that come with athletic success and Directors' Cup points.

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Transfer Networks and Talent Flow in the Football Bowl Subdivision Transfer Portal

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This study applied social network analyses to athlete transfers in the Football Bowl Subdivision (FBS) transfer portal from 2019-2024. Utilizing a series of graphs, indicators, and descriptive statistics, the portal's structure and the flow of transfers through conferences and teams were analyzed through a network of effective transfers (i.e., players who made at least one appearance before and after transferring between FBS schools) and a subset of blue-chip transfers (i.e., effective transfers with 4- or 5-star 247 Sports ratings). Results showed autonomous conferences and teams have been central to the portal's inner workings, with many non-autonomous institutions remaining on the periphery. Nonetheless, the non-autonomous conferences and teams tended to experience net gains in transfer volume while the autonomous institutions suffered net losses. This trend reversed when incoming and outgoing transfers were quantified via their associated talent and experience levels, as the autonomous programs typically acquired more talented players.

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The increased commercialization of college sport in recent decades has given rise to lucrative revenue streams for programs operating at its highest levels. During the 2023-2024 fiscal year, the National Collegiate Athletic Association (NCAA) reported nearly $1.4 billion in revenues and a $166 million surplus (Berkowitz, 2025). For NCAA Division I football teams competing in the Football Bowl Subdivision (FBS), the highest level of college football, the financial benefits have become even more immense. Following a $7.8 billion deal with ESPN for the broadcast rights to the College Football Playoff (CFP) through the 2031-2032 season (Dinich, 2024), prominent NCAA conferences and their member schools were granted additional base revenues and incentivized bonuses for CFP participation. Programs in larger conferences, like the Big Ten and Southeastern Conference (SEC), now earn base amounts as high as $21 million a year (Dinich, 2024); furthermore, teams qualifying for the CFP can generate upwards of $6 million in additional revenues for each round of the CFP they advance to (College Football Playoff, 2025). As a result of the increased income, some of the FBS's largest programs, such as those at the University of Texas and Ohio State University, are now reporting annual football revenues as high as $162 million and $127.3 million, respectively (Hughes, 2024).

The links between competitive success and increased revenues in college sport are observable both through the industry's publicized revenue distribution practices and the research conducted by scholars showing how schools' various income streams, such as enrollment, ticket sales, and donations, can increase following periods of athletic success (Chung, 2017; Humphreys & Mondello, 2007; Stinson & Howard, 2008). Institutionally, this has incentivized the hiring of coaches who can field winning teams in a short period of time (Pifer & Huml, 2020). Historically, the primary means by which FBS coaches filled out competitive rosters was through the recruitment of high school graduates (Dumond et al., 2008; Maxcy, 2013; Pifer & Huml, 2020). High-quality recruits, whose skill levels are often quantified by ratings on specialized sites like Rivals and 247 Sports (Caro, 2012; Maxcy, 2013; Pifer et al., 2021), represent valuable commodities in the market for FBS-level talent. Prior studies have shown that recruiting plays a significant role in on-field success, indicating strong relationships between teams' recruiting rankings and their conference winning percentages (Caro, 2012; Maxcy, 2013). Transfer athletes, as an alternative source of talent, have been shown to provide value over traditional recruits (Pifer et al., 2021), but historical mechanisms imposed by the NCAA often hampered the immediate impact these athletes could have and the ease with which they could be procured (Cali, 2014; Carrier & Edelman, 2024; NCSA, 2025). However, in October 2018, the landscape shifted dramatically with the introduction of the transfer portal system (Hosick, 2018).

The NCAA established the transfer portal as a means of introducing more transparency and efficiency to the college-athlete transfer process (Hosick, 2018). Combined with subsequent legislation that provided athletes with greater freedom to change programs and—in the years that followed—the ability to receive direct financial benefits for their name, image, and likeness (NIL), the portal initiated a new era

of college-athlete autonomy and significantly altered the market for playing talent in intercollegiate athletics (Schrotenboer, 2024). From 2021 to 2023, NCAA Division I transfers increased by over 33%, reaching as many as 13,853 in 2023 (NCAA, 2025). Similarly, FBS institutions witnessed a 50% increase in transfers from 2021 to 2023 (NCAA, 2025), with more than 3,500 FBS players entering the portal across the 2023 to 2024 cycles (Schrotenboer, 2024). Amidst the sudden increase in athlete mobility, coaches, administrators, and media members were quick to brand the new-look system as the "wild, wild west" (Weaver, 2021). Prominent coaches both praised and questioned the portal, commending its ability to more quickly improve athletes' and teams' fortunes while simultaneously expressing concerns over increased roster turnover and the timing of its open periods (Corr et al., 2024; Dohrn & Lopez, 2022; Florez, 2025; Nakos, 2024; Schrotenboer, 2024; Stahl, 2024). The NCAA, itself, has insinuated that a "perpetual and unchecked" system resembling free agency in professional sports is disruptive to its typical operations (Schrotenboer, 2024, para. 6).

However, apart from press conference quotes, media-based articles, and the NCAA's self-published statistics, relatively little attention has been devoted to the portal's inner workings, transfer trends, and the quantifiable flow of talent between conferences and schools. If the assumption that transfer athletes provide teams with a more polished commodity holds true (Dohrn & Lopez, 2022; Pifer et al., 2021), and teams can improve through the addition of transfer portal athletes, then a clearer understanding of the talent flowing through the portal is warranted. To date, scholarly research conducted on the transfer portal has mainly focused on situational changes for college athletes following transfers (Dohrn & Lopez, 2022) or challenges in managing team culture amidst steady roster turnover (Corr et al., 2024). Therefore, to build upon these studies and lend clarity to the transfer portal's operations, this study addressed the following research questions:

RQ1: Which FBS conferences and teams have been more or less influential to the transfer portal during its early years of operation?

RQ2: Which FBS conferences and teams have typically experienced net gains or net losses in relation to the volume, experience level, and talent level of incoming and outgoing transfers during the transfer portal era?

In exploring these questions, 4,245 observations of transfer portal entrants in FBS football from 2019 to 2024 were collected, attached to quantifiable levels of playing talent (i.e., 247 Sports and Pro Football Focus ratings) and experience (i.e., snap counts), and then linked to the FBS schools and conferences they moved between. Utilizing social network analyses and descriptive statistics, the structure of the network and the flow of transfers between FBS conferences and teams were mapped out and quantified through various metrics. These quantifications measured the extent to which leagues and programs were involved in and central to the FBS transfer network and whether they typically experienced net gains or net losses in relation to the volume, talent level, and experience level of incoming and outgoing transfers. This approach also provided a snapshot of the internal structure of the

transfer portal during its formative years, visualizing the density of the network and identifying which conferences and teams were more or less likely to function as hubs (distributors) or authorities (receivers) within the portal. Practically, these findings lend clarity to a space in need of more objective and accurate information as the NCAA and its affiliates contemplate future transfer portal regulations (Florez, 2025). Academically, this study provides researchers looking to engage in more precise, theory-driven works with a comprehensive view of the system during its formative years.

Literature Review

Background Information and Industry Reports

In October 2018, the NCAA introduced the transfer portal as a "notification-of-transfer" mechanism that effectively allowed college athletes to alert new programs to their availability by entering their name in an electronic database (i.e., the portal) accessible by other NCAA institutions (Dohrn & Lopez, 2022; Pifer et al., 2021). According to the NCAA, the portal was intended, in part, to end "the controversial practice in which some coaches or administrators would prevent students from having contact with specific schools" (Hosick, 2018, para. 4). A series of rule changes spurred by legal challenges to the NCAA followed the portal's introduction, culminating most recently in an April 2024 ruling that permitted college athletes to transfer with immediate eligibility so long as specific academic requirements were being met (Russo, 2024). The windows during which college athletes can transfer are sport-specific, but—like many requirements surrounding transfers—they change frequently following court filings and closer scrutiny from stakeholders (Olson, 2024; Russo, 2024). For the 2024-2025 academic year, the windows for FBS football lasted from December 9 to December 28 and April 16 to April 25 (Olson, 2024). The portal also opens for 30 days to players whose head coaches have left for a different program and allows graduate students to enter during the academic year.

Functionally speaking, the transfer portal helps facilitate the movement of playing talent between different athletic programs. This provides teams with an additional pool of more established players to recruit from and gives players more power in choosing where they want to play (Dohrn & Lopez, 2022; Pifer et al., 2021). Prior studies on other NCAA revenue sports have demonstrated the relatively higher productivity of transfer talent in comparison to high school recruits (Pifer et al., 2021), with these players often viewed as being more established and better-known commodities in relation to their freshman peers. Before the portal's advent, college athletes had to undergo more rigorous and potentially penalizing processes to change programs. Mobility was contractually limited, to an extent, by the National Letter of Intent, and hardship waivers were required in many cases to transfer without having to sit out a season (Carrier & Edelman, 2024; NCSA, 2025; Pifer et al., 2021). However, the recent changes lifting many of these restrictions have granted players more freedom to find a new program so long as they follow the proper timelines and notification procedures with their compliance office (Dohrn & Lopez, 2022).

These changes have led some in the industry to compare the modern market for college athletes with the "free agency" system in many professional sports leagues (Corr et al., 2024; Schrotenboer, 2024), and industry research conducted by the NCAA and affiliated groups seems to support the assertion that college-athlete mobility is rising. From 2021 to 2023, the NCAA documented a steady rise in portal entries among FBS football players, with estimates showing 2,273 athletes entered the portal in 2023 compared to 1,512 in 2021 (NCAA, 2025). On3, a media and technology company that provides news and analysis from high school and college sports, estimated that nearly 2,800 FBS players (approximately 25% of all FBS scholarship players) entered the portal during the 2023-24 academic year (Nakos, 2024). It was further claimed that 72 FBS teams lost at least 20 scholarship players to the portal in 2023-24, marking a vast increase from 2021-22 when just 25 programs lost that many. Significant increases were also witnessed in the number of FBS players making "lateral" transfers to programs in autonomous conferences (883 players to autonomous schools in 2023-24 versus 454 in 2022-23) and the number of players "transferring up" from non-autonomous to autonomous programs (239 in 2022-23 versus 123 in 2021-22).

These industry-level findings coincide with a number of NCAA administrators and coaches who have publicized their perceptions of the portal's impact via the media. According to former University of Alabama football coach Nick Saban, transfers are becoming heavily linked to the NIL money and financial benefits associated with them.

> Right now it's about money. There's a lot of things that just come down to money. Where players go to school comes down to money. So if you have a collective and you have money, you're going to have an opportunity to be successful. You're going to be able to retain the players on your team that you want to retain, almost like a pro team. And you're also going to be able to get free agents to come into your program, and you're also going to be able to recruit better high school players because you've got financial opportunities for them as well. (Stahl, 2024, para. 9).

Saban also believes relaxed transfer rules have created "more parity" between programs, particularly within autonomous conferences like the SEC, as players with "experience" and "proven quality" are freed to move to other programs (Stahl, 2024, para. 3). To this end, Saban has suggested the portal "helps some of the teams that weren't quite as good get better quickly so that they can compete with those top-level teams" (Stahl, 2024, para. 6); however, according to former Ole Miss coach Lane Kiffin, increased player mobility has led to greater roster instability and difficulties in developing team culture. "Unfortunately, now, it's like plug and play" (Corr et al., 2024, p. 4).

Prior academic literature has paid some attention to the transfer portal's effects on athletic outcomes and team culture. Dohrn and Lopez (2022) conducted a study under the human capital theory's assumption that transfer athletes' skills, knowledge, and expertise make them valuable commodities in the market for playing talent. Analyzing a sample of NCAA Division I quarterbacks, they found teams receiving

the transfers did not significantly improve their rankings or winning percentages, but the transfers generally moved to lower-ranked programs and significantly improved their individual performances and positions on the depth chart. Corr et al. (2024) interviewed several FBS coaches and found that, while the portal was viewed as a vital tool for achieving short-term success, building a squad composed mainly of transfers was problematic to the "cultivation of meaningful organizational culture" (p. 1). More specifically, aggregated interview results suggest coaches felt a need to prioritize the acquisition of transfer talent while considering the effects of the portal on roster construction. These effects included difficulties in garnering commitment and buy-in from the players and sustaining a consistent, winning culture. The interviewed coaches lamented how easy the portal made it for younger players to "quit" without "earning" their playing time (Corr et al., 2024, p. 8). There was also a consensus that the portal allowed programs to bring in talented players while at the same time facilitating the departure of squad members who would have traditionally worked hard while waiting for an opportunity. According to Kiffin:

> You're not going to have phenomenal culture. It doesn't mean I don't work on it, but I think I have to realize it just is what it is. These transfer kids, they're going to a place if it's the best at that time. It's not about the school and they're not in their third, fourth, fifth year with you to where they know how we do it. (Corr et al., 2024, pp. 3-4)

Sport Labor Market Research

Although direct, comprehensive analyses of player movement through the FBS transfer portal remain scarce, prior research—largely from the sports economics space—foreshadows the patterns and outcomes that could emerge in a market where athletes have been granted further agency and mobility. Simon Rottenberg (1956), in one of the seminal analyses of labor markets in professional sport, described how the reserve clause—a rule that bound players to their current teams at the expiry of a contract—did not appear to lead to an equal distribution of talent in Major League Baseball (MLB). He argued a free labor market would result in as efficient a distribution of talent as leagues governed by salary caps, revenue sharing, reserve clauses, or other restrictive mechanisms.

> It follows that players will be distributed among teams so that they are put to their most "productive" use; each will play for the team that is able to get the highest return from his services … this is exactly the result which would be yielded by a free market. (Rottenberg, 1956, p. 256)

The assertion that players, regardless of most labor market restrictions, will likely end up with the team that values them the most became associated with two fundamental economic concepts—the invariance principle and the Coase theorem (Coase, 1960; Rascher et al., 2021). Essentially, when transaction costs are minimal, the distribution of talent should hardly be affected by whether a player or team has more control over the player's rights. Although potential transaction costs persist via changes in academic progress and adjustments to new teammates, coaches, tactics, and team cultures (Corr et al., 2024; Dohrn & Lopez, 2022; Schrotenboer, 2024),

the formal frictions (e.g., sit-out rules, specific transfer barriers, and a lack of direct compensation) in the portal era are relatively low, especially with teams now able to provide direct NIL compensation to their players.

To this point, some of the previous literature implies the transfer portal could be dispersing human capital in a manner not too dissimilar to the prior system. Rottenberg (1956) noted, in the absence of free agency or a similar system, players would "distribute themselves among teams on other criteria" as teams "bid for players by offering other quantities than price" (p. 257). Prior to the transfer portal and NIL remunerations, the college-choice decisions of current and prospective athletes typically favored universities with strong facilities, quality academics, successful coaches, large media footprints, and recent or historical on-field success (Dumond et al., 2008; Mirabile & Witte, 2017; Nixon et al., 2021; Pitts & Evans, 2024). Therefore, to the extent these programs are the same ones offering substantial NIL payments and opportunities to win on a national stage in the portal era, one might expect the flow of talent or resulting outcomes to not look vastly different than what was observed in prior years.

In prior research, Pifer and colleagues (2021) looked at Division I men's basketball transfers and found that transfer outcomes in the pre-portal era mirrored those found by Dohrn and Lopez in the FBS portal era (2022); that is, revenue sport athletes more frequently transferred from higher-level to lower-level programs (as opposed to the reverse), and they experienced significant boosts in their individual usage and statistical performance (Dohrn & Lopez, 2022; Pifer et al., 2021). In further conducting a social network analysis of Division I men's basketball transfers, Pifer et al. (2021) also observed that transfers occurred more frequently during coaching changes and between schools in the same state. Pitts and Evans (2024), during a timeframe that coincided with the early stages of the transfer portal, showed that FBS programs' average NIL valuations were positively related to their 247 Sports recruiting points, even after controlling for school-level fixed effects. However, the amount of NIL funding necessary to improve the talent level was noted as being "cost-inhibitive for most programs" (p. 1), leading the authors to conclude the implementation of NIL was unlikely to dramatically alter the distribution of recruited talent in college football (i.e., from higher revenue to lower revenue programs). These findings echoed those of an earlier study by Huml et al. (2019), where—in offering a quantity other than price—it was found that FBS and Division I men's basketball teams constructing new athletic facilities experienced little to no change in their ability to recruit better players. Despite the advancement and completion of these projects, the status quo was largely maintained as the inflowing quality of talent remained relatively stable across teams in both leagues.

Other studies have highlighted the possibility for labor market asymmetries to emerge in contexts where player mobility and availability increase while teams' resources remain relatively unequal. Juravich and Mills (2017), for example, found recruited talent became more broadly distributed across NCAA Division I men's basketball teams following the introduction of the National Basketball Association's (NBA) one-and-done rule in 2005 that prohibited high school players from going

straight to the professional ranks. As a result of the expanded labor pool, a trickle-down effect was observed as top recruits who had previously gone directly to the NBA now attended college. In most cases, these recruits signed with top-level programs, allowing low- and mid-level programs to acquire recruits who would have previously played for top programs. It is also possible that certain asymmetries are the result of teams having preferred commodities in the FBS transfer market, as some programs—often those with fewer financial resources—intentionally recruit less reputable players of a specific profile or implement coaching schemes that allow them to achieve higher performance with lower-rated talent (Maxcy, 2013; Turcott & Pifer, 2018).

Player mobility in response to labor market changes has also been examined in leagues outside of college sport. For example, the 1995 Bosman ruling by the European Court of Justice abolished a "retain and transfer system" in European professional soccer that required transfer fees to be paid for out-of-contract players and limited the number of European Union players a team could field (Frick & Simmons, 2014). With those restrictions lifted and consumer demand for the product surging, player mobility and wages both increased in the post-Bosman era (Frick, 2009; Frick & Simmons, 2014). An increasing number of players from outside Western Europe migrated to the top leagues in England, Spain, Germany, France, and Italy to earn higher salaries (Frick, 2009). Milanovic (2005) suggested increased player mobility yielded a concentration of global playing talent among Europe's elite clubs, further entrenching modes of dominance that were already prevalent. Thus, the prior literature has highlighted patterns and trends that could similarly be observed in the flow of FBS transfers through a market now characterized by increased athlete mobility. With coaches claiming to have observed changes in roster construction and management following the portal's advent (Corr et al., 2024; Stahl, 2024), and economic literature noting shifts (e.g., talent compression, increased transfer volume, and inconsistent talent distribution across levels) that can occur when teams with differing resources gain access to more talent (Frick, 2009; Juravich & Mills, 2017; Milanovic, 2005), further examinations of talent flow through the FBS transfer portal remain justified.

Method

Data and Data Collection

Data for this study were collected from two primary sources—247 Sports and Pro Football Focus. First, records of transfer portal entries in FBS football were pulled from 247 Sports, a scouting and recruiting website with data that has been reliably used in prior studies (Huml et al., 2019; Pifer & Huml, 2020; Pifer et al., 2021; Pitts & Evans, 2024). In addition to the transfer players' names, these datasets contained their 247 composite recruiting ratings, playing positions, hometowns, transfer dates, and the names of the programs they transferred between. Initially, every FBS transfer portal entrant from 2019-24 recorded on the site was used to populate a dataset containing 10,968 portal entrants from FBS programs. However, due to the scope of the study, constraints in data availability (i.e., performance data and talent

measures outside of FBS football are largely unavailable), and methods that required identifiable pre- and post-transfer institutions, the sample was narrowed to only include entrants who transferred to fellow FBS programs and appeared in at least one game before and after transferring. This meant removing approximately 42% of the FBS entrants from the preliminary sample who were not linked to a post-transfer institution (i.e., they did not "resurface" after entering the portal) and an additional 20% of the initial FBS entrants who were identified as having transferred to non-FBS (e.g., Division I Football Championship Subdivision, Division II, or Division III) programs. Following these reductions, the final sample of "effective transfers" (i.e., players who transferred within the FBS and appeared in at least one game at both institutions) consisted of 4,245 observations.

Measures of Talent and Experience

The 247 Sports composite ratings served as initial measures of talent assigned to players by the site's experts at the final stage of their recruitment from high school. Numerous studies have relied on 247 ratings, or the ratings produced by similar systems, to quantify playing talent in college football (Caro, 2012; Huml et al., 2019; Maxcy, 2013; Pifer & Huml, 2020; Pifer et al., 2021). These ratings range from 0.7 to 1.0 and are often converted into "star ratings" for ease of interpretation; that is, players with composite ratings of 0.98 to 1.0 earn five stars, players with ratings from 0.9 to 0.97 earn four stars, players rated 0.8 to 0.89 earn three stars, and players rated 0.7 to 0.79 receive two stars (Adams, 2024). For football players, a five-star prospect is viewed as a future first-round pick in the NFL Draft, four-star prospects are expected to be drafted across the remaining slots or prioritized as undrafted free-agent signings, and three-star prospects are identified as players with strong potential to be significant contributors at the NCAA Division I level. Two-star prospects have limited potential to develop into professional athletes and are likely just role players at the Division I level (Adams, 2024). Players who are not rated or who have ratings below 0.7 typically receive the "unranked" label from 247; conversely, those who receive four- and five-star ratings are generally categorized as elite, "blue-chip" prospects. For the purpose of being included in the talent flow analyses across conferences and teams, any effective transfer in the sample not rated by 247 was assigned a rating of 0.6.

In addition to the 247 composite ratings, players' prior season grades from Pro Football Focus (PFF), a sports analytics company dedicated to comprehensive analyses of NFL and NCAA Division I football players, were attached to the FBS transfer records as additional, more current measures of talent. In instances where a player had grades from multiple seasons prior to transferring, the attached PFF grade was an average weighted by the snaps played in each season. As a company, PFF employs over 600 analysts, a subset of whom are trained to evaluate "every player on every play during a football game" (PFF, 2025, para. 2). The grades they produce at a seasonal level range from 0 (bad) to 100 (good) and allow players to be compared to others at their position (i.e., the grades do not distinguish between positional value). These grades help overcome the limitations of traditional football statistics that

are neither applicable across positions nor indicative of a player's individual talent. Snaps-per-game, as universal reflections of playing time across the different phases of play (offense, defense, and special teams), and total snaps played prior to transferring were also collected from PFF. This was done to quantify players' experience levels and capture the extent to which coaches had found enough utility in their performances to grant them playing time.

Social Network Analyses

Social network analysis, or structural analysis, is a method that examines the relationships (edges, ties, or connections) between members (nodes or vertices) of a network (Otte & Rousseau, 2002). The method identifies the ties that connect nodes and focuses on the characteristics of those ties. A tie between two nodes can formally be identified as an ordered pair (i,j) where node i is the initial node of the connection and node j is the final node. A network is labeled as being "directed" if connections between i and j (e.g., between FBS conferences or teams) have a defined direction (e.g., players moving from one node to another). Social network analysis has previously been used in a variety of settings, including college sports, where Pifer et al. (2021) constructed a social network analyzing NCAA Division I men's basketball transfers in the pre-portal era.

One of the primary outputs of a social network analysis is a graph that visualizes the nodes as circles and the ties as a series of lines called edges. These graphs can be presented in various forms, but the Fruchterman-Reingold format was utilized in this study. This format is frequently used to visualize network structure through an algorithm that places highly connected nodes more centrally and closer together and less connected nodes further toward the outside of the graph; essentially, it treats the network like a "spring" that pulls more connected nodes together and repulses less connected nodes apart (Hansen et al., 2020). A series of indicators can subsequently be calculated in relation to the graph to quantify the structure and cohesion of the network's ties and the roles being played by specific nodes. Using functions from the *igraph* package in R Statistical Software version 4.4.1 (Csárdi et al., 2025), this study produced Fruchterman-Reingold graphs for effective FBS transfers and calculated the following indicators:

- Degree (In-Degree, Out-Degree, and Total-Degree) Centrality: a count of the number of edges (transfers) flowing into (in-degree) and out of (out-degree) a node; the total-degree centrality for a given node is simply the sum of its in-degree and out-degree measures. These measures were synonymous with the transfer volumes of each conference and team.
- Assortativity Coefficient (r): a Pearson correlation coefficient ranging from -1 to 1 that is positive if nodes of a similar (total) degree tend to connect with one another and negative if they do not; values close to 0 suggest little to no relationship.
- Density (D): an indicator of the general level of connectedness in the network. It is the ratio of the number of observed edges in the network to the highest number of possible edges in the network. A higher density ratio

suggests the network is more cohesive and connected; note that the network of FBS teams does not include loops, whereas the conference network does include loops (i.e., nodes that connect to themselves via within-conference transfers), making this measure more relevant to the team-level networks.

- Eigenvector Centrality (x): measures the centrality of a node in proportion to the sum of the centralities of the other nodes to which it is connected. The metric ranges between 0 and 1, with higher values suggesting a node is more influential to the network based on its connections to other influential nodes.
- Authority Score: a generalization of eigenvector centrality in directed networks that is proportional to the sum of the hub scores of nodes that point to a node; it is normalized to range between 0 and 1, with higher values suggesting a conference or program is a more popular destination for arriving transfers (Kleinberg, 1999).
- Hub Score*:* a generalization of eigenvector centrality in directed networks that is proportional to the sum of the authority scores of nodes that a node points to; it is normalized to range between 0 and 1, with higher values suggesting a conference or program sees players transfer to more popular destinations (Kleinberg, 1999).
- PageRank (PR): a metric quantifying the relative prominence of a node based on the volume and quality of its incoming connections. It was originally developed by Google to rank web pages, but in this context, PageRank values reflect the probability (ranging from 0 to 1) that a node (school or conference) will be "visited" by a player randomly navigating the transfer network.
- Modularity (Q): a measure of network structure quantifying the divisible strength of a network into smaller modules or sub-networks (Ji et al., 2015); generally, values closer to 1 suggest stronger modular structures are present within the overall network, although values falling within the range of 0.3 to 0.7 are understood to signify the existence of meaningful sub-networks inside a larger network (Girvan & Newman, 2002). Given the limited number of nodes and the presence of loops in the conference networks, this indicator was only applied to the team-level network analyses.

Through these methods and metrics, the transfer networks in FBS football were able to be characterized in a way that more objectively reflected the influences, connections, and interactions of specific conferences and teams during the transfer portal era. In total, four distinct network graphs—two related to the networks for all effective transfers at the conference and team levels and two more for the transfer of blue-chip prospects between conferences and teams—were created. The networks for the subsets of blue-chip transfers were constructed to better isolate the movement of highly perceived talent through the transfer portal. The degree-centrality measures provided estimates for the volume of transfers flowing between conferences and schools, and the corresponding adjacency matrix precisely quantified the

interconnectedness of specific nodes. Due to conference realignment, some teams appeared in multiple conferences over the timeframe; however, transfers were aggregated at the conference level based on which conference the team was a member of at the time of the transfer.

Following the network analyses, a series of descriptive statistics analyzing which FBS conferences and teams experienced net gains or losses in the transfer portal, as related to the mean talent and experience levels of incoming and outgoing transfers, were calculated as supplements to the information communicated through the social network graphs and indicators. The standard deviations and Gini coefficients (ranging from 0 = perfect equality to 1 = perfect inequality) of incoming and outgoing talent within the different conferences were also estimated as measures of transfer-talent dispersion, and the highest and lowest ranked teams in terms of the mean talent levels of the arriving and departing transfers were used to portray the range of transfer talent within each conference.

Results

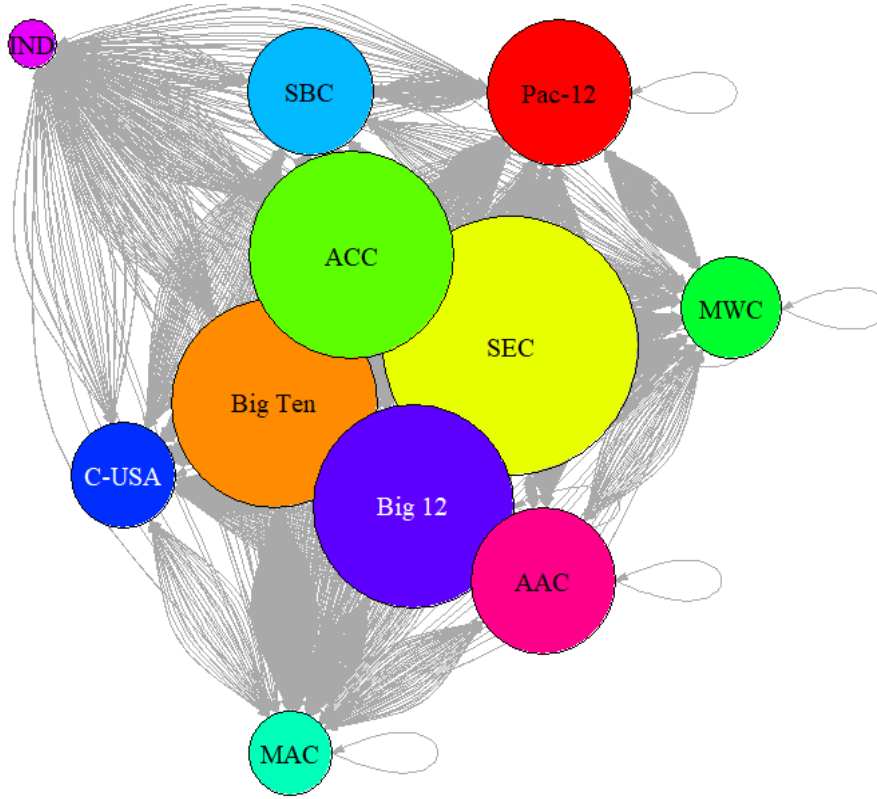
The graphs coinciding with the social network analyses conducted across the FBS conferences are portrayed in the Fruchterman-Reingold format in Figure 1 (all intra-FBS transfers) and Figure 2 (blue-chip transfers). The in-degree, out-degree, and total-degree indicators of centrality are provided in Table 1, which also includes a column displaying the net flow (i.e., the difference between the number of inflows and outflows) of transfer volume within each conference. Table 2 shows the eigenvector, authority score, hub score, and PageRank indicators for each FBS conference, as well as the networks' density and assortativity values. Table 3 is an adjacency matrix that tabulates the number of transfers between specific conferences. In all three tables, measures from the blue-chip network appear bracketed in parentheses next to the corresponding metrics from the full network.

Conference-Level Social Network Analyses (All Transfers)

Starting with the full network for effective FBS portal transfers, Figure 1 shows the autonomous, "Power Four" (Atlantic Coast Conference (ACC), Big Ten, Big 12, and SEC) conferences have frequently been situated at the heart of college football's transfer network during the transfer portal era. The number of edges (transfers) flowing in and out of the nodes and the sizes of the nodes, which are scaled to reflect total-degree centrality, show how critical these conferences have been to transfer-athlete movement. The Pac-12, which was considered part of a larger "Power Five" grouping of autonomous conferences during the sample's timeframe, showed signs of being distinctly less involved in the FBS transfer network. In fact, Table 1 and Table 2 show the American Athletic Conference (AAC), which recently changed its name to the American Conference, ranked higher than the Pac-12 in terms of total-degree centrality (761 to 757), eigenvector centrality (x = 0.559 to 0.492), and PageRank centrality (PR = 0.107 to 0.077) over this time. The more peripheral conferences in the network include many mid-major, non-autonomous leagues like the

Mid-American Conference (MAC) and Mountain West Conference (MWC), as well as the independent programs (IND) that were not official members of a conference. Overall, the network had a slightly positive assortativity value (r = 0.064) that alluded to a very minor tendency for like-degree conferences to engage in transfers.

Figure 1
FBS Transfer Portal Conferences Network (All Effective Transfers)



Note. Node size is scaled by total-degree centrality.

Table 1

Degree Centrality Measures for FBS Conferences in the Transfer Portal (2019-2024)

Conference	In-Degree		Out-Degree		Total-Degree		Net	
AAC	483	(65)	278	(27)	761	(92)	205	(38)
SBC	419	(28)	241	(17)	660	(45)	178	(11)
C-USA	343	(29)	207	(20)	550	(49)	136	(9)
MWC	304	(41)	228	(20)	532	(61)	76	(21)
MAC	233	(15)	206	(21)	439	(36)	27	(-6)
IND	135	(17)	120	(18)	255	(35)	15	(-1)
Big 12	518	(87)	532	(85)	1050	(172)	-14	(2)
Pac-12	333	(87)	424	(103)	757	(190)	-91	(-16)
ACC	474	(91)	595	(101)	1069	(192)	-121	(-10)
Big Ten	455	(116)	626	(125)	1081	(241)	-171	(-9)
SEC	548	(190)	788	(229)	1336	(419)	-240	(-39)

Note. Values in parentheses reflect blue-chip (four-star and five-star) transfers only.

The authority and hub scores, combined with the in-degree and out-degree centrality measures, reveal directional flow across the network's members. The SEC ranked highest in terms of hub score (1.000) and authority score (1.000), two indicators that reinforced its central role as a key sender and receiver of talent to and from prominent conferences. The other Power Four conferences were similarly situated in the top five for both authority and hub score while ranking just behind the SEC in total transfer (total-degree) volume. The Pac-12 was ranked fifth among FBS conferences for hub score (0.460) but eighth for authority score (0.546) behind the AAC (0.880), Sun Belt Conference (SBC; 0.686), and Conference USA (C-USA; 0.564). This suggests that, relative to the other conferences, the Pac-12 was more involved in the disbursement of transfers to authoritative conferences and less involved as a recipient. The AAC's authority score of 0.880 ranked top among the non-autonomous (Group of Five) conferences and second in the entire FBS; however, its hub score of 0.330 ranked sixth in the FBS. Regarding the net volume of transfers across FBS conferences, the SEC ranked last after seeing 240 more athletes depart than arrive, while the AAC was the biggest beneficiary with a net of 205 transfers during the observed timeframe. Following the SEC, the other autonomous conferences were also net losers in terms of transfer volume; conversely, every Group of Five conference experienced net gains, witnessing more arrivals than departures.

Table 2
Social Network Indicators for FBS Conferences in the Transfer Portal (2019-2024)

Conference	Eigenvector	PageRank	Authority	Hub
AAC	0.559 (0.251)	0.107 (0.080)	0.880 (0.370)	0.330 (0.141)
ACC	0.756 (0.443)	0.107 (0.117)	0.836 (0.437)	0.716 (0.445)
Big 12	0.715 (0.402)	0.122 (0.117)	0.849 (0.412)	0.632 (0.389)
Big Ten	0.752 (0.530)	0.101 (0.145)	0.788 (0.577)	0.735 (0.485)
C-USA	0.389 (0.137)	0.087 (0.043)	0.564 (0.185)	0.251 (0.092)
IND	0.173 (0.076)	0.041 (0.031)	0.215 (0.084)	0.141 (0.069)
MAC	0.311 (0.096)	0.060 (0.030)	0.393 (0.078)	0.247 (0.109)
MWC	0.342 (0.128)	0.073 (0.054)	0.465 (0.193)	0.252 (0.070)
Pac-12	0.492 (0.366)	0.077 (0.111)	0.546 (0.392)	0.460 (0.348)
SBC	0.467 (0.115)	0.104 (0.042)	0.686 (0.148)	0.297 (0.083)
SEC	1.000 (1.000)	0.122 (0.229)	1.000 (1.000)	1.000 (1.000)
Assortativity	0.064 (-0.02)			
Density	35.08 (6.33)			

Note. Values in parentheses reflect network for blue-chip (four-star and five-statransfers only.

Table 3

Adjacency Matrix for FBS Conferences in the Transfer Portal (2019-2024)

From/To	Pac-12	Big Ten	SEC	ACC	MWC	MAC	SBC	C-USA	Big 12	IND	AAC
AAC	12 (1)	16 (5)	49 (11)	21 (2)	16 (0)	22 (1)	45 (0)	34 (1)	40 (6)	7 (0)	16 (0)
ACC	28 (6)	67 (17)	79 (30)	74 (9)	29 (4)	38 (0)	72 (8)	50 (6)	61 (11)	22 (3)	75 (7)
Big 12	42 (12)	48 (13)	64 (25)	48 (7)	46 (1)	26 (1)	63 (3)	46 (2)	51 (8)	14 (0)	84 (13)
Big Ten	42 (12)	77 (23)	78 (23)	82 (16)	33 (5)	67 (7)	39 (4)	43 (3)	68 (16)	25 (5)	72 (11)
C-USA	12 (1)	13 (1)	30 (8)	30 (3)	9 (0)	7 (0)	28 (2)	16 (1)	29 (2)	11 (2)	22 (0)
IND	11 (3)	18 (3)	7 (2)	20 (5)	7 (0)	8 (1)	13 (0)	10 (2)	14 (2)	2 (0)	10 (2)
MAC	11 (3)	37 (3)	24 (8)	21 (3)	13 (0)	13 (0)	18 (0)	17 (0)	31 (3)	6 (0)	15 (1)
MWC	35 (7)	22 (4)	12 (1)	8 (1)	31 (2)	9 (0)	20 (0)	18 (0)	52 (3)	8 (0)	13 (2)
Pac-12	77 (22)	44 (12)	32 (12)	40 (13)	83 (20)	11 (1)	21 (3)	20 (2)	41 (10)	19 (3)	36 (5)
SBC	5 (0)	23 (3)	33 (5)	31 (6)	7 (0)	10 (0)	30 (0)	30 (0)	28 (3)	8 (0)	36 (0)
SEC	58 (20)	90 (32)	140 (65)	99 (26)	30 (9)	22 (4)	70 (8)	59 (14)	103 (23)	13 (4)	104 (24)

Note. Values in parentheses reflect blue-chip (four-star and five-star) transfers.

The adjacency matrix in Table 3 provides further information on conference-to-conference movement. From this, it is apparent that within-conference transfers occurred quite frequently. The most frequent effective transfer occurred between SEC schools (n = 140). Outside of transfers between fellow independent schools (n = 2), the fewest portal transfers moved from the SBC to the Pac-12 (n = 5). This points to another trend of the portal, a proclivity for transfers to occur between leagues with similar geographic centers. For instance, the most Pac-12 transfers left for the MWC (n = 83), and the most MAC transfers left for the Big Ten (n = 37). Across the board, the SEC was the most popular destination for transfers from the AAC (n = 49) and ACC (n = 79), while the SEC and ACC were tied as the most popular destination for C-USA transfers (n = 30); the ACC was also the most frequent recipient of FBS transfers from the Big Ten (n = 82) and independent programs (n = 20). Elsewhere, the AAC received the most transfers from the Big 12 (n = 84) and the SBC (n = 36), while the Big 12 received the most Mountain West Conference (MWC) exports (n = 52).

Conference-Level Social Network Analyses (Blue-Chip Transfers)

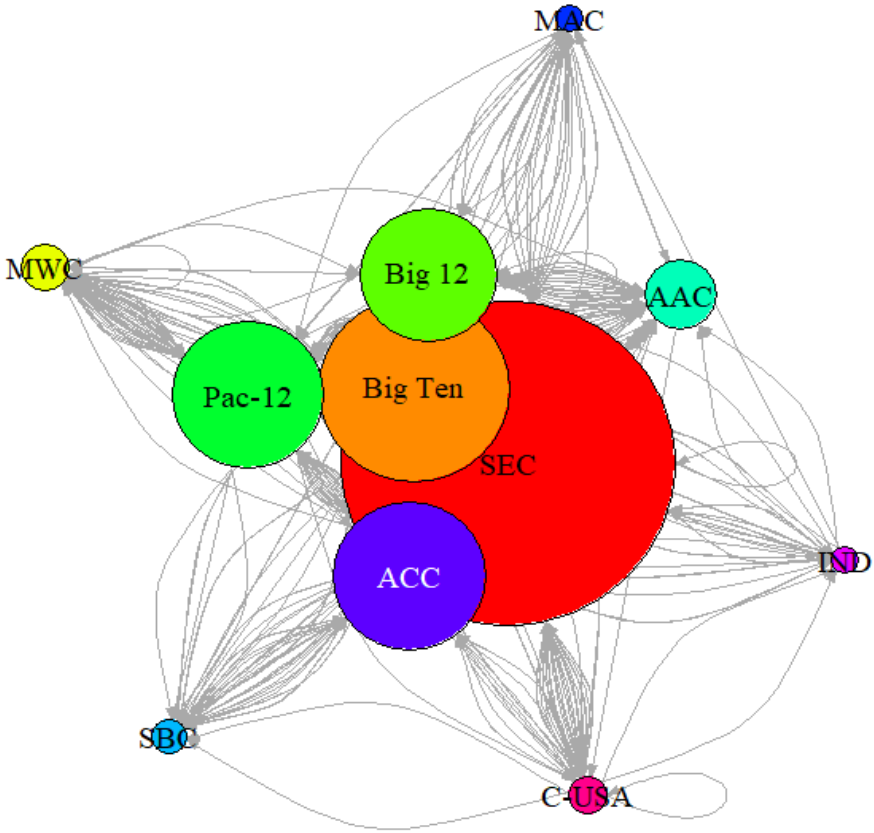
The picture changed slightly when reducing the overall sample of effective transfers to those who were four- or five-star prospects, though many of the observed shifts were exaggerations of trends noticed in the larger network. Graphically, Figure 2 shows the nodes representing the FBS conferences became even more dispersed, with the non-autonomous leagues being further repulsed to the network's boundaries and the SEC, Big Ten, and ACC becoming further entrenched as focal points at the network's center. The network indicators in Table 2 provide further evidence of these trends as the SEC ranked first in eigenvector centrality (x = 1.000) and PageRank (PR = 0.229), followed by the Big Ten (x = 0.530; PR = 0.145), ACC (x = 0.443; PR = 0.117), Big 12 (x = 0.402; PR = 0.117), and Pac-12 (x = 0.366; PR = 0.111).

Unlike the network containing all effective transfers, each of the Group of Five conferences, including the AAC (x = 0.251; PR = 0.080), ranked behind the Power Five for eigenvector centrality and PageRank. This also held true in a directional sense for the authority and hub scores, as each autonomous conference scored higher in both categories relative to the non-autonomous conferences. Overall, the blue-chip network remained dense (D = 6.33), albeit to a relatively lesser degree than the full network. The assortativity value also turned negative (r = -0.02), suggesting blue-chip transfers occurred less frequently between conferences that were engaged in a similar volume of transfers; however, the value's proximity to zero implies such a trend remained very weak.

Lastly, Table 3 shows that, outside intra-SEC transfers, the SEC and ACC were the most frequent exchangers of top-tier talent in the portal (n = 56), while--excluding the independents--several conferences (e.g., the MWC and SBC, MAC and SBC, and SBC and AAC) failed to exchange a single blue-chip talent between them. Relative to the other FBS conferences, Table 1 confirms the SEC both secured (n = 190) and lost (n = 229) the highest number of blue-chip transfers in the portal, with the most frequent destination for its top transfers being other SEC programs (n =

Figure 2

FBS Transfer Portal Conferences Network (Blue-Chip Transfers)



Note. Node sizes are scaled by total-degree centrality.

65). Apart from the Pac-12, every other autonomous conference lost at least as many four- and five-star transfers to the SEC as were exchanged between its own member schools. The AAC, MAC, and C-USA also yielded more blue-chip transfers to SEC programs than to programs in any other conference. Table 1 reinforces these findings, showing the net losses assumed by many of the autonomous conferences when it came to transfer volume in the entire network either shrank dramatically or turned into net gains when analyzed through the blue-chip network.

Conference-Level Descriptive Statistics

The degree centrality measures (counts) presented in Table 1 allow the proportions of effective transfers who moved across and within the broader categories of autonomous and non-autonomous conferences to be calculated. These proportions

show 38.47% of total effective transfers moved between programs in autonomous conferences, 31.38% moved from autonomous to non-autonomous conferences, 13.78% moved between non-autonomous conferences, and 16.37% left non-autonomous conferences for teams in autonomous leagues. This corresponds with 55.08% (45.7%) of players who had been at autonomous (non-autonomous) conferences leaving for programs in other autonomous (non-autonomous) conferences. Furthermore, approximately 25.66% (18.46%) of autonomous to autonomous (non-autonomous to non-autonomous) effective transfers stayed within the same conference (e.g., SEC to SEC or AAC to AAC).

Table 4 presents a shift from the volume-based measures of transfer movement to FBS conferences' average gains and losses in relation to the 247 ratings, PFF ratings, total snaps, and snaps per season of their incoming and outgoing transfers. Beginning with the 247 ratings assigned as measures of player quality at recruitment, the AAC (0.013) is seen, on average, to be the biggest net beneficiary, followed by the Pac-12 (0.011), Big 12 (0.009), ACC (0.008), and SEC (0.007). The Big Ten (0.002), while still positive, ranked lowest among autonomous conferences for the net mean 247 ratings of its transfers. That said, the average level of talent being acquired in the Big Ten and other Power conferences was higher than the talent being gained by the mid-majors. The MAC (-0.002), C-USA (-0.004), and SBC (-0.005) were all net losers in relation to the average 247 ratings of their incoming and outgoing transfers. The standard deviations of the 247 ratings for incoming players in each conference, which are presented in Table 5, further showed the MWC ($\sigma = 0.081$), C-USA ($\sigma = 0.079$), MAC ($\sigma = 0.078$), SBC ($\sigma = 0.075$), and AAC ($\sigma = 0.074$) had the widest dispersions in arriving talent, while transfers to the Big 12 ($\sigma = 0.063$), Big Ten ($\sigma = 0.063$), Pac-12 ($\sigma = 0.060$), SEC ($\sigma = 0.059$), and ACC ($\sigma = 0.054$) had more concentrated 247 ratings. Likewise, relatively wider variation was generally observed in the 247 ratings of the smaller conferences' outgoing players.

Shifting to PFF ratings that provided more updated measures of talent relative to the 247 ratings, the Power conference members were further identified as net beneficiaries of the portal system. The autonomous conferences led the FBS with the highest mean PFF ratings for incoming transfers and stood as the only conferences with mean advantages in this measure. The SEC was particularly opportunistic, acquiring players who were, on average, two PFF rating points better than those it lost. The Big Ten and Pac-12 were not far behind, but the independent schools and all mid-major conferences were typically at a net disadvantage for PFF rating. The flow of experience, as measured by the mean total snaps played and snaps per season of the incoming and outgoing transfers, told a similar story; that is, the Power Five—led by the SEC and Big Ten—tended to be net beneficiaries of playing experience, while the non-autonomous Group of Five conferences regularly lost experience. Table 5 shows transfers in and out of the autonomous conferences, apart from the Big Ten (in) and Big 12 (out), tended to have lower standard deviations, while the non-autonomous leagues, especially for incoming transfers, displayed higher variation in their transfers' ratings; in addition, the dispersion of ratings for outgoing players was

Table 4

Mean Transfer Portal Talent and Experience Flow across FBS Conferences (2019-2024)

μ 247 Rating				μ PFF Rating			
Conf	Gained	Lost	Net	Conf	Gained	Lost	Net
AAC	0.842	0.828	0.013	SEC	64.198	62.152	2.046
Pac-12	0.863	0.852	0.011	Big Ten	63.492	61.739	1.753
Big 12	0.856	0.848	0.009	Pac-12	63.516	61.836	1.680
ACC	0.863	0.855	0.008	ACC	63.512	62.367	1.141
SEC	0.875	0.868	0.007	Big 12	63.404	62.847	0.564
MWC	0.828	0.822	0.006	IND	61.659	62.565	-0.906
IND	0.837	0.832	0.005	MWC	61.601	62.915	-1.314
Big Ten	0.863	0.861	0.002	C-USA	61.694	63.840	-2.146
MAC	0.820	0.822	-0.002	AAC	61.156	63.660	-2.518
C-USA	0.824	0.828	-0.004	SBC	61.457	64.432	-2.975
SBC	0.822	0.827	-0.005	MAC	60.627	63.670	-3.043

μ Total Snaps				μ Snaps per Season			
Conf	Gained	Lost	Net	Conf	Gained	Lost	Net
SEC	805.43	451.34	354.09	SEC	289.96	163.90	126.06
Big Ten	737.06	461.42	275.64	Big Ten	266.29	163.40	102.89
Big 12	779.72	546.21	234.79	Big 12	279.85	202.92	76.93
Pac-12	755.29	558.67	196.62	ACC	265.61	198.45	66.68
ACC	785.02	629.24	155.24	Pac-12	250.71	197.21	53.50
IND	550.65	649.75	-99.10	IND	187.47	235.40	-47.93
AAC	475.12	804.88	-332.23	AAC	174.41	277.90	-104.35
MWC	440.25	796.92	-356.67	MWC	158.38	310.31	-151.93
C-USA	424.53	941.84	-517.31	MAC	143.27	323.23	-179.96
SBC	434.37	967.90	-533.53	C-USA	161.93	365.62	-203.69
MAC	426.54	1023.73	-597.19	SBC	160.51	367.21	-206.70

Note. Sub-tables are arranged in descending order by the *Net* column.

relatively wide in the SBC (σ = 6.700), MAC (σ = 6.714), and C-USA (σ = 6.692).

The Gini coefficients presented in Table 6 quantify the distribution of transfer talent entering and exiting each conference by their 247 star ratings. Group of Five conferences recorded higher volumes of incoming transfers, particularly among unranked, 2-star, and 3-star players, with lower Gini values indicating relatively even distributions. Conversely, incoming 4- and 5-star transfers were less common and more highly concentrated, especially in C-USA and the MAC. Autonomous confer-

ences saw more frequent departures of 3-, 4-, and 5-star players, while non-autonomous conferences recorded more unranked outflows. These unranked departures were unevenly distributed, with elevated Gini values in the AAC, C-USA, and SBC.

Team-Level Social Network Analyses (All Transfers)

The social network analysis conducted on all effective transfers between distinct FBS programs is presented in Figure 3. Table 7 shows the degree centrality measures for the 15 highest and lowest ranked programs by net volume, and Table 8 contains the social network indicators for the 15 highest and lowest ranked programs by eigenvector centrality. While 133 teams composed the nodes in this network, those on the perimeter are easy to identify as being less involved. Two military schools (e.g., Army and Navy) are positioned on the outside, as are several programs (e.g., Kennesaw State University and Sam Houston State University) that were only in the FBS for a condensed portion of the examined timeframe. The University of Colorado (n =149), Arizona State University (n = 129), Ole Miss (n = 123), University of Louisville (n = 120), Florida State University (n =120), and University of Southern California (n = 120) had the highest total-degree centralities, meaning they were most heavily involved in the team network.

Table 5

Dispersion Measures for Transfer Portal Talent Within FBS Conferences (2019-2024)

In	σ 247	High 247	μ	Low 247	μ	σ PFF	High PFF	μ	Low PFF	μ
AAC	0.074	UCF	0.879	East Carolina	0.812	6.409	Cincinnati	66.471	UTSA	59.419
ACC	0.054	Clemson	0.960	Wake Forest	0.835	5.998	California	65.649	Clemson	51.759
Big 12	0.064	Texas	0.890	Kansas State	0.828	6.131	Colorado	65.018	Utah	60.078
Big Ten	0.063	Oregon	0.907	Northwestern	0.817	7.016	Oregon	68.470	Illinois	59.590
C-USA	0.079	Marshall	0.881	Rice	0.772	6.337	New Mexico St.	64.257	UTSA	59.635
IND	0.065	Notre Dame	0.877	Massachusetts	0.825	7.223	Notre Dame	66.111	New Mexico St.	55.120
MAC	0.078	Northern Illinois	0.852	Ohio	0.787	6.523	W. Michigan	63.269	C. Michigan	57.398
MWC	0.081	San Diego State	0.853	San Jose State	0.794	6.243	Utah State	63.152	Hawaii	59.912
Pac-12	0.060	UCLA	0.878	Arizona	0.828	6.093	UCLA	65.532	Arizona	61.356
SBC	0.075	Coastal Carolina	0.839	La.-Monroe	0.783	5.944	James Madison	64.767	La.-Monroe	59.466
SEC	0.059	Texas	0.909	Vanderbilt	0.824	5.996	Texas	66.799	Mississippi St.	62.599
Out	σ 247	High 247	μ	Low 247	μ	σ PFF	High PFF	μ	Low PFF	μ
AAC	0.073	UTSA	0.893	Navy	0.722	6.262	Rice	67.215	East Carolina	60.459
ACC	0.063	Clemson	0.888	Boston College	0.826	5.826	Wake Forest	66.074	Stanford	60.132
Big 12	0.069	Oklahoma	0.875	Kansas	0.802	6.805	Oklahoma	65.957	Arizona State	59.551
Big Ten	0.060	Ohio State	0.885	Rutgers	0.826	6.322	Washington	64.841	Rutgers	59.478
C-USA	0.065	UAB	0.885	UTSA	0.750	6.692	Sam Houston St.	69.850	UTSA	59.831

IND	0.076	Notre Dame	0.868	Liberty	0.750	5.004	Army	68.020	Massachusetts	60.097
MAC	0.078	Ball State	0.858	E. Michigan	0.792	6.714	Miami (OH)	66.546	Akron	58.494
MWC	0.081	San Diego St.	0.866	Nevada	0.789	6.333	Hawaii	64.657	Colorado State	60.881
Pac-12	0.074	USC	0.886	Washington St.	0.824	6.109	Oregon State	64.216	Colorado	59.800
SBC	0.069	Louisiana	0.871	South Alabama	0.776	6.700	James Madison	68.546	Southern Miss	59.752
SEC	0.067	Alabama	0.885	Mississippi St.	0.846	6.511	Oklahoma	65.698	Kentucky	59.856

Note. The table is split to display metrics for incoming (top) and outgoing (bottom) transfers; columns show the standard deviations of the 247 ratings (σ 247) and PFF ratings (σ PFF) for incoming/outgoing transfers in a conference and which teams in each conference averaged (μ) the highest and lowest rated incoming/outgoing transfers according to 247 rating and PFF rating.

Table 6

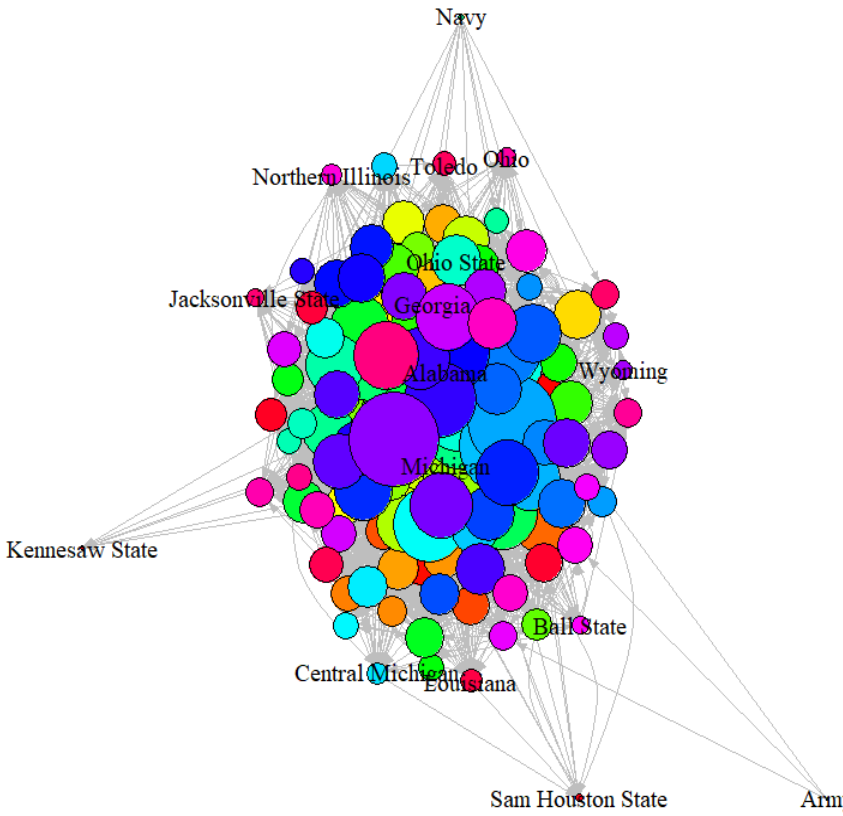
Star Rating Counts and Concentrations of Incoming and Outgoing Transfers within FBS Conferences in the Transfer Portal (2019-2024)

	NR	Gini	2-Star	Gini	3-Star	Gini	4-Star	Gini	5-Star	Gini
AAC	34 (18)	0.364 (0.739)	30 (35)	0.438 (0.454)	354 (197)	0.262 (0.330)	63 (27)	0.408 (0.431)	2 (0)	0.875 (N/A)
ACC	10 (26)	0.695 (0.594)	23 (17)	0.517 (0.611)	350 (452)	0.326 (0.307)	90 (97)	0.486 (0.471)	1 (4)	0.941 (0.778)
Big 12	22 (29)	0.622 (0.544)	23 (18)	0.548 (0.643)	386 (400)	0.241 (0.278)	83 (83)	0.449 (0.506)	4 (2)	0.861 (0.895)
Big Ten	14 (21)	0.484 (0.558)	29 (21)	0.531 (0.659)	296 (459)	0.345 (0.236)	111 (120)	0.301 (0.418)	5 (5)	0.811 (0.856)
C-USA	27 (8)	0.472 (0.792)	37 (42)	0.546 (0.455)	250 (137)	0.290 (0.433)	28 (20)	0.579 (0.706)	1 (0)	0.947 (N/A)
IND	5 (7)	0.433 (0.518)	17 (20)	0.382 (0.625)	96 (75)	0.406 (0.515)	17 (18)	0.500 (0.861)	0 (0)	N/A (N/A)
MAC	21 (15)	0.447 (0.406)	26 (44)	0.497 (0.371)	171 (126)	0.258 (0.160)	15 (21)	0.626 (0.369)	0 (0)	N/A (N/A)
MWC	28 (21)	0.370 (0.519)	22 (26)	0.281 (0.552)	213 (161)	0.208 (0.164)	41 (20)	0.266 (0.464)	0 (0)	N/A (N/A)
Pac-12	8 (24)	0.479 (0.451)	24 (18)	0.569 (0.417)	214 (279)	0.278 (0.145)	84 (100)	0.258 (0.268)	3 (3)	0.861 (0.861)
SBC	34 (13)	0.387 (0.621)	44 (38)	0.455 (0.391)	313 (173)	0.254 (0.211)	28 (17)	0.505 (0.559)	0 (0)	N/A (N/A)
SEC	15 (36)	0.471 (0.410)	16 (12)	0.648 (0.615)	327 (511)	0.277 (0.160)	180 (217)	0.260 (0.307)	10 (12)	0.588 (0.760)

Note. Star rating counts and Gini coefficients for outgoing transfers are bracketed by parentheses.

Figure 3

FBS Transfer Portal Teams Network (All Effective Transfers)



Note. Node sizes are scaled by total-degree centrality; national champions and the bottom 10% of teams for total-degree centrality are labeled.

The national championship teams during the portal era—University of Georgia (x = 0.587; PR = 0.003), University of Michigan (x = 0.432; PR = 0.005), University of Alabama (x = 0.703; PR = 0.005), and Ohio State University (x = 0.49; PR = 0.004)—were also positioned closer to the graph's center. These programs ranked in the top 40 of the FBS for eigenvector centrality, but they were relatively low on the list for PageRank. Texas State University (PR = 0.017), Ole Miss (PR = 0.017), University of Louisville (PR = 0.017), University of Colorado (PR = 0.016), and University of Houston (PR = 0.015) had the highest PageRank values, suggesting FBS transfers were more likely to move to these schools via the portal. The University of Colorado also had the highest eigenvector centrality (x = 1.000), a measure that further reflected its heavy involvement in the transfer portal over this time. Overall, the teams in the network were only sparsely connected, with a density score

of 0.242 implying less than 25% of the possible connections existed. Furthermore, the network's assortativity (r = 0.051) indicated only a faint tendency for the more portal-involved programs to engage in transfers with one another.

Regarding the directional flow of transfers across FBS programs, Southern Methodist University (SMU) possessed the highest authority score (1.000), and the University of Miami (Fla.) had the highest hub score (1.000). The University of Colorado was highly ranked across both indicators, with an authority score of 0.897 (second in the FBS behind SMU) and a hub score of 0.948 (third in the FBS). The University of Alabama (0.995), University of Georgia (0.838), Ohio State University (0.62), and University of Michigan (0.6) ranked in the top 25 for hub score, identifying these championship programs as prominent suppliers of transfer talent for teams acquiring players through the portal; however, they ranked 79th, 89th, 87th, and 111th, respectively, in authority score. By net volume, the University of Georgia (n = -46) lost the most players to the portal, with the University of Alabama (n = -44) and Clemson University (n = -41) also losing a relatively high number of transfers compared to those they gained.

On the receiving end, the University of Houston (0.763), Arizona State University (0.699), University of Louisville (0.68), Florida State University (0.672), and Ole Miss (0.671) followed SMU and the University of Colorado as the programs ranked highest in authority score. Volume-wise, SMU was the biggest net-beneficiary in the portal, bringing in 51 more effective transfers than it lost. Kennesaw State University (0.036), Stanford University (0.023), Clemson University (0.006), Navy (0.000), and Army (0.000) rounded out the bottom of the list with the lowest authority scores. Two of these teams, Kennesaw State University (0.000) and Army (0.023), further featured alongside Ball State University (0.094), University of Texas at San Antonio (UTSA) (0.058), and Sam Houston State University (0.011) at the bottom of the rankings for hub score. Table 9 provides a snapshot of the more common transfers in the total network for effective transfers, with many of the top connections involving programs in closer geographic vicinities (e.g., Ole Miss to the University of Southern Mississippi, University of Oregon to University of Nevada, University of Nevada to Colorado State University, Florida State University to Florida Atlantic University, University of Louisville to University of Cincinnati, University of North Carolina to East Carolina University, University of Texas to SMU, and Texas Tech University to University of Houston). However, the modularity score (Q = 0.137) suggests it was

Table 7

Degree Centrality Measures for Select FBS Programs in the Transfer Portal (2019-2024)

Program	In-Degree	Out-Degree	Total-Degree	Net
SMU	72 (10)	21 (2)	93 (12)	51 (8)
Texas State	66 (3)	19 (2)	85 (5)	47 (1)
Charlotte	61 (10)	18 (1)	79 (11)	43 (9)
UTSA	44 (4)	5 (3)	49 (7)	39 (1)
Houston	64 (4)	34 (7)	98 (11)	30 (-3)
Louisiana Tech	41 (2)	14 (2)	55 (4)	27 (0)
Southern Miss	32 (1)	7 (0)	39 (1)	25 (1)
Memphis	48 (6)	24 (3)	72 (9)	24 (3)
Marshall	46 (5)	24 (1)	70 (6)	22 (4)
Tulane	38 (6)	16 (2)	54 (8)	22 (4)
Arkansas State	42 (4)	20 (0)	62 (4)	22 (4)
Massachusetts	47 (2)	26 (0)	73 (2)	21 (2)
UCF	55 (11)	34 (6)	89 (17)	21 (5)
USF	46 (7)	26 (2)	72 (9)	20 (5)
South Alabama	33 (1)	13 (2)	46 (3)	20 (-1)
West Virginia	40 (4)	62 (9)	102 (13)	-22 (-5)
Florida	38 (15)	60 (20)	98 (35)	-22 (-5)
Maryland	23 (11)	46 (10)	69 (21)	-23 (1)
LSU	34 (16)	57 (23)	91 (39)	-23 (-7)
Notre Dame	21 (9)	49 (17)	70 (26)	-28 (-8)
Ohio State	20 (11)	48 (16)	68 (27)	-28 (-5)
Texas	27 (14)	55 (13)	82 (27)	-28 (1)
Penn State	17 (5)	46 (14)	63 (19)	-29 (-9)
North Carolina	24 (4)	57 (9)	81 (13)	-33 (-5)
Michigan	19 (8)	54 (23)	73 (31)	-35 (-15)
Texas A&M	25 (10)	63 (16)	88 (26)	-38 (-6)
Stanford	2 (0)	40 (10)	42 (10)	-38 (-10)
Clemson	1 (1)	42 (14)	43 (15)	-41 (-13)
Alabama	24 (14)	68 (35)	92 (49)	-44 (-21)
Georgia	17 (12)	63 (27)	80 (39)	-46 (-15)

Note. Table is split to show the 15 highest (top) and lowest (bottom) ranked teams by *Net* volume; values in parentheses reflect blue-chip (four-star and five-star) transfers.

Table 8

Social Network Indicators for FBS Programs in the Transfer Portal (2019-2024)

Program	Eigenvector	PageRank	Authority	Hub
Colorado	1.000 (0.389)	0.016 (0.013)	0.897 (0.501)	0.948 (0.164)
Arizona State	0.862 (0.422)	0.013 (0.011)	0.699 (0.346)	0.859 (0.233)
Florida State	0.849 (0.632)	0.012 (0.018)	0.672 (0.899)	0.853 (0.223)
USC	0.811 (0.847)	0.010 (0.022)	0.653 (0.649)	0.795 (0.616)
Louisville	0.806 (0.230)	0.017 (0.010)	0.680 (0.423)	0.742 (0.098)
Miami	0.802 (0.594)	0.011 (0.017)	0.538 (0.645)	1.000 (0.314)
Ole Miss	0.789 (0.657)	0.017 (0.031)	0.671 (1.000)	0.739 (0.209)
Arkansas	0.781 (0.608)	0.013 (0.016)	0.562 (0.885)	0.919 (0.190)
Oklahoma	0.763 (0.700)	0.012 (0.025)	0.544 (0.476)	0.874 (0.465)
Auburn	0.712 (0.313)	0.011 (0.017)	0.488 (0.168)	0.833 (0.259)
Alabama	0.703 (1.000)	0.005 (0.012)	0.272 (0.609)	0.995 (1.000)
SMU	0.686 (0.232)	0.014 (0.011)	1.000 (0.316)	0.291 (0.037)
Houston	0.677 (0.219)	0.015 (0.005)	0.763 (0.150)	0.480 (0.154)
Florida	0.675 (0.526)	0.008 (0.019)	0.453 (0.470)	0.809 (0.350)
Tennessee	0.658 (0.547)	0.007 (0.018)	0.435 (0.549)	0.792 (0.280)
Toledo	0.208 (0.076)	0.004 (0.005)	0.258 (0.097)	0.114 (0.007)
Bowling Green	0.206 (0.078)	0.005 (0.003)	0.161 (0.034)	0.181 (0.076)
Rice	0.202 (0.027)	0.004 (0.005)	0.193 (0.045)	0.197 (0.000)
E. Michigan	0.189 (0.012)	0.005 (0.002)	0.153 (0.000)	0.170 (0.016)
Wyoming	0.186 (0.067)	0.003 (0.002)	0.104 (0.000)	0.224 (0.086)
Iowa	0.181 (0.084)	0.003 (0.005)	0.110 (0.103)	0.225 (0.053)
Northern Illinois	0.171 (0.007)	0.003 (0.004)	0.078 (0.004)	0.245 (0.000)
C. Michigan	0.170 (0.077)	0.003 (0.003)	0.107 (0.050)	0.203 (0.060)
Jacksonville St.	0.158 (N/A)	0.004 (N/A)	0.151 (N/A)	0.114 (N/A)
Ohio	0.151 (0.025)	0.004 (0.002)	0.079 (0.000)	0.189 (0.031)
Ball State	0.142 (0.017)	0.004 (0.002)	0.123 (0.000)	0.094 (0.019)
Sam Houston St.	0.061 (N/A)	0.004 (N/A)	0.072 (N/A)	0.011 (N/A)

Navy	0.056 (N/A)	0.001 (N/A)	0.000 (N/A)	0.108 (N/A)
Kennesaw State	0.031 (N/A)	0.003 (N/A)	0.036 (N/A)	0.000 (N/A)
Army	0.014 (N/A)	0.001 (N/A)	0.000 (N/A)	0.023 (N/A)
Assortativity	0.051 (-0.0004)			
Density	0.242 (0.048)			

Note. Table is split to show 15 highest (top) and lowest (bottom) ranked teams by *Eigenvector;* values in parentheses reflect the network for blue-chip (four-star and five-star) transfers only.

difficult to identify any consistent sub-networks within the network at large.

Table 9

Top Connections and Modularity Scores for FBS Programs in the Transfer Portal (2019-2024)

Top Connections (All; $n > 5$)			Top Connections (Blue-Chip; $n > 2$)		
From	*To*	*n*	*From*	*To*	*n*
James Madison	Indiana	12	Alabama	Texas	5
Miami	SMU	9	Alabama	Florida State	3
Ole Miss	Southern Miss	8	Auburn	Troy	3
Oregon	Nevada	8	Florida State	Marshall	3
Buffalo	Kansas	7	Georgia	Arkansas	3
Nevada	Colorado State	7	Louisiana	Florida	3
Alabama	Texas	6	Michigan	Charlotte	3
Arkansas	Colorado	6	Oklahoma	Arkansas	3
Florida State	Florida Atlantic	6	Oklahoma	USC	3
Louisville	Cincinnati	6	USC	Fresno State	3
North Carolina	East Carolina	6	USC	Illinois	3
Texas	SMU	6			
Texas Tech	Houston	6			
Modularity	0.137		Modularity	0.027	

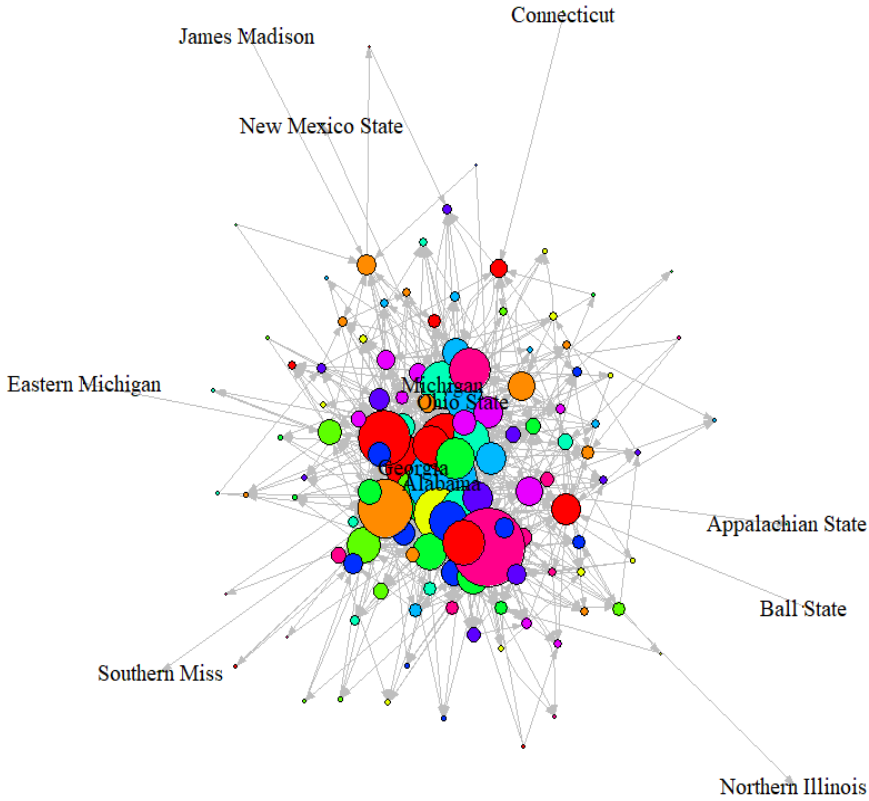
Team-Level Social Network Analyses (Blue-Chip Transfers)

The blue-chip, team-level network portrayed in Figure 4 provides further evidence of autonomous programs distinguishing themselves from the other FBS teams in the transfer portal when it came to their involvement with higher-rated players. The programs repulsed to the network's outer boundaries are all non-autonomous programs that were only sparsely connected to the rest of the blue-chip network.

The total-degree centrality measures for blue-chip transfers in Table 7 allude to this, showing most of these schools' transfer volumes consisted of players who were not blue-chip prospects. Meanwhile, the University of Georgia, University of Alabama, University of Michigan, and Ohio State University were situated nearer to the network's center with more frequent edges between them; however, just as it was in relation to the net-volume for all transfers, each of these four teams was at a net disadvantage for blue-chip transfer volume, losing 15, 21, 15, and five more elite players to the portal, respectively, than they gained through it.

Figure 4

FBS Transfer Portal Teams Network (Blue-Chip Transfers)



Note. Node size is scaled by total-degree centrality; national champions and the bottom 10% of teams for total-degree centrality are labeled.

Table 8 further shows many of the programs that were more central to the full network saw their roles diminish when the network was restricted to blue-chip transfers. The University of Colorado, for example, dropped from first to 21st in the rankings for eigenvector centrality (x = 0.389). Likewise, Arizona State University (x =

0.422) dropped from second to 17th, University of Louisville ($x = 0.230$) from fifth to 33rd, SMU ($x = 0.232$) from 12th to 41st, and University of Houston ($x = 0.219$) from 13th to 44th. Conversely, some of the more historically reputable programs, such as the University of Alabama ($x = 1.000$) and USC ($x = 0.847$), saw their centrality rise relative to the full network when only blue-chip transfers were counted. Though not pictured in Table 8, the same trend was observed in the increased eigenvectors of the University of Georgia ($x = 0.822$) and Ohio State University ($x = 0.497$). Holistically, the density indicator ($D = 0.048$) suggested the blue-chip network contained 4.8% of all possible directed transfer connections between teams, indicating a relatively sparse structure overall and in comparison to the full network. Additionally, the assortativity coefficient ($r = -0.0004$) maintained that there was little evidence of teams with similar total-degree centralities engaging in transfers with one another, implying a near-random and slightly disassortative pattern.

Lastly, the right-hand side of Table 9 shows the team-to-team connections that involved more than two effective blue-chip transfers. The most common move was from the University of Alabama to the University of Texas ($n = 5$). The University of Alabama appeared on the list a second time for having three players leave for Florida State University. The University of Oklahoma and USC were the other two programs that appeared twice on the list as primary exporters of blue-chip talent. Even so, the network's low modularity score ($Q = 0.027$) provided minimal evidence for the existence of sub-networks within the portal's overall structure; rather, an observable trend in this list is many of the transfers occurred between programs that had exchanged coaches or coordinators (e.g., Billy Napier moving from the University of Louisiana to the University of Florida, Lincoln Riley moving from the University of Oklahoma to the University of Southern California, Sam Pittman moving from the University of Georgia to the University of Arkansas, and Steve Sarkisian moving from the University of Alabama to the University of Texas), or between schools of relatively close geographic proximity (e.g., Florida State University to Florida Atlantic University and Auburn University to Troy University).

Team-Level Descriptive Statistics

The final inspection of transfer flow through the portal involved examining which teams achieved net advantages for talent and experience. Table 10 reveals Clemson University boasted the largest net advantage relative to the average 247 ratings for its incoming vs. outgoing transfers; however, the program's in-degree centrality measure in Table 7 shows the average for its incoming transfers was calculated from a single effective transfer. After this, the University of South Alabama, Northern Illinois University, Arkansas State University, and Temple University stood as the primary beneficiaries of 247-rated talent in the portal. On the other end, San Jose State University, Jacksonville State University, Northwestern University, Ohio University, and Ball State University, on average, experienced the largest net losses. In terms of the differences in PFF ratings, Northwestern University (3.578) rose to the top of the list, finishing second only behind the University of Kentucky (5.649)

as the biggest net-gainer of PFF talent. Three other schools from autonomous conferences, Stanford University (3.384), Vanderbilt University (3.242), and the University of Kansas (3.240), rounded out the top five as net beneficiaries of PFF-rated talent.

In a microcosm of what was seen at the conference level, the average flow of experience also tended to favor the more prestigious programs. The University of Michigan, University of Oregon, University of Notre Dame, University of Alabama, and Ohio State University all ranked among the top beneficiaries for total snaps or snaps per season gained. Ultimately, it was Stanford University that again benefited the most, acquiring transfers who averaged approximately 1,136 more total snaps and 406 more snaps per season relative to those who transferred out. At the bottom of the net experience and net PFF rankings were a consistent collection of programs from non-autonomous conferences. Central Michigan University, for example, was ranked in the bottom five across all three categories, while the University of Hawaii, Sam Houston State University, and the University of South Alabama ranked in the bottom five for two of the three categories.

Table 10

Mean Transfer Portal Talent and Experience Flow across FBS Programs (2019-2024)

	μ 247 Rating				μ PFF Rating		
Program	Gained	Lost	Net	Program	Gained	Lost	Net
Clemson	0.960	0.888	0.072	Kentucky	65.506	59.856	5.649
South Alabama	0.828	0.776	0.052	Northwestern	63.835	60.257	3.578
N. Illinois	0.852	0.802	0.050	Stanford	65.204	61.821	3.384
Arkansas State	0.833	0.783	0.050	Vanderbilt	64.517	61.276	3.242
Temple	0.835	0.787	0.048	Kansas	63.288	60.047	3.240
Marshall	0.833	0.825	0.008	Duke	62.710	63.205	-0.495
Connecticut	0.830	0.822	0.007	Washington St.	62.435	62.957	-0.522
LSU	0.885	0.878	0.007	Northern Illinois	61.697	62.361	-0.664
Pittsburgh	0.865	0.859	0.006	Utah	62.582	63.299	-0.717
TCU	0.864	0.858	0.006	Boise State	62.651	63.398	-0.747
San Jose State	0.794	0.843	-0.049	UTSA	59.557	65.455	-5.898
Jacksonville St.	0.801	0.850	-0.049	Texas State	60.848	67.018	-6.171
Northwestern	0.817	0.871	-0.054	Sam Houston St.	62.845	69.850	-7.005
Ohio	0.787	0.847	-0.060	C. Michigan	57.398	64.520	-7.122

Ball State	0.792	0.858	-0.066	Clemson	51.759	63.164	-11.404

	μ Total Snaps				μ Snaps per Season		
Program	Gained	Lost	Net	Program	Gained	Lost	Net
Stanford	2020.00	883.83	1136.18	Stanford	658.00	252.38	405.63
Notre Dame	1313.71	421.51	892.20	Oregon	402.29	110.84	291.45
Michigan	1148.47	256.89	891.58	Michigan	378.42	97.26	281.16
Iowa	1098.08	350.38	747.70	Ohio State	334.20	106.00	228.20
Oregon	1054.97	315.30	739.67	Alabama	350.67	125.87	224.80
California	626.63	707.06	-80.42	Oregon State	205.70	226.33	-20.63
Oregon State	543.50	625.93	-82.43	Appalachian St.	142.26	163.08	-20.83
James Madison	614.06	719.00	-104.94	Georgia Tech	176.53	201.97	-25.44
Georgia Tech	503.34	608.60	-105.26	Syracuse	207.65	236.61	-28.95
Colorado State	639.61	748.23	-108.62	California	219.15	256.42	-37.27
South Alabama	417.52	1215.46	-797.95	Jacksonville St.	175.67	460.33	-284.67
Hawaii	277.20	1099.46	-822.26	South Alabama	145.18	441.00	-295.82
Georgia State	330.97	1291.91	-960.94	Hawaii	97.18	399.00	-301.82
Ball State	248.00	1238.27	-990.27	C. Michigan	74.50	392.88	-318.38
C. Michigan	171.83	1280.06	-1108.23	Sam Houston St.	135.70	653.00	-517.30

Note. Sub-tables show the five top (white), middle (gray), and lowest (black) ranked programs by the *Net* column; programs had to have at least one transfer arrive and depart to be included.

Discussion

The transfer portal has remained an enigma across much of the college sports industry throughout its early years, drawing comparisons to the "wild, wild west" and receiving criticism for altering the competitive dynamics and culture of college athletics (Corr et al., 2024; Stahl, 2024; Weaver, 2021). This study, by comprehensively and quantitatively analyzing transfer portal trends, lent clarity to the system's structure and flow. Within both the conference and team networks, the social network and descriptive analyses indicated marquee conferences and programs occupied central roles in the facilitation of FBS transfers and were, on average, net beneficiaries of transfer talent and experience; however, the findings also revealed more nuanced

patterns, including greater variability in the talent ratings of Group of Five transfers, a tendency for rare high-end transfers in certain Group of Five conferences to be concentrated within a smaller number of programs, a notable prevalence of intra-conference transfers, and evidence that certain programs prioritized higher volumes of transfers or pursued athletes characterized by updated talent metrics. Altogether, this evidence holds a variety of implications for researchers and practitioners looking to advance theory or formulate best practices in the FBS and other college revenue sports impacted by the transfer portal.

Implications for Talent Acquisition

Stemming from the pervading logic that higher-quality player inputs lead to better athletic results for FBS teams (Dumond et al., 2008; Maxcy, 2013; Pifer & Huml, 2020), the findings of this study hold direct and indirect implications for a variety of constituents across the areas of talent acquisition, competitive dynamics, team culture, and player development in high-level college sport. To start, much of the practical discussion surrounding the transfer portal in its formative years has involved coaches highlighting challenges in sustaining player depth and maintaining consistent levels of performance in a market where player mobility has increased and direct payments to athletes are now permitted (Corr et al., 2024; Stahl, 2024). This study's findings showed elite, autonomous programs—while operating as central nodes in the movement of top-tier talent across the portal—were typically net losers in both total and blue-chip transfer volume; nonetheless, they often stood as net beneficiaries when it came to the average talent and experience levels of their arriving transfers, highlighting a propensity for teams to divest from larger quantities of lower-rated players (according to 247 and PFF) while investing in smaller numbers of higher-rated reinforcements.

Seeing as programs in the autonomous Power conferences frequently lost more players to the portal than they gained, the constant cycling of depth should prompt coaches to be proactive in obtaining suitable replacements through the portal or traditional recruiting outlets. Coaches have noted a plan is needed for managing the transfer system (Corr et al., 2024; Schrotenboer, 2024), and these findings reiterate the need for strategic roster optimization and proactivity in the portal as athlete turnover persists (NCAA, 2025). This is particularly true considering the asymmetries that emerged in the flow and concentration of talent between and within the autonomous and non-autonomous leagues. Findings were consistent with a transfer network in which higher-rated players made vertical moves from non-autonomous to autonomous programs or stayed within the Power conferences. FBS programs in the more prominent conferences used the portal to more precisely consolidate and upgrade higher-end talent, while non-autonomous Group of Five members acquired higher quantities of lower-ranked talent, often from less-prestigious institutions. This places an impetus on developing a proper strategy for recruitment through the portal, especially for programs in non-autonomous leagues where the distribution of blue-chip talent was relatively unequal across teams.

So, what strategies are available to teams with fewer resources? While many programs, particularly in the autonomous conferences, seem to be relying on the depth arriving from more prominent rivals, there were some anomalies in the transfer network that hinted at more pointed acquisition strategies. Northwestern University, for example, paradoxically seemed to be at a net disadvantage for 247 ratings while boasting a net advantage in its transfers' PFF ratings. Perhaps by utilizing data analytics and looking at ratings (like the PFF ratings) that contain more current and potentially more accurate information, teams can find inefficiencies in a market traditionally dominated by player values assigned at recruitment from high school (Maxcy, 2013). Intra-conference transfers among the Power conferences also occurred quite frequently, marking a key change from the prior era when such movements were impeded (Carrier & Edelman, 2024; NCSA, 2025). The SEC, for example, saw its member programs transfer more players within the conference than to any other league. Thus, to the extent that scouting and playing against players on a more regular basis provides additional information on a transfer's ability to succeed (Pifer et al., 2021), programs might be wise to pull talent from more familiar sources.

Likewise, struggling programs forced to hire a new coach might also be able to get better more quickly by signing coaches who can bring talented transfers with them, thereby avoiding an expected year-one drop (Pifer & Huml, 2020). This study's findings offered cursory support to prior research suggesting coaching changes play a significant role in transfer decisions (Pifer et al., 2021), as the transfer connections with the highest frequency typically involved the movement of a head coach or coordinator between programs (e.g., Curt Cignetti from James Madison University to Indiana University, Rhett Lashlee from the University of Miami to SMU, Steve Sarkisian from the University of Alabama to the University of Texas, and Lincoln Riley from the University of Oklahoma to USC). Other findings showed some of the largest net beneficiaries of PFF-rated transfers were teams like the University of Kentucky, Vanderbilt University, and the University of Kansas, which have historically ranked at or near the bottom of their respective conferences. In addition to their average gains in talent being better than their average losses, all three teams effectively used the portal to acquire transfer quarterbacks (Will Levis from Pennsylvania State University, Diego Pavia from New Mexico State University, and Jason Bean from the University of North Texas) who played key roles in seasons where they finished relatively higher in the standings. Given the noted importance of the quarterback position and the belief they can help teams improve more quickly (Dohrn & Lopez, 2022; Stahl, 2024), coaches could also benefit from prioritizing transfers at more critical positions. Even with key players likely to grow more costly in the era of NIL, comparatively lower-cost investments in areas such as data analytics, tactical development, and player scouting could help less prominent programs better identify and cultivate undervalued talent. Though further investigation is warranted, smaller programs might also find higher-quality high school recruits are now more attainable and affordable than they were prior to the portal, leading to a reallocation of resources back toward traditional recruiting efforts.

Implications for Competitive Balance, Team Culture, and Athlete Development

Initially, the finding that higher-rated transfers tend to be upwardly mobile while concentrating within a relatively narrow subset of FBS programs seems to align with concerns about emerging inequalities and the persistence of pre-existing power dynamics in the NCAA's revenue sports (Cali, 2014; Pitts & Evans, 2024; Stahl, 2024). This naturally leads to concerns regarding competitive parity in the FBS as stakeholders argue a transfer portal not tethered to further regulations will decrease competitive balance, outcome uncertainty, and the team stability needed to preserve fan interest, thereby harming the overall product (Cali, 2014; Carrier & Edelman, 2024). However, this study's findings indirectly reinforce the belief that the flow of talent is largely invariant to whether players have more control over the process or receive larger shares of revenue (Coase, 1960; Pitts & Evans, 2025; Rottenberg, 1956). Though future studies will need to validate such a claim through more direct empirical tests, the same dynamics witnessed in the pre-portal era appeared to be taking shape here; that is, the more prestigious programs offering greater exposure, better athletic opportunities, and access to top coaches and facilities seemed to be the same ones operating at the center of the transfer network. These competitive implications were further underscored by the network's low assortativity, modularity, and density values; collectively, these metrics indicated players were frequently exchanged between programs of differing quality, transfer movement was widespread, and substantive exchanges of talent were limited to a relatively low number of strategically positioned programs.

Claims of the portal being harmful to competitive balance also operate under the potentially faulty assumption that parity has existed in the NCAA's revenue sports. An alternative view is these sports have been rather imbalanced for long periods of time (Peach, 2007). Even in prior historic instances where the availability of talent or athlete compensation was affected by changes like the G.I. Bill or the introduction of athletic scholarships, competitive balance in college football was largely unaffected (Salaga, 2015). Instead, what might be occurring is that which has been suggested by prior studies in the academic space and by coaches like Nick Saban in the practical realm (Cali, 2014; Juravich & Mills, 2017; Stahl, 2024); that is, programs previously ranking in the lower to middle portions of autonomous conferences might be improving by prizing away players who would have previously remained as role or depth players at bigger schools. In the old system, where access to playing talent was largely limited to high school recruits, marquee teams could stockpile talent and inhibit players with higher costs for switching programs. Now, the portal enables teams like the University of Kentucky and Vanderbilt University to sign players looking for an opportunity to showcase their skills in a new environment. To this end, the portal provides the added benefit of allowing college athletes to further develop in programs offering more suitable coaching situations, playing opportunities, and locations closer to home. Based on the prior literature, these players will likely experience boosts in their personal performances and playing time after transferring, while

simultaneously offering teams a viable alternative to traditional recruits (Dohrn & Lopez, 2022; Pifer et al., 2021).

Even so, the findings—in line with Juravich and Mills (2017)—subtly suggest the expanded labor pool could be concentrating the limited number of high-end transfers entering the Group of Five among fewer programs in those leagues. Barring a few exceptions, incoming and outgoing transfers in the non-autonomous conferences were more variable in quality relative to the autonomous conferences, where the transfers' talent ratings were less dispersed. Most non-autonomous, Group of Five conferences also experienced net gains in 3-star and lower-rated players, but net losses or minimal gains at the 4- and 5-star levels. In the rare instances when blue-chip players transferred to programs in non-autonomous conferences, the distributions were highly uneven, suggesting only a select number of programs benefited. To address the uneven distribution of high-end transfers within the Group of Five, conferences could implement talent equity initiatives, provide targeted support to programs that historically land fewer elite transfers, and advocate for greater transparency through the consistent tracking and reporting of transfer trends (e.g., annual reports on transfer movement and player ratings). In conjunction with these measures, widespread advocacy for the development and adoption of advanced scouting tools, targeted recruitment models, and player development initiatives could help ensure all FBS programs have the means to compete more efficiently and effectively.

Beyond competitive balance, the implications of transfer movements on programmatic culture and athlete development are likely to remain a topic of conversation across the industry (Corr et al., 2024; Schrotenboer, 2024; Stahl, 2024; Weaver 2021). Some concerns, such as the impacts of transferring on academic progress (Schrotenboer, 2024), are timely but outside the scope of this study. Similarly, direct financial payments for NIL were only made salient at the back end of the sampled timeframe (Pitts & Evans, 2024), meaning discussions on equitable and optimal payouts will need to be linked to future studies in this context. What this study's findings were able to reveal was that FBS athletes, perhaps not by their own choice (Weaver, 2021), were being cycled as commodities through the transfer market. This was particularly true among 3-star athletes and other fringe players who represented the most common forms of transfer capital. How coaches navigate the optics of quickly replacing players who have not immediately panned out, or of ostracizing players for simply entering the portal, remains a challenge (Corr et al., 2024; Stahl, 2024; Weaver, 2021).

To date, concern for the well-being of individual athletes has not always been a priority. As noted by one former Group of Five athletic director, "In all cases we've allowed our coaches to make that decision. In most cases, our coaches are saying, 'Once you enter that portal, see ya'" (Weaver, 2021, para. 5). Or, as Deion Sanders—who during the timeframe of this study coached a University of Colorado team with some of the highest authority and hub scores in the network—once said regarding players leaving his program through the portal, "What are we losing?" (Schrotenboer, 2024, para. 25). These mindsets capture a dynamic being witnessed at the top level wherein coaches are quick to move on to other targets once players have signaled

their intentions to leave. To this end, perhaps more of a concern should be placed on athlete-related implications amidst the rapidly changing rosters and cultures of the teams. Although this study was only able to analyze finalized, effective transfers, a high number of portal entrants appeared to have down-transferred to schools outside the FBS or been forced out of college football entirely. More information on these "forgotten" players could help inform the decisions of athletes contemplating portal entry (Schrotenboer, 2024; Weaver, 2021).

Lastly, while consistent player turnover might pose challenges to coaches wanting to instill a specific sense of culture within a team (Corr et al., 2024), these reshufflings might also allow more locker rooms to benefit from the addition of veteran players. Speaking to the human capital of transfer athletes in relation to high school recruits (Dohrn & Lopez, 2022), the former are expected to have a "maturity" factor that coaches can "lean heavily on" while using them as "voices" in the team (Pifer et al., 2021, p. 188). To some extent, and particularly as it relates to the effective transfers analyzed in this study, they have demonstrated the fortitude required to play at the FBS level. The portal also facilitates the alignment of coach and player preferences (Turcott & Pifer, 2018), an outcome that could help smooth over other difficulties as coach and player interests coalesce during the later stages of an athlete's career. Accordingly, the onus falls on both coaches and players to assess the mutual fit of a transfer in terms of its anticipated effects on team culture, tactics, and motivations that may affect future performance.

Limitations and Recommendations for Future Research

While this study contributes valuable insights into the structure and implications of intra-FBS football transfers, several limitations must be acknowledged. First, the dataset was restricted to effective transfers defined as intra-FBS transfers who appeared in at least one game for both their original and eventual programs. Although this approach ensured the observed transfers incorporated relevant measures of human capital and reflected complete pathways of player mobility for purposes of conducting the network analyses, it excluded a substantial proportion of entrants who never saw playing time after transferring. As a result, the analysis does not capture patterns among "non-effective" transfers, including players who went to non-FBS divisions or never received opportunities after entering the portal. Future studies could analyze this neglected segment of transfer athletes to provide a more complete view of transfer outcomes and attrition in the portal. In contexts where the data are accessible, forthcoming analyses could also analyze whether these same trends are observed in transfer portals outside of FBS football.

Second, although both conference and team-level networks were analyzed, the high number of teams and higher granularity in the team-level data limited some of the more micro-level implications. While this study's approach was able to identify macro-level trends across the FBS network, important intra-conference trends and variations remain open for further exploration. Notably, some programs within non-autonomous conferences (e.g., SMU through 2023) were highly active in the portal, while others remained relatively inactive. Even within some of the Power

conferences, there are instances of teams (e.g., University of Colorado) being more central to the transfer portal network than others. As such, future research could employ longitudinal, program-level models to assess institutional behaviors in the portal and their relationships to competitive balance (Juravich & Mills, 2017; Salaga, 2015), coaching turnover (Pifer & Huml, 2020), and access to NIL resources (Pitts & Evans, 2024). At the least, some of these programs could serve as viable case studies for researchers interested in the unique strategies and approaches being utilized by portal-active teams. The specific mechanisms driving these success stories, whether related to the targeting of transfer quarterbacks (Dohrn & Lopez, 2022) or the work of efficient coaches and tactical systems (Maxcy, 2013), remain open for exploration.

Third, this study does not include direct data on transfer motivations. While the structural patterns observed in the network analysis suggest coaching changes, personal opportunities, and institutional visibility may play important roles (Dumond et al., 2008; Mirabile & Witte, 2017; Nixon et al., 2021; Pitts & Evans, 2024), these inferences remain indirect. Survey-based or interview-driven research would allow scholars to assess the extent to which players are influenced by factors such as geography, NIL offers, relationships with coaches, or immediate playing time. In addition, while this study utilizes both pre-college talent indicators (i.e., 247 ratings) and more current performance metrics (i.e., PFF ratings and snap counts), it does not fully account for the role of position-specific value or team-system fit. A player with average aggregate ratings may provide disproportionate impact if they fill a critical need or occupy a high-leverage role within a particular scheme. Therefore, future research could further disaggregate transfer outcomes by player position and other factors (Dohrn & Lopez, 2022), enabling a more precise understanding of talent flow and returns on transfer investment.

Lastly, this study placed a strong emphasis on quantitative metrics such as network centrality and rating distributions that may not capture the lived experiences or adaptive strategies of players and coaches. Future research could further examine how programmatic culture (Corr et al., 2024), institutional support systems, and academic outcomes intersect with mobility patterns (Schrotenboer, 2024), particularly for athletes transitioning from lower-resource programs to higher-visibility institutions. Together, these limitations highlight opportunities for future research to generate additional insights that are applicable to college sports, the transfer portal, NIL, and more specific economic theories. By integrating additional datasets, qualitative insights, and more granular performance metrics, future scholars can develop a richer, more contextualized understanding of how the transfer portal is reshaping college football and the college-athlete experience.

Conclusion

This study analyzed 4,245 effective transfers that occurred between FBS programs during the formative years of the transfer portal with the objective of exploring (RQ1) which FBS conferences and teams were more or less influential within the transfer portal network and (RQ2) which FBS conferences and teams experienced net gains or net losses in relation to the volume, experience level, and talent level of

incoming and outgoing transfers. Social network analyses and descriptive statistics showed marquee conferences and programs were often central to the facilitation of elite talent through the transfer portal, and many of these autonomous institutions were, on average, net beneficiaries of the talent and experience being cycled through the system. While these findings generally coincide with the publicized assumptions of coaches, industry experts, and economists, more nuanced implications emerged from the findings that top transfer talent was typically less variable and less concentrated among Power Five (autonomous) programs relative to the (non-autonomous) Group of Five, intra-conference transfers were relatively prominent, and certain teams appeared to prioritize higher volumes of transfers or athletes with specific measures of talent. Going forward, researchers are invited to more precisely explore the effectiveness of teams' portal-based strategies on athletic performance, the impact of the portal on talent distribution and competitive balance, and the risks and benefits of the portal to athlete development and team culture.

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'I Think. I Play. Therefore, I Am:' How Precollege Experiences, Intersecting Identities, and College Microsystems Impact Belonging and Academic Self-Efficacy for Black Women's Basketball College Athletes at PWIs

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Abstract

Recent media attention has focused on the athletic talent displayed by National Collegiate Athletic Association (NCAA) Division I (DI) women's basketball college athletes on a national stage. Less attention has been focused on their academic experiences at the institutional level, particularly Black women's basketball college athletes (BWBCAs) playing at NCAA DI predominantly White institutions (PWIs) who leverage capital to achieve academic and athletic success while facing stereotypes and lacking support for their intersecting identities. Using the Bioecological Model of Human Development and Community Cultural Wealth as guiding frameworks, semi-structured interviews were conducted with 10 former BWBCAs to explore how their precollege experiences, intersecting identities, and relationships in their college microsystems influenced their academic self-efficacy and belonging. Findings revealed four primary influences on the BWBCAs' experiences: 1) salience of precollege academic identity, 2) hypervisibility of intersecting identities, 3) holistic interactions in BWBCAs' microsystems, and 4) coaching ethos. The findings have implications for enhancing the academic experiences of all Black women college athletes at PWIs.

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For decades, the behemoth that is National Collegiate Athletic Association (NCAA) Division I (DI) college sports has enjoyed financial success off the sweat and sacrifice of college athletes. In the profit-generating sports of NCAA football and men's basketball, most of these athletes are Black, recruited to play at predominantly White institutions (PWIs; Harper, 2018). Black women's basketball college athletes (BWBCAs) also contribute to the wealth and power of the college sports system through million-dollar media deals (Despite Growing Ratings, 2024), yet their unique experiences tend to be silenced both in the media (Carter-Francique & Richardson, 2016) and at the institutions that recruited them (Bruening et al., 2005).

The college sports system has set a low bar for Black athletes, leading to a lack of support for their academic success and college outcomes (Rubin, 2016). Although BWBCAs achieve academically in college, they face multiple barriers to their holistic development and successful academic outcomes because of their intersecting identities (Bernhard, 2014; Carter-Francique et al., 2017; Cooper et al., 2020; Ferguson, 2023; Ofoegbu, 2025a; Simien et al., 2019). Unlike their male counterparts, BWBCAs must "contend with the dual effects of racism and sexism" (Bernhard, 2014, p. 68). Overcoming these barriers often requires support from people in their environment, such as family members, faculty, Black coaches and advisors, and teammates (Bernhard, 2014; Ofoegbu, 2025a; Ojemaye et al., 2024). These relationships can provide essential capital to help BWBCAs stand up against challenges and achieve their academic and career goals and a sense of belonging (Carter-Francique et al., 2015; Ofoegbu et al., 2022).

The purpose of this study is to use an anti-deficit lens to understand how BWBCAs' precollege experiences, intersecting identities and the relationships they develop in their microsystems at PWIs shape their academic self-efficacy and belonging through the challenges they encounter and capital they develop to persist and succeed. Understanding the macro- and micro-level influences on BWBCAs' academic experiences is essential in a commercialized sports industry that places revenue-generation and wins ahead of personal and academic development (Cooper et al., 2017b; Ojemaye et al., 2024). Scant research has examined the impact of college sports participation on the BWBCA population (Bernhard, 2014; Cooper et al., 2020). Therefore, the literature review reflects the experiences of the broader Black women college athlete (BWCA) population by exploring their precollege experiences, academic experiences, intersecting identities, sense of belonging, relationships in their microsystems, and the commercialization of college sports. The current study contributes to existing research by understanding the influence of salient identities and experiences before college on academic self-efficacy and belonging of BWBCAs through an anti-deficit lens. The study seeks to answer the following research questions about former BWBCAs at PWIs:

R1: How do BWBCAs' precollege experiences, intersecting identities and relationships in their microsystems shape their academic self-efficacy and belonging?

R2: How do BWBCAs leverage cultural wealth to succeed academically?

Literature Review

Precollege Experiences

The BWCA college experience often hinges on the gendered socialization process that occurs during childhood, as young Black women are encouraged by families and their communities to develop their academic identities (Cooper et al., 2016, 2017b) more so than Black males, who are pushed to develop their athletic identities by the media, Black culture, and their communities (Howe, 2020). However, the families of Black women also value athletic participation for its social development and educational opportunities more highly than families of White women (Hanks, 1979).

The salience of their academic and athletic identities can cause BWCAs to pursue different goals when choosing where to attend college, as some are driven by their desire for cultural and racial belonging to attend a historically Black college or university (HBCU; Cooper & Newton, 2021); others are encouraged to use athletic skill to earn a scholarship at a PWI (Cooper & Jackson, 2019); some are motivated by their desire to be the first in their family to earn a college degree (Carter-Francique et al., 2015; Sato et al., 2017); and others pursue institutions that can meet their high academic expectations (Cooper et al., 2016, 2017b, 2020). When BWCAs possess salient athletic identities that dictate their decisions for attending college, they have diminished expectations for their educational outcomes (Cooper & Jackson, 2019) that are further suppressed by the institutions that recruit them (Rubin, 2016). Lower academic expectations are more pronounced for BWCAs in NCAA DI high-profile sports like women's basketball (Cooper et al., 2020). Black women college athletes' precollege experiences provide them with familial, navigational, and aspirational capital to guide their decisions related to their pursuit of a college degree (Carter-Francique et al., 2015; Cooper et al., 2017b; Ofoegbu et al., 2022).

Academic Experiences

Black women college athletes attend college with varying levels of academic preparation, as some are recruited from underserved high schools, leaving them underprepared for the academic rigor of the PWI and requiring more academic support (Sato et al., 2017; Sellers et al., 1997). Other BWCAs feel academically prepared for college because of challenging high school experiences that give them the necessary academic skills and preparation to succeed (Cooper et al., 2016). When BWCAs are underprepared, the consistent stereotypes about their academic abilities and the cultural incongruity they experience at their PWIs result in more significant academic challenges and set them up for failure (Sato et al., 2017; Withycombe, 2011). Academic support staff exacerbate these challenges by encouraging online courses that accommodate athletic schedules even though the BWCAs prefer traditional classroom experiences (Sato et al., 2017). The lack of proper support for BWCAs negatively impacts GPAs, time-to-degree, and graduation rates when compared to their White counterparts (Cooper et al., 2020; Rubin, 2016).

Regardless of their goals before college, once BWCAs are immersed in the realities of being a student-athlete, they realize how sport participation limits other opportunities to get involved on campus (Cooper et al., 2017b; Ojemaye et al., 2024), giving them "tunnel vision" about their role in athletics (Cooper & Jackson, 2019, p. 347). Time constraints from being a DI athlete or lack of support by coaches restrict BWCAs' abilities to participate in holistic development activities such as internships (Ojemaye et al., 2024) or "to prepare herself psychosocially and cognitively for her future beyond sports" (Howard-Hamilton, 1993, p. 155). This particularly damages BWCAs with higher athletic identity salience, who may feel less motivated to invest the extra energy to succeed academically (Cooper & Jackson, 2019). However, BWCAs also gain other benefits from their athletic participation that non-athletes do not, such as higher overall satisfaction and social skills (Sellers et al., 1997). When BWCAs face stereotypes in the classroom or lack the support needed to succeed, many will leverage resistance (Ofoegbu et al., 2022) and familial capital to persist (Cooper et al, 2017b).

Intersecting Identities and Sense of Belonging

Black women college athletes' intersecting identities of athlete status, race, and gender subject them to numerous stereotypes that disregard their academic strengths and challenge their abilities to find community at a PWI (Carter-Francique, 2020; Cooper et al., 2020; Ferguson, 2023; Ojemaye et al., 2024). The intersection of race and gender cannot be overlooked when exploring BWCAs' experiences at PWIs because it helps to explain "the particular manner in which Black women are subordinated" (Crenshaw, 1989, p. 140) on the court and in the classroom. Some BWCAs feel marginalized by teammates and other athletes, struggling to find peer mentors to help them navigate the rigors of their athletic and academic schedules (Sato et al., 2017). Others experience negative interactions with faculty who hold stereotypical beliefs about their abilities, lowering their academic sense of belonging (Sato et al., 2017). Consistent encounters with gender and racial stereotypes lower belonging for some BWCAs at PWIs (Carter-Francique, 2018).

A sense of belonging is essential for college students, especially those from marginalized populations like BWCAs who possess multiple overlapping identities (Strayhorn, 2019). Although DI college athletes report a higher sense of belonging than non-athletes, college athletes of color and those with higher athletic identity salience feel less belonging (Gayles et al., 2018). Consistent gender and racial stereotypes negatively impact BWCAs' experiences at PWIs by being marginalized, leading to isolation and heightened anxiety (Ojemaye et al., 2024), as well as a lower sense of belonging (Carter-Francique, 2018). Being able to integrate successfully into the university positively impacts their academic performance, yet BWCAs often face hostile campus climates (Cooper et al., 2020; Sellers et al., 1997). When they feel isolated at their PWIs, BWCAs may rely on head coaches or academic advisors for support (Carter-Francique, 2014).

Despite facing numerous challenges because of their identities, some BWCAs find belonging among their teammates and show persistence to succeed athletically

and academically (Withycombe, 2011). Institutions can foster a sense of belonging and empower BWCAs to succeed by hiring Black women administrators who share the BWCAs' identities (Ojemaye et al., 2024) and creating an inclusive culture that supports their academic, identity, and career development (Carter-Francique, 2018). Providing access to counter spaces such as affinity groups or Black fraternities can help develop BWCAs at PWIs and give them a sense of community outside of athletics (Carter-Francique, 2014). Sister circles also provide a space for BWCAs to challenge oppressive environments and find support from same-race peers at PWIs by discussing sensitive issues that are relevant to their experiences (Ferguson, 2023). These spaces become a source of navigational, social, and resistance capital that help BWCAs persist through challenges and succeed when faced with oppression (Yosso, 2005).

Relationships in BWCAs' Microsystems

Black women college athletes comprise only 6% of all athletes at DI institutions (NCAA demographics database, n.d.), so their successful outcomes at PWIs may depend on people in their microsystems to help them find community by supporting their racial identity (Bernhard, 2014; Ojemaye et al., 2024). The head coach serves as one of the critical systems in the BWCA experience (Bruening et al., 2005; Carter & Hart, 2010) due to the relationships fostered through the recruitment process and the more than 40 hours per week that athletes devote to their sport (Comeaux, 2018). Coaches may act as mentors who support BWCAs' holistic development, or they may use their power to hinder their academic development through control, microaggressions, and favoritism toward White players (Ofoegbu, 2025a). When BWCAs are not supported by their coaches, they feel their voices are silenced (Bruening et al., 2005), leading to isolation and anxiety, even among their own teams (Ojemaye et al., 2024).

Getting BWCAs to commit to a PWI is sometimes the job of a Black assistant coach, who is often the only Black coach on the staff (Bernhard, 2014). Black women college athletes will look to their Black assistant coaches for guidance because they feel they are more invested in their athletic and academic success than their White head coaches (Ofoegbu, 2025a). Having Black coaches or academic advisors who understand BWCAs' unique experiences (Carter & Hart, 2010), care about their non-athletic interests, and encourage them to pursue their long-term academic and career goals contributes to BWCAs' cultural and academic development (Ofoegbu, 2022; Ojemaye et al., 2024). However, despite BWCAs comprising more than 43% of women's basketball teams, less than 12% of head basketball coaches are Black women (Simien et al., 2019). Even if BWCAs do not develop relationships with their Black coaches, they desire more diversity on their coaching staff because they find comfort in seeing people who look like them (Bernhard, 2014; Ojemaye et al., 2024).

Black women college athletes at PWIs can achieve academic self-efficacy, the belief they can succeed in the classroom (Bandura, 1977), by developing nurturing relationships with faculty (Carter-Francique et al., 2015; Sato et al., 2017), academic advisors (Ofoegbu, 2022), and mentors (Bimper, 2017) who are interested in devel-

oping their potential outside of athletics (Ofoegbu et al., 2022). When professors empathize with BWCAs' athletic schedules and invest in their academic success, it positively influences their academic experience (Carter-Francique et al., 2015). Some athletic programs encourage BWCAs to interact with faculty, which helps them develop social capital (Cooper et al., 2017b). Mentoring programs can contribute to successful academic and career outcomes by empowering BWCAs to self-advocate, instilling self-confidence, providing social capital (Bimper, 2017), and matching them with people who understand their unique needs related to their intersecting identities (Carter & Hart, 2010). Although they benefit from Black faculty and staff mentors, a lack of diversity at PWIs makes it challenging for BWCAs to get the development they deserve (Carter-Francique, 2014). However, research highlights how BWCAs leverage various forms of capital to achieve positive academic outcomes within environments where they may feel marginalized (Cooper et al., 2017b).

Commercialization of College Sports

To understand the experiences of DI athletes, it is essential to explore the complexities of the college sports system within which they compete. Division I conferences are the most competitive and lucrative of the three divisions in the NCAA, earning almost $18 billion in 2022 (Division I Athletics Finances, 2023). College sports' commercial appeal has led to billion-dollar media deals to broadcast the men's basketball tournament (NCAA Record*s*, 2024) and $115 million in annual revenue for the women's basketball tournament (Despite Growing Ratings, 2024). Until recently, NCAA amateurism policies restricted athletes from receiving the revenue they generated from their athletic performance, so all the profits went to conferences, institutions, and coaching salaries (Southall & Weiler, 2014), with DI coaches earning $3.5 billion in 2022 (Division I Athletics Finances, 2023).

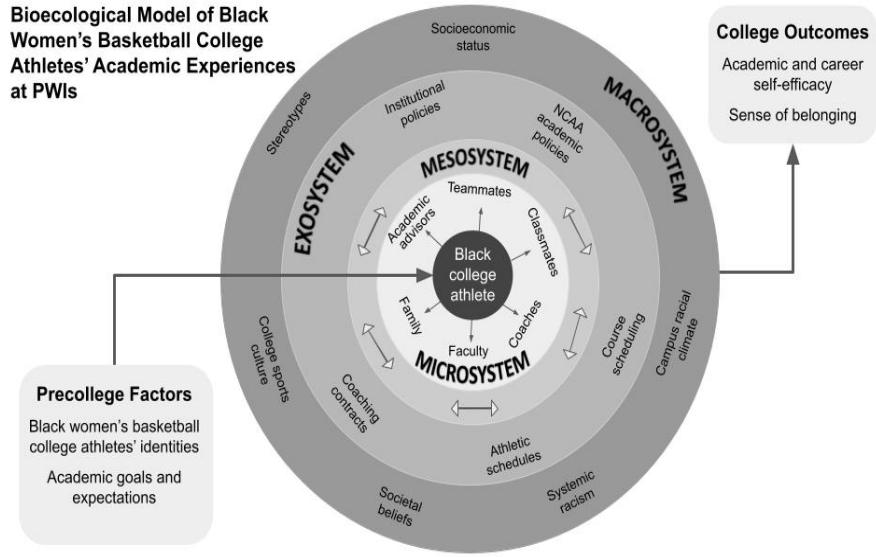
The DI sports culture has been criticized for committing a "moral injury" by exploiting college athletes for their athletic skills, particularly because most athletes on the profit-generating teams of basketball and football are Black (The Drake Group, 2021, p. 54). Black women college athletes experience racial discrimination like their male counterparts, but they also experience sexism, harassment, assault, and unequal treatment related to their intersecting gender and racial identities, which impact mental health (The Drake Group, 2021). Mental health issues are exacerbated by the pressure to balance academic and athletic schedules in an environment that emphasizes athletic success over personal goals (Ojemaye et al., 2024). The revenue-driven goals of big-time college athletic programs grant head coaches and athletic administrators (most of whom are White) control over their recruited athletes (Ofoegbu, 2025a) by limiting their engagement in educationally purposeful activities (Comeaux, 2013). National Collegiate Athletic Association graduation rate data showing BWCAs graduate at lower rates than their White peers highlights BWCAs' challenges in achieving their academic outcomes (Rubin, 2016; Simien et al., 2019) and represents a form of "institutional neglect" (Cooper & Jackson, 2019, p. 349).

Theoretical Frameworks

To understand the academic experiences of BWBCAs at PWIs, the current study draws upon two theories: the Bioecological Model of Human Development (Bronfenbrenner & Morris, 2007) and Community Cultural Wealth (CCW; Yosso, 2005). As shown in Figure 1 and discussed in greater detail below, these theories help explain how BWBCAs' intersecting identities and precollege backgrounds influence relationships at PWIs and provide them with cultural wealth that helps them navigate and make sense of these relationships to achieve academic self-efficacy and belonging.

Figure 1

Conceptual Framework



Note: Adopted from Bronfenbrenner's (1979) Ecological Systems Theory

Bioecological Model of Human Development

Researching BWBCAs' experiences at PWIs requires understanding how different systems interact to impact their holistic development. Building off Bronfenbrenner's (1979) Ecology of Human Development theory, the revised Bioecological Model of Human Development provides a framework for understanding the development of the student-athlete through the four properties of process, person, context, and time (Bronfenbrenner & Morris, 2007). The new model deviates from the previous model by focusing more on processes than environment and highlighting the influential role person characteristics play in the ongoing interactions that take place between the person and environment. Characteristics such as race, gender, and

belief systems shape interactions in either disruptive or generative ways, ultimately impacting the person's development (Bronfenbrenner & Morris, 2007). This distinction from the previous model is vital for researching BWBCAs at PWIs because it explains how intersecting identities, such as race and gender, and belief systems before college influence interactions with faculty, coaches, teammates, classmates, athletic staff, and others in the campus community.

Ecological Systems Theory has been applied in the college sports context to understand how race influences Black athletes' perceptions of their macrosystems (Cooper et al., 2017a; Melendez, 2008) and microsystems (Cooper et al., 2017a). Black athletes perceive their campus climate less positively than White college athletes (Cooper et al., 2017a) because they experience cultural incongruity and overt acts of racism on campus and in surrounding communities (Melendez, 2008). At the microsystem level, athlete status may influence Black college athletes more positively than White college athletes concerning social interactions with different-race individuals on campus (Cooper et al., 2017a). Although the above-referenced studies focus on Black male athletes, they demonstrate the effectiveness of using Ecological Systems Theory to understand how BWBCAs navigate relationships in their microsystems.

Building off Bronfenbrenner and Morris's (2007) Bioecological Model, Ofoegbu (2025) developed a Black feminist framework of interpersonal exploitation that specifically addresses system-level impacts within college sports on BWCAs. The microsystem level encompasses the stereotypes and microaggressions many BWCAs face in their interactions with coaches, teammates, and faculty. The mesosystem reflects campus culture and athletic department practices that may dehumanize BWCAs who do not conform to cultural norms (Ofoegbu, 2025b). Black women college athletes are also subjected to gendered and racist policies at the NCAA level that exploit them for their athletic talent at PWIs, leaving them isolated and without a sense of belonging (Ofoegbu, 2025b). These policies change over time, representing the chronosystem-level impact on BWCAs' experiences (Ofoegbu, 2025b).

Community Cultural Wealth

Yosso's (2005) Community Cultural Wealth (CCW) framework draws upon Critical Race Theory (CRT) to confront implicit racism and suggests people of color possess six types of capital that help them persist and succeed when facing oppression (Yosso, 2005). Navigational capital includes succeeding within institutions not designed to support people of color, such as PWIs, and employing strategies to help them thrive within hostile racial climates (Ofoegbu et al., 2022). Students of color develop goals for their future with family members and use aspirational capital to overcome obstacles to achieve these goals and resistance capital to persist when facing oppression (Yosso, 2005). Familial capital provides the support and encouragement to persist at PWIs (Cooper et al., 2017b), while social capital provides the relationships, networks, and community resources BWCAs draw upon for support (Yosso, 2005). The last form of capital, linguistic capital, refers to the skills gained by communicating in other languages besides English (Yosso, 2005).

Research on BWCAs highlights the capital they bring to their experiences at PWIs (Carter-Francique et al., 2015; Ofoegbu et al., 2022). Navigational capital often intersects with aspirational capital to shape BWCAs' decisions about majors, career choices, and interests to explore outside athletics (Ofoegbu et al., 2022), while familial capital provides emotional and financial support (Carter-Francique et al., 2015). Some BWCAs use resistance and familial capital to help them persist when faced with adverse experiences by excelling academically to disprove stereotypes (Cooper et al., 2017b, 2020; Ofoegbu et al., 2022). Black women college athletes develop social capital at PWIs through faculty relationships (Carter-Francique et al., 2015; Comeaux & Harrison, 2007; Cooper et al, 2017b) or mentors who help them navigate cultural norms, develop beneficial relationships, and promote holistic development (Bimper, 2017).

Method

Research Design

This study uses a basic qualitative research approach to explore academic experiences and outcomes of BWBCAs at PWIs (Merriam, 2014). A basic qualitative study allows researchers to understand a phenomenon as participants interpret and construct meaning of their experiences (Merriam, 2014). Qualitative studies are distinct from quantitative studies because "the researcher is the instrument" for collecting data, whether through interviews, observation, or document analysis (Tracy, 2020, p. 19). Researchers conducting basic qualitative studies often perform inductive data analysis, whereby themes are constructed and data are constantly compared among participants, which is presented through detailed descriptions in the findings (Merriam, 2014).

Participants

Basic qualitative studies typically employ purposeful sampling because the participants need to be familiar with the topic under exploration (Merriam, 2014). We began the selection procedure by contacting people in our networks to help disseminate the study recruitment flyer. As a former sports management instructor and DI administrator, the primary researcher emailed former students and athletes about participating in the study. The second researcher is a former BWBCA whose network included other former DI basketball players.

Selection criteria included former BWBCAs who earned a college degree and played at a DI PWI. Since this study explored how BWBCAs interpret how participating in DI basketball influenced their college experience and outcomes, it was necessary to interview former BWBCAs who could reflect retrospectively on their lived experiences at PWIs. Retrospective methods can strengthen qualitative research, mainly when used with interpretivist methods (Snelgrove & Havitz, 2010). Research on the Black college athlete experience has used retrospective methods with qualitative methods to understand the participants' meaning-making behind their lived experiences and how that shaped their present-day outcomes (Hogan, 2024). We did

not specify a maximum time since graduation, so the final sample included 10 former BWBCAs aged 25-35 (see Table 1).

Table 1
Participant Demographics

Name	*Age*	*First Gen?*	*High School*	*College Major*	*Grad School?*	*Current Job*
Aliyah	27	Yes	Diverse public	Psychology	No	Law Enforcement
Kianna	35	No	Diverse public	Social Sciences	Yes	Equity Strategist
Laila	33	No	Private PWI	Labor Relations, Communication	Yes	HR Business Partner
Monique	26	No	Private PWI	Geology	Yes	EPA Contractor
Simone	27	No	Private PWI	Health and Rehab Sciences	Yes	Healthcare Consultant
Sydney	25	Yes	Diverse public	Liberal Studies	No	Professional Athlete
Thor	28	No	Private PWI	Political Science, Pre-Law	No	Paralegal Manager
Tiffany	26	No	Private PWI	Health Science	Yes	Graduate Student
TJ	25	No	Private PWI	Business and Entrepreneurship	No	Account Coordinator
Yasmin	31	Yes	Private PWI	Sociology	Yes	Professional Athlete

Data Collection

Before starting data collection, the researchers received IRB approval from the primary researcher's institution. An online demographic survey was administered to potential interview participants through Qualtrics, which asked questions about personal characteristics and athletic and academic background to confirm the participants met the study criteria. Once participants signed the online consent form, Zoom interviews were scheduled with one or both researchers present. In-depth one-on-one interviews are the most common data collection tools in qualitative research because

the verbal and nonverbal communication provides valuable insight into the meaning being constructed by the participants (Tracy, 2020).

Interviews lasted 60-75 minutes and followed an interview guide that explored how participants' identities and experiences with athletics, racial climate, and college experience influenced their academic experience at PWIs. The first set of questions explored their athletic experience, including their relationships with teammates and coaches (e.g., How would you describe your relationship with your coaches?). The second set of questions examined their academic experiences and the resources available to them (e.g., How do you feel participating in sports impacted your academics?). The next set of questions explored their college experience outside of athletics, including opportunities to participate in extracurricular activities (e.g., What was your college experience beyond athletics and the classroom?). Additional questions related to their salient identities (e.g., How did your intersecting identities impact your experiences athletically [coaches/teammates], academically, and socially?). A few questions related to their precollege experiences and goals (e.g., Did you meet your expectations when you started in college for how you were going to do academically?). A final set of questions explored the factors impacting their sense of belonging (e.g., What was your perception of the campus racial climate, and how did that affect your sense of belonging?).

Data Analysis

Data analysis in basic qualitative studies occurs simultaneously with data collection to help guide the direction of subsequent interviews (Merriam, 2014). The process starts inductively to see what information is discovered during the interviews but then becomes more deductive as researchers begin to see how to fit new data into existing categories they created (Merriam, 2014). The analytic process involves four steps: open coding, axial coding, category construction, and data sorting (Merriam, 2014). This process continues for each interview until reaching data saturation.

Before starting data analysis, we manually transcribed the interviews verbatim and shared with participants to confirm data accuracy. We then began the first analytical step of open coding, a process that involved identifying relevant words or phrases in the transcript that relate to the research questions (Merriam, 2014). Examples of codes included "favoritism," "academic support," and "stereotypes." These codes were then condensed into categories that began to give meaning to the data, a process known as axial coding (Merriam, 2014). The initial categories included "relationship with coaches," "faculty interactions," and "perception of racial climate."

Throughout data collection, we organized the codes by constructing categories or themes that represented patterns in the data (Merriam, 2014). As we progressed through data collection, we began to think deductively about how new information fit into the categories or buckets we created, often necessitating creating new categories or condensing others. This process led to the final analytical step of sorting the categories and data to identify commonalities and outliers relating to the BWBCAs' academic experiences and outcomes. After re-reading transcripts and sorting through codes, we constructed a final set of categories or themes that became our summary

of findings. We shared a summary of the common themes with the participants to ensure they accurately interpreted their experiences. The final themes are presented below.

Positionality

Since qualitative researchers are intimately involved in data collection, they must acknowledge potential biases or assumptions they bring to their research because of identities, backgrounds, and theoretical orientation (Merriam, 2014). The primary researcher is a middle-aged, White woman who was a PhD student at the time of data collection. She never played DI basketball, so she could not relate to the BWBCAs' experiences of playing at a PWI as athletes of color. However, as a former DI compliance coordinator and sports administration instructor, the primary researcher could empathize with the BWBCAs. Her positionality as a White woman conducting research on BWBCAs informed the type of research study and the methods used in the research.

To acknowledge potential biases from her background teaching BWBCAs, the primary researcher adopted an interpretive research paradigm that allowed her to display empathy for the BWBCAs by giving them the space to share their lived experiences without judgment, and then socially constructing an interpretation of their subjective experiences (Tracy, 2020). This paradigm aligns with the basic qualitative study that seeks to understand how participants construct meaning of their experiences (Merriam, 2014). It was essential to practice reflexivity throughout the process to check for potential biases in the research questions, interviews, and data analysis (Tracy, 2020). Reflexivity involved being transparent not only about researcher positionality but also the reasons for the specific sample selection that included BWBCAs, the steps used in data collection, and a detailed explanation of how the data were interpreted in the findings and discussion.

The second researcher is a former BWBCA who could identify with the participants' lived experiences because she also played at a PWI and was close in age to most participants. Her shared background allowed the researchers to develop rapport with the participants during the interviews. Additionally, her experience as a BWBCA provided valuable insight that informed how the research questions were designed and the sample was selected to minimize potential biases. At the same time, she recognized sharing a background with participants could introduce assumptions about their experiences and bias in the research. This acknowledgment required her to be reflexive by taking notes during the interviews and data analysis (Tracy, 2020). She discussed these notes and her interpretation of the interviews with the primary researcher to mitigate potential bias.

Trustworthiness

Trustworthiness in qualitative research can be achieved through numerous strategies relating to reflexivity (described above), methodological rigor, researcher credibility, and paradigms (Patton, 1999). We demonstrated methodological rigor through negative case analysis in the presentation of the findings (Merriam, 2014).

This process of presenting outliers who diverged from the common themes is essential in qualitative research because it lends more credence to the original explanation of the phenomenon being studied (Merriam, 2014). A second strategy is related to analyst triangulation, which we achieved by using two researchers to collect and analyze the data (Patton, 1999). Member checks are another vital step to ensure credibility in qualitative research because they allow the participants to confirm the transcripts and interpretations of the transcripts accurately reflect their experiences (Merriam, 2014). We emailed the participants a copy of the interview transcript immediately after the interview and received a confirmation email from all of them that the transcripts were accurate. After completing data analysis, we emailed a summary of findings to all participants to ensure our interpretation of their meaning-making accurately reflected their own interpretations. We also utilized theory triangulation by incorporating two theories into our guiding framework. The final strategy is related to research paradigms. Having an interpretive paradigm was essential for qualitative research on BWBCAs since our philosophical beliefs and the analytical method relied on participants sharing their lived experiences.

Findings

Our study revealed four primary influences on the BWBCAs' belonging and academic self-efficacy: 1) salience of precollege academic identity, 2) hypervisibility of intersecting identities, 3) holistic interactions in BWBCAs' microsystems, and 4) coaching ethos. Each finding is represented by sub-themes that quantify participant responses and identify the outliers.

Salience of Precollege Academic Identity

Black women college athletes are socialized at a young age by their families and Black culture to develop strong academic identities (Cooper et al., 2016) while also demonstrating their strength through athletic achievement (Howard-Hamilton, 1993). The high value placed on academics gives BWBCAs familial, navigational, and aspirational capital to pursue academic opportunities that will help them achieve their goals and succeed when facing obstacles (Carter-Francique et al., 2015; Ofoegbu et al., 2022). All 10 participants were encouraged by their families to achieve athletically, and they chose academic opportunities at PWIs where they could earn a college degree on a DI basketball scholarship.

High Academic Identity Salience

Most participants ($n=6$), like TJ, Laila, Simone, Tiffany, Thor, and Monique, reported starting college with a strong academic identity because of their commitment to succeeding both athletically and academically in college. Tiffany explained the priority on academics:

> There's something to be said culturally in the Black community about what we value in young boys and young girls. I feel like girls, and you can see it, like across industries, that Black women are like outpacing Black men as

> far as like getting higher education, and it's because those are the things that are like valued and pushed and like idealized … at a young age for women, and for boys it's always like the athleticism.

These BWBCAs came from families where academic excellence was encouraged (Cooper et al., 2017b), so they used aspirational capital to choose a DI basketball institution that offered the best academic opportunity. Thor explained how she never regretted her decision academically:

> Athletically, I wasn't sure I was at the right place. Academically, I knew I was right where I belonged. I felt encouraged. … I knew that I love school and me succeeding academically and having the interactions I had, it kind of just affirmed that although athletically it may not have been what I wanted, academically it was meant to be.

The salience of the BWBCAs' academic identities influenced decisions about which institutions to attend, often conflicting with their athletic identities in college and resulting in lower-than-expected academic outcomes. The findings revealed five of the six participants with high academic identity salience did not meet their initial expectations for how they would perform academically. Simone came to college with a strong academic identity from a private high school, so she was not "too surprised by anything academically" but described basketball's impact on academics:

> It started off a little bit rough actually, because I initially went to [university] with the mindset that I was gonna do the doctorate of physical therapy program. … After I had already signed and started classes, … I was told [by academic advisors] that I wouldn't be able to do that major because the time in which we would have to do like our clinical rotations and practicum, we would be in the heat of season. … That put kind of like a sour taste in my mouth immediately. And then I pivoted because I was 18 and I had time. And so I ended up finding what I really wanted to do, which was study public health.

Bronfenbrenner and Morris's (2007) Bioecological Model explains how strong belief systems about the value of an education influence BWBCAs' interactions with their environments at PWIs in positive ways that contribute to their academic development, despite facing athletic pressures that may challenge their development.

Low Academic Identity Salience

Four of the participants did not place a high priority on academics. Aliyah, Yasmin, Kianna, and Sydney entered college with low expectations because they did not have strong academic identities (Cooper et al., 2020), so their academic decisions before and during college were dictated by basketball and aspirational capital to earn a DI basketball scholarship. Kianna reflected on her decision to attend a PWI even though many HBCUs were recruiting her:

> All of my family, except for me, attended [HBCU], … but [HBCU] were also terrible at basketball at the time. I wish that their pitch would have been more about … growing you as a woman. … I wish I would have personally

> had someone around me at 16, 17, 18 who had me focus a little more on the academics.

Sydney reported her academic experience as a "roller coaster," but she was able to make it through with the help of supportive tutors. She described how aspirational capital to be "the first" motivated her to succeed despite not being a strong student:

> Growing up I was never like a school person, like I hated being in school, but I knew like I couldn't play basketball if I didn't go to school. I definitely knew, like, I was going to be the first one in my family to graduate, … first person in my school to be on scholarship. … I'm the first for a lot of things. … That really was just the goal for me.

When athletic identities are prioritized over academics, Yosso's (2005) CCW framework helps to explain how BWBCAs use aspirational capital to earn a degree. Supported by the Bioecological Model (Bronfenbrenner & Morris, 2007), these findings reflect the BWBCAs' ability to leverage the resources in their microsystems (i.e., advisors) and the social capital they gain as DI athletes to succeed in the classroom. The BWBCAs' experiences highlight their strengths in persisting and succeeding, regardless of the salience of their academic identities (Cooper et al., 2020).

Hypervisibility of Intersecting Identities

A common theme among participants was how their intersecting identities of race, gender, and athlete status gave them hypervisibility at a PWI, which influenced classroom experiences, including relationships with faculty and classmates.

The Negative Impact of Intersecting Identities

Most participants ($n=8$) believed their intersecting identities negatively impacted their college experiences because of persistent stereotypes from coaches, faculty, and students about their abilities. As a first-generation BWBCA, Aliyah felt she "only fit in with the basketball team," and struggled to connect with her coaches, faculty, and classmates. Yasmin described the impact of her identities on her academic experience:

> We came to the U.S. as refugees … and we didn't really have an emphasis on education or sport. … I wish I had better rapport with my professors. I wish that I was more vocal with the things that I was going through. … I did not have a blueprint of what I was supposed to do and how I was supposed to do it. It was already a miracle that I was there.

Yasmin's statement reflected her struggles to navigate academic requirements as a transfer student without support from coaches or advisors whose "focus is to just get, make sure everyone's eligible." Her experience also reflects a broader challenge facing BWBCAs trying to navigate ethnic and cultural differences in addition to their racial, gender, and athletic identities. As first-generation college athletes, Aliyah and Yasmin struggled to develop their academic identities in an environment that prioritized athletics over academics, but their aspirational and familial capital helped them persist and achieve their goal of getting a college degree.

Tiffany used familial, navigational, and aspirational capital to maneuver the challenging experience of being a DI athlete and a pre-med student at a PWI. However, she recalled how her identity as a BWBCA made it challenging for her to develop social capital in the classroom:

> I had a really hard time making friends outside of sports. … in some of my, like, classes in my major, people have, like that idea of like, 'oh, like the athletes are just getting by, like they're not really paying attention, they're getting easy a's' … There was the bias. … Some of the athletes were like that … I've been in class with some of the hockey guys, and yeah, some of them are like that, but I don't know, and I guess like if that's their experience, it's hard to be like, you can't make that judgment, but it's still frustrating to be on the other side of it.

Although she was pre-med and had a strong academic identity, Tiffany faced gendered academic stereotypes because of her athlete status since classmates attributed the "dumb jock" stereotype to male athletes at her school. Despite negative experiences with their intersecting identities, all the participants earned their college degrees by leveraging aspirational and other forms of capital (Yosso, 2005), even if it required transferring to a different school to get the support they needed.

The Positive Impact of Intersecting Identities

Only two participants believed their intersecting identities benefited their social and academic experiences. Thor explained:

> I think it made it more fun. Okay. I mean, like being a Black female, first off, my opinion, it was easier than being Black male on campus. … I think the Black males are trying to like earn the White guys' respect a lot of times, you see, whereas, especially me being like a Black female lesbian athlete, White girls thought I was so cool. The White guys thought I was so cool, and then like the Black people, girls, guys, thought I was cool. And so I think that kind of like worked to my advantage in a sense, because they didn't really know how to categorize me.

Thor's comment reflected her belief system about fitting in with different groups on campus. Combined with her precollege experience attending a predominantly White private school, these factors influenced her interactions in positive ways to develop social capital, as supported by the Bioecological Model (Bronfenbrenner & Morris, 2007). Laila got support from faculty and peers because she was invested academically. She described why she was treated differently than other athletes who shared her intersecting identities:

> When it comes to being a Black female athlete in college, there are either two types of stereotypes you will get: 1) you are just athletic and we need to make sure that you're eligible academically, or 2) you have talent and you meet the academic criteria of the university so we don't have much to worry about. For me, I was seen as a leader, someone who didn't get into any trouble, and someone who coaches and administrators didn't have to worry about.

The Bioecological Model (Bronfenbrenner & Morris, 2007) and CCW (Yosso, 2005) demonstrate how intersecting identities helped some BWBCAs develop social capital through positive relationships with faculty and classmates in their microsystems. However, most participants struggled to foster those academic interactions because of their identities as BWBCAs, so they leveraged other forms of cultural wealth, such as navigational, aspirational, and familial capital, to maneuver through their academic environments (Yosso, 2005). Even though all the participants earned their degree, not all of them achieved academic self-efficacy. Only those with higher academic identities or opportunities for holistic development were able to achieve self-efficacy in the classroom.

Holistic Interactions in BWBCAs' Microsystems

Academic self-efficacy depends on relationships BWBCAs create with people who are invested in their development beyond athletics (Carter-Francique et al., 2015; Cooper & Hall, 2016; Ofoegbu, 2022), which often leads to a greater sense of belonging (Carter-Francique, 2018, 2020). The third theme discusses how BWBCAs' microsystems influence their academic self-efficacy and belonging.

Opportunities for Holistic Development

The findings revealed some participants (*n=5*) achieved academic self-efficacy through holistic relationships with faculty, advisors, and assistant coaches. Although some BWBCAs seek mentorship from Black faculty and staff (Carter-Francique, 2014), a few participants (*n=3*) developed relationships with White mentors. Thor described her transformative experience doing an internship with a law professor, who was White:

> I want to be just like him. And so I really loved his class. … He gave me my first internship at his law firm. And I think from that experience … I think my whole outlook had changed because I realized I love legal work.

Monique recalled the support and mentorship she found doing research with a White professor in the geology department:

> The chair of the geology department … was really supportive and encouraging of me and used that year to, to help mentor me. … I definitely lucked out in terms of the sense of community I found in the geology department, and that did spill over into other areas.

Kianna's White assistant coach was transformative regarding her academic experience. She recalled how he challenged her academically, connected her with faculty on campus, and gave her the confidence to believe she could excel, resulting in an academic sense of belonging:

> He's the one who took the time to teach me soft skills, things like time management, organizational skills, how to prioritize, you know, my work. … We started to see some progress and then he started to challenge me to do, to do things that I never considered academically, … got me really engaged in a way that made academics less passive.

Other BWBCAs like Laila and Sydney struggled to find people at their first institutions invested in their holistic development but were fortunate to experience

supportive coaching staffs after transferring to another school who helped develop leadership skills and their non-athletic identities. All five BWBCAs who had opportunities for holistic development graduated with a sense of belonging and academic self-efficacy because they had people who cared about them as more than athletes.

No Opportunities for Holistic Development

When BWBCAs lack people in their microsystems at PWIs who support them holistically, like Yasmin, TJ, and Aliyah, they often transfer because they do not achieve academic self-efficacy and belonging. Half of the participants (*n*=*5*) transferred at least once because they received no holistic support on campus. Aliyah never received holistic support and reflected on her lack of belonging in the classroom:

> Academically, it's like a blur, you know, I really didn't take a lot of in-person classes. … I didn't feel like I belonged. … A lot of professors … they have these stereotypes about athletes a lot, especially Black athletes. … At the time, I didn't understand what I felt. But now, looking back, I know exactly how I felt. It's difficult to navigate … because it's like you walk into a room and you don't fit in, and you don't know why.

Other participants like Tiffany and Simone did not have mentors who understood their specific needs relating to their different identities (Carter & Hart, 2010), but their career goals and academic priorities motivated them to stay at their institutions. Simone believed her basketball schedule complicated her ability to develop faculty relationships. She recalled:

> I found it even difficult at times to have time to go to even office hours and things like that. And … I found it a little bit difficult to connect with faculty members who, I felt like we didn't have like a common ground, if you will, other than them being sports fans.

As Yosso's (2005) CCW framework suggests, navigational and social capital helped BWBCAs identify the people on campus who could support them holistically, enabling them to achieve self-efficacy and belonging. Other BWBCAs felt their faculty and coaches did not support their different identities outside of athletics. Without supportive relationships, BWBCAs lacked a sense of belonging, but they leveraged familial and aspirational capital to earn their degree. For some BWBCAs, the people in the microsystem they interacted most with, like their head coaches, had the power to shape the course of their academic experience.

Coaching Ethos

The final theme described how coaches influence BWBCAs' academic sense of belonging. Black women basketball college athletes' coaches may be the most impactful relationships in their microsystems because of the intense time demands of their sport (Bruening et al., 2005). The Bioecological Model (Bronfenbrenner & Morris, 2007) explains how BWBCAs' intersecting identities influence their relationships with coaches because many coaches lack the cultural awareness to support them. One of the most common themes highlights how the ethos of the BWBCAs' head coach influenced their academic development.

Coaches' Negative Impact

Most BWBCAs (*n=7*), like Simone, Tiffany, Aliyah, and Yasmin, reported their head coaches negatively impacted their academic experiences and belonging. Yasmin described one incident where her White male head coach gave her no support when a faculty member accused her of plagiarism:

> [Professor] didn't believe I wrote a paper. He thought that I plagiarized it or whatever, and I certainly didn't, and I knew all the material … and my coach did not have my back at all. … At the time, I was already seeing a sports psychologist. … I was able to be like, "oh my God, please help me. These men are saying that I'm an idiot. And no one is believing me." Yeah, so the sports psychologist was the one who ended up saving me.

Yasmin used social and resistance capital by standing up for her rights and identifying other people in her microsystem (i.e., the sports psychologist) who provided her with resources and support to help her succeed.

Participants like TJ and Sydney experienced negative interactions with their coaches unrelated to academics, but the stress affected their academic success and caused them to transfer. TJ's White male head coach sexually abused her, and the trauma from that experience caused her grades to suffer. She explained the academic and emotional impact:

> I received little to no support academically. … because I was struggling in that one class, [coaches] actually recommended me drop out of the business school … and to me that was very demoralizing … just because I was going through a rough time, and they knew the extent of why I was struggling, it just kind of further pushed academics away from me. I just felt like nobody believed in me.

TJ used resistance capital to speak up against the abuse that was inflicted on her by her head coach and aspirational capital to transfer out of a toxic environment. Like TJ, Sydney leveraged resistance capital to transfer after her negative athletic experience with her Black male head coach impacted her academics. She recalled the lack of support from her coach:

> He always told me like, you know, I got you, like, if you need anything, just let me know. … I started to struggle … and I just felt like he wasn't there for me anymore. … I had two concussions in 10 months … I completely spiraled that fall semester, because I went into like a really bad state of depression.

None of the seven BWBCAs who reported negative coaching experiences had a head coach who shared both their racial and gender identities. Some BWBCAs were subordinated by their White and male coaches in a college sports system that empowered their coaches to recruit Black athletes without supporting their intersecting identities or holistic development. When faced with oppression, the BWBCAs felt empowered to leverage their resistance capital (Yosso, 2005) to transfer or find supports at their current institution to help them succeed.

Coaches' Positive Impact

Only three BWBCAs, Monique, Thor, and Laila, described having head coaches who supported their academic goals. Laila discussed how her Black woman head coach pushed her to excel academically and become engaged in the classroom:

> I was challenged to be more than just what I was used to … pushing me to do things that I just wasn't comfortable doing … outside of athletics. It was like, "show up to your classes and make yourself known. … Sit in the first three rows ... If you know the answers, raise your hand. … Get to know them." And like, that was really important.

Monique was a star player and knew that afforded her some freedoms her teammates did not have. She described the support she received from coaches for her STEM major:

> I know that I received a lot of favoritism and flexibility in terms of … just come, come to practice after your lab or early, practice a little early, to go to your lab. … I received a lot of grace for my schedule. Yes, it did work out and they were accommodating. Um, but yeah, it wasn't that way for everybody.

When BWBCAs had coaches who valued academic performance as much as athletics, they were encouraged to foster other relationships in their microsystems to further their academic goals and achieve self-efficacy (Bronfenbrenner & Morris, 2007). The BWBCAs without coaches who supported academic identities had to rely on their cultural wealth to persist and succeed at their PWIs or use resistance capital to transfer (Yosso, 2005).

Discussion

The current study sought to understand how BWBCAs' precollege factors and intersecting identities impacted their academic self-efficacy and belonging as DI athletes at PWIs. This research contributes to existing literature in a few ways. First, it expands on prior anti-deficit research (Cooper et al., 2017b; Ofoegbu, 2025b) by using both the Bioecological Model of Human Development (Bronfenbrenner & Morris, 2007) and CCW (Yosso, 2005) to explore how BWBCAs leverage their capital within their microsystems to succeed academically. Since most studies have explored the experiences of the broader BWCA population, this study makes a contribution by centering on the experiences of the BWCAs in the high-profile sport of basketball to understand how the college sports system impacts their academic experiences through coaching behaviors. Finally, this research contributes to the literature by showing the relationship between a BWBCA's academic identity before college and their academic self-efficacy at the end of their college careers.

When BWBCAs are recruited to play at PWIs, they are encouraged to pursue opportunities that align with the goals and expectations imposed upon them through socialization processes before college (Cooper et al., 2016; Cooper et al., 2017b; Hanks, 1979). Most BWBCAs in this study entered college with strong academic identities that family and community members nurtured, a finding consistent with

prior research (Cooper et al., 2016; Cooper et al., 2017b). Many of the participants (*n=7*) were prepared for college coursework because they attended academically rigorous private primarily White high schools, which supplied them with the navigational capital necessary to succeed in college (Cooper et al., 2016). A few participants entered college with lower academic identity salience, so their college choice decisions often depended on opportunities for basketball scholarships (Cooper & Jackson, 2019) that could help them earn a college degree (Carter-Francique et al., 2015; Sato et al., 2017). The Bioecological Model (Bronfenbrenner & Morris, 2007) demonstrates how the BWBCAs' precollege experiences, such as their high school education and belief systems about academics, shaped their interactions with faculty, coaches, and advisors in college who could help them achieve their academic goals.

Intersecting identities of race, gender, first-generation status, socioeconomic status, and athlete status created barriers to academic success for most participants, regardless of their academic identity salience (Carter-Francique, 2020; Ferguson, 2023; Ojemaye et al., 2024; Sato et al., 2017). Their identities subjected them to stereotypes which were "simultaneously empowering and disempowering" (Withycombe, 2011, p. 485), impacting relationships with faculty and peers and the ways in which they used their capital to manage those interactions (Bronfenbrenner & Morris, 2007; Yosso, 2005). Some BWBCAs reported feeling marginalized by faculty and students who held racial stereotypes about their athletic and academic abilities. Rather than feel defeated, the BWBCAs felt empowered to leverage their cultural wealth (Yosso, 2005) and use resistance capital to excel in the classroom and dispel the stereotypes (Cooper et al., 2017b; Cooper et al., 2020; Ofoegbu et al., 2022). Those without strong academic identities had lower academic expectations in college (Cooper & Jackson, 2019; Cooper et al., 2020), but they also leveraged cultural wealth by using aspirational and familial capital to persist when facing obstacles since they were motivated to earn their college degree (Ofoegbu et al., 2022; Withycombe, 2011).

Half of the participants (*n=5*) reported attending college with navigational and social capital, enabling them to develop rapport with professors and classmates easily. Drawing on Yosso's (2005) CCW, TJ, Sydney, and Monique gained social and navigational capital from teammates who helped them navigate the complex academic environment for a BWBCA at a PWI. Although most of the BWBCAs in this study believed their intersecting identities exposed them to numerous academic challenges (Sato et al., 2017; Withycombe, 2011), some felt their identities positively impacted their social and academic experiences, such as relationships with faculty and classmates (Sellers et al., 1997), a finding that diverged from prior research (Ofoegbu, 2022).

Some BWBCAs (*n = 5*) had opportunities for holistic development through relationships with faculty, staff and coaches who cared about their non-athletic identities (Bernhard, 2014; Carter-Francique et al., 2015; Ofoegbu, 2022; Ojemaye et al., 2024), leading to academic self-efficacy and belonging. These BWBCAs participated in educational activities that developed their other interests, such as faculty research, internships, and leadership training, and contributed to academic self-effi-

cacy. This finding is supported by the Bioecological Framework (Bronfenbrenner & Morris, 2007) and shows how influential relationships in BWBCAs' microsystems are on their outcomes.

An interesting finding is athletic and academic identity salience was not necessarily related to the athletes' sense of belonging, which contradicted Gayles et al.'s (2018) research that found academic identity was positively correlated with higher belonging. In the current study, a sense of belonging was positively correlated with opportunities for holistic development, regardless of the salience of the BWBCAs' academic or athletic identities. For example, some BWBCAs who started college with a higher academic identity, like Tiffany and Simone, lacked people in their network who were invested in their holistic development, resulting in a lower sense of belonging. Conversely, others who started college with a higher athletic identity, like Kianna and Sydney, were fortunate to develop relationships with people in their microsystems who cared about their identities outside of basketball, contributing to a higher sense of belonging. All BWBCAs in this study (*n = 6)* with higher academic identity salience achieved academic self-efficacy, regardless of whether they had people invested in their holistic development. Only one of the BWBCAs with higher athletic identity salience achieved academic self-efficacy because she was fortunate to find people interested in supporting her holistically.

Half of the BWBCAs in this study (*n = 5*) reported academic advisors and coaches failed to support them holistically because they were only concerned with keeping them eligible (Comeaux, 2013; Howard-Hamilton, 1993; Ofoegbu, 2025a; Ojemaye et al., 2024), a finding representative of the college sports culture in the BWBCAs' macrosystems (Bronfenbrenner & Morris, 2007). When athletics are prioritized over academics by dictating BWBCAs' choice of major or requiring they take online classes, it heightens their athletic identity salience and lowers their sense of belonging (Gayles et al., 2018; Sato et al., 2017). Their experiences reflect interpersonal exploitation because of the institutional culture that did not support their different identities (Ofoegbu, 2025b). However, the BWBCAs in this study leveraged CCW (Yosso, 2005) by drawing on familial capital for support and using resistance and aspirational capital to transfer to a new institution where they could achieve academic success.

Findings from the current study revealed how influential the coaching ethos is on the BWBCAs' academic experiences (Bruening et al., 2005). This is likely because coaching contracts and athletic schedules in the BWBCAs' exosystems (Bronfenbrenner & Morris, 2007) indirectly impact the athletes by putting pressure on their coaches to win games. For some BWBCAs in this study, their head coaches supported their academic development by allowing flexibility with academic schedules, encouraging engagement in the classroom, and creating a culture that valued interactions with faculty (Cooper et al., 2017b). Other BWBCAs in this study lacked support from the head coach, who attempted to silence their voices (Bruening et al., 2005) through microaggressions, control, and favoritism towards White players (Ofoegbu, 2025a, 2025b), or restricted their involvement in meaningful development activities on campus (Comeaux, 2013). These findings represent a form of interper-

sonal exploitation (Ofoegbu, 2025b) and subordination of BWBCAs by coaches who ignore their intersecting identities (Crenshaw, 1989), leading to marginalization and isolation.

Although most BWBCAs in this study desired greater diversity in their coaching staff (Bernhard, 2014; Ojemaye et al., 2024), not all developed relationships with their Black men or women coaches. This finding diverged from prior research (Ofoegbu, 2022; Ojemaye et al., 2024), in which the BWCAs' academic success benefited from racialized support. The current study contributes to existing research by highlighting the holistic support some BWBCAs in this study found in their White coaches and faculty. This is likely due to the BWBCAs' precollege experiences at private high schools where they were exposed to a predominantly White environment, as well as their belief systems about what they expected to get from their college education. These belief systems shaped their interactions with White mentors and coaches in generative ways (Bronfenbrenner & Morris, 2007), contributing to their holistic development, academic self-efficacy, and sense of belonging.

Institutions should create inclusive environments for their BWCAs (Carter-Francique, 2018, 2020) and provide holistic opportunities that support their different identities (Bernhard, 2014; Ojemaye et al., 2024). Yet, half of the current participants did not feel valued for their non-athletic identities, leading to lower belonging and decisions to transfer. The findings reflect the realities of macrosystem-level factors, such as campus racial climate, the D1 sports culture, and stereotypes, that impact the BWBCAs' holistic development by emphasizing athletic success over their wellbeing (Bronfenbrenner & Morris, 2007). Although all BWBCAs in this study earned their degrees by leveraging various forms of cultural wealth (Yosso, 2005), the marginalization many felt at the hands of those in power like coaches and faculty represent the oppression that BWBCAs may face at PWIs (Crenshaw, 1989).

The pressures on BWBCAs to perform athletically will continue to increase in the coming years, particularly considering recent legislative changes that permit them to earn money from their Name/Image/Likeness (NIL) through external partnerships with sponsors and a college sports revenue sharing plan (The College Student, 2024). Other proposed changes to classify all college athletes as university employees (The College Student, 2024) will further heighten their athletic identities and pressure to succeed on the court, diminishing their chances for academic success. Although these changes give more power to athletes, they will likely impact BWBCAs' experiences by making relationships with coaches and institutions more transactional (The College Student, 2024).

Limitations

The current study is not without its limitations. Hearing the experiences of 10 former college athletes offered a unique window into the world of high-profile NCAA DI BWBCAs at PWIs, but their experiences are not generalizable to the entire BWCA population since this was not a quantitative study that garnered a large sample size using a random sampling. However, the findings may be transferable to BWCAs in other contexts because of the detailed participant accounts that en-

able other researchers "to determine the extent to which their situations match the research context" (Merriam, 2014, p. 229). Future research should explore the academic experiences of all BWCAs across all divisions and sports. Additionally, their retrospective accounts introduce the possibility of not recalling their experiences accurately. However, interviewing former BWBCAs was essential for understanding how their athletic participation impacted their college outcomes.

Implications

Research and Theory Implications

The findings from this study suggest that more research is needed on the academic experiences of BWBCAs. Since some participants found holistic support from White faculty and coaches, research could explore the differences in holistic support across gender and racial backgrounds of coaches by interviewing current BWBCAs. Additional research could compare college choice decisions of BWCAs in multiple sports across all NCAA divisions, as the current research was limited to DI women's basketball. For example, how does the influence of academic identity salience on college choice decisions differ for BWCAs in different sports and different divisions? The BWBCAs who participated in holistic development activities such as internships and faculty research felt a sense of belonging at their institutions. Future studies could explore the feasibility of internship programs and faculty research geared towards college athletes. One possible research question could explore the level of support for athlete-specific internship and research programs among coaches and athletic administrators and compare these findings across divisions. Because the findings highlighted how BWBCAs' intersecting identities influenced their academic experiences, a new theoretical framework should be developed to help researchers and practitioners understand how the college sport environments and BWCAs' identities shape their academic experiences and outcomes.

Practice Implications

This qualitative study makes an important contribution to the literature by allowing former BWBCAs to reflect on their academic experiences at PWIs and highlighting the strengths that helped them succeed. Since not all participants had a positive academic experience, the findings have implications for improving their academic sense of belonging and self-efficacy. Participant interviews highlighted how coaching ethos and values can shape a BWBCA's academic experience. The coaching staff must value the BWBCAs' academic goals and success as much as athletic performance by providing flexibility and support for academic and career pursuits. This includes support for mentorship opportunities by allowing BWBCAs the time to build these important relationships. Mentorship programs that connect BWBCAs with advisors and alumni who share similar backgrounds (Carter & Hart, 2010) may also work to further curate positive social and academic collegiate and post-collegiate experiences for the BWBCAs.

Similarly, hiring more coaches who reflect the BWBCAs' diversity, particularly Black women coaches, can greatly enhance their sense of belonging by offering relatable role models who understand the unique challenges this particular group may face and can foster a sense of community and support to help BWBCAs feel seen and valued (Bernhard, 2014; Ojemaye et al., 2024). Additionally, mandatory diversity, equity, and inclusion training for all staff and regular check-ins by athletic directors and campus leadership can work to address and mitigate microaggressive interactions among coaches, professors, and players, ultimately fostering a more inclusive environment. Lastly, creating dedicated spaces for BWBCAs to share their experiences may further empower this group to affirm their importance within the campus community, athletically and academically (Carter-Francique, 2014; Ferguson, 2023).

Conclusion

BWBCAs achieve the impossible by succeeding academically at PWIs that do not support their racial identities and athletically within a White-male dominated college sports system that is financially incentivized to prioritize their athletic success (Cooper & Jackson, 2019). The participants in this study used their aspirational and resistance capital to earn their college degrees (Cooper et al., 2017b; Yosso, 2005) despite systemic barriers and consistent stereotypes about their multiple intersecting identities (Carter-Francique, 2020; Ojemaye et al., 2024). They depended on people in their microsystems at their PWIs (Bronfenbrenner & Morris, 2007) to invest in their non-athletic identities, and some were fortunate to find mentors who cared about their holistic development (Bimper, 2017; Carter-Francique, 2014; Ofoegbu, 2022). On some occasions, their coaches filled that role (Bernhard, 2014; Bruening et al., 2005; Ofoegbu, 2025a), but often, the participants perceived their coaches to be barriers, leading to anxiety and lower retention (Ojemaye et al., 2024). Regardless of the support they received, the BWBCAs were motivated to earn their degree, even if it required transferring to another university with hopes for a better experience.

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Benchmarks and Boundaries: A Content Analysis of Student-Athlete Development Programs for Women

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Abstract

This study examined disparities in support structures for women's sport college athletes competing at National Collegiate Athletic Association (NCAA) Power-4 member institutions. Through qualitative content analysis, findings revealed that only 33% of institutions currently offer dedicated personal and professional development programming for women's sport athletes. Among the Power-4 conferences, the Big Ten Conference led in total programmatic support, while the Big 12 Conference showed notable gaps compared to their Power-4 conference peers. While available programmatic development programs promoted leadership, cohesion, and career transitions for women's sport athletes, and career initiatives supported transitions beyond sport, critical areas such as mental health and physical well-being remained insufficient in existent women's sport athlete development programming. The present study underscores the need for expanded inclusive programming and increased resource allocation to enhance accessibility and visibility for women's sport athlete development programming. Future research assessing programmatic effectiveness and financial investment would be valuable to inform strategies for advancing support for women's sport athletes in collegiate athletics.

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Women now comprise 43.5% of all National Collegiate Athletic Association (NCAA) athletes, a significant increase from just 28% in 1982 (Haile, 2023). While this growth reflects broader societal progress and the expansion of opportunities for women in sports, a substantial resource disparity persists between men's and women's athletics. On average, NCAA institutions allocate nearly twice as much funding to men's sports compared to women's, with Football Bowl Subdivision (FBS) schools spending up to three times more on men's sport athletes (Haile, 2023). Although federal legislation (i.e., Title IX) in the United States mandates men and women receive equal opportunities within programs receiving federal aid, the commercial enterprise surrounding collegiate athletics in the United States prioritizes predominantly men's sports (e.g., football, men's basketball), often at the expense of women's sport athletes (Collins, 2022). Despite increased attendance, fan interest, and revenue generation in women's college sport, recent alterations to the structural operation of collegiate athletics (e.g., name, image, and likeness [NIL], revenue sharing) continue to foster funding disparities within the institutional setting of collegiate athletics in the United States (Jimerson et al., 2025; Sveinson et al., 2022).

While disproportionate funding of men's and women's college sport produces competitive disparities and existential threats (Ridpath et al., 2008), inadequate funding also negatively impacts the holistic development and experience of collegiate athletes (Corr et al., 2024). College represents a formative period during which young adults navigate independence, face new challenges, assume responsibilities, and shape their identities. For competing college athletes these challenges are amplified by the demands of athletic training and elevated social standing (Corr et al., 2023; Corr & Paule-Koba, 2026). More specifically, women's sport athletes encounter a set of pressures distinct from their men's sport counterparts. These distinct pressures are partially resultant from heightened societal expectations placed on women in the United States (Wilkins et al., 2024). Accordingly, such expectations often involve conforming to traditional gender norms pertaining to behavior, appearance, and/or performance, adding additional stressors to the experience of women's sport athletes competing in NCAA athletics (Steinfeldt et al., 2011). Contrary to the experiences of men's sport athletes, women's sport athletes are frequently held to both a higher standard and subjected to double standards in how their actions are judged (Treisman, 2023). Accordingly, many women college athletes struggle with self-doubt, body image concerns, and performance anxiety (van Niekerk et al., 2023).

Beyond the individual experiences of women's sport college athletes, the structural nature of global sport and athletics further credentials men's sport, presenting additional obstacles for women's sport athletes. With the collegiate athletics system in the United States, women's sport athletes typically receive less media visibility, lower compensation (e.g., NIL, revenue sharing), and less access to professional sport pathways as compared to athletes competing in men's sport (NCAA, n.d.). As a result, many women's sport athletes develop a heightened awareness of the need for career preparedness during college. Regardless of talent or performance level, women's sport athletes often recognize that making a sustainable living through sports is significantly less likely for women as compared to men (Moiseichik et al., 2019).

In fact, Park and Williams (2022) found that women's sport athletes frequently plan for alternative career paths, placing a greater emphasis on their educational experience in college compared to men's sport athletes. At the highest level of competition within NCAA athletics (i.e., Power-4 Conference competition), the scarcity of professional sport opportunities in women's sport intensifies the urgency to identify and secure post-graduation employment among women's sport athletes.

Seemingly recognizing the unique and distinct challenges of women's sport athletes, several institutionally sponsored programmatic initiatives have been introduced to support women's sport athletes and address existing disparities. At Clemson University, POWER is an institutionally supported personal and professional development program specifically for Clemson University women's sport athletes. Founded in 2022, the program features personal leadership development seminars, professional networking opportunities, and regular trips to national and international corporations across the United States (Clemson Tigers, n.d.). Such programmatic development at the institutional level is an effective mechanism NCAA members institution can implement for the personal and professional development of women's sport athletes (Stokowski & Rubin, 2024).

Accordingly, the present study sought to conduct a content analysis of athlete development programming offered specifically for women's sport athletes. This analysis was delimited to NCAA Power-4 member institutions and aimed to explore the nature and structure of initiatives targeted to women's sport athletes while assessing their potential effectiveness. To guide the methodological approach and foundation of this manuscript, the following research questions were formulated:

1. How prevalent is women's sport athlete development programming among NCAA Power-4 member institutions?
2. Among women's sport athlete development programs, what is the functional composition of programming for personal and professional development?

By conducting this study, the researchers sought to examine the current landscape of women's sport athlete development programming and provide actionable recommendations for NCAA institutions to enhance their support systems for women's sport athletes.

Literature Review

Gender Equity and Stereotypes

NCAA (2024a) data indicates that more than 230,000 women's sport athletes currently compete in collegiate athletics, rates that are historical high with regards to women's sport participation. However, increased access and participation do not guarantee transformative change. In fact, women's sport athletes continue to face systemic discrimination and entrenched gender disparities despite NCAA mandates promoting gender equity and cultural diversity among member institutions (NCAA,

2024b; Sveinson et al., 2022). One significant challenge arises from pervasive stereotypes and stigmas, where women's sport athletes' identities often conflict with traditional gender roles, exposing them to stereotype threats which may adversely affect their perception of self and performance, both academically and athletically (Coakley, 2016; Hively & El-Alayi, 2014). These challenges are compounded by intersectional discrimination – particularly salient along racial and gender lines – pushing women's sport athletes to alter their behavior to navigate conflicting identities (Ferguson & Satterfield, 2017; Simons et al., 2007).

As sport has long been constructed as a masculine domain, casting women as *invaders* within sport settings often results in the continuous negotiation of place in an environment that upholds male privilege and patriarchal norms of physical superiority (Coakley, 2016; Hively & El-Alayi, 2014). This marginalization extends to societal expectations around femininity and body image, where women's sport athletes face a paradox between the muscularity and physical strength required for athletic success and societal perceptions of femininity, leading to psychological distress (Lunde & Gattario, 2017; Steinfeldt et al., 2011). Further complicating these dynamics are perceptions of homonormativity within women's sport. This derogatory stereotype is regularly deployed to convolute women's participation in sport by equating female athleticism with homosexuality, thereby reinforcing heteronormative social ideologies that delegitimize women's sport athletes' roles (Sartore & Cunningham, 2009; Waldron, 2016). Such representation is often subversively found in media portrayals of women's sport athletes and serves to undermine the accomplishments or capabilities of women's sport athletes.

In media representations, women's sport athletes' athletic accomplishments are also often overshadowed by emphasis on physical appearance. Such focus directs attention away from athletic competence and perpetuates gender stereotypes, further undermining the legitimacy of women's sport (Romney & Johnson, 2020; Strehlow et al., 2021; Sutton et al., 2021; Weiller-Abels et al., 2021). Despite the significant progress achieved since the enactment of Title IX in 1972, which has, notably, increased women's collegiate athletic participation by over 50% (Staurowsky et al., 2020), persistent inequalities remain.

Male coaches disproportionately occupy leadership roles in women's sport, and athletic grant-in-aid (GIA) distribution continues to fall short of proportional equity. Such examples alone are indicative of Title IX's failure to fully dismantle structural and cultural barriers that preserve male dominance in women's sport spaces (Marx et al., 2023; Stokowski et al., 2018). Resource disparities further compound these inequities, with men's sport programs consistently receiving greater funding, superior facilities, and better support services, all despite Title IX's mandates for equal treatment of men's and women's sport athletes. This systemic imbalance extends to GIAs and operational budgets, highlighting the financial challenges women's sport programs face and the substantial investments required to achieve compliance (Rubin & Lough, 2015; Staurowsky et al., 2022).

Athlete Development and Empowerment

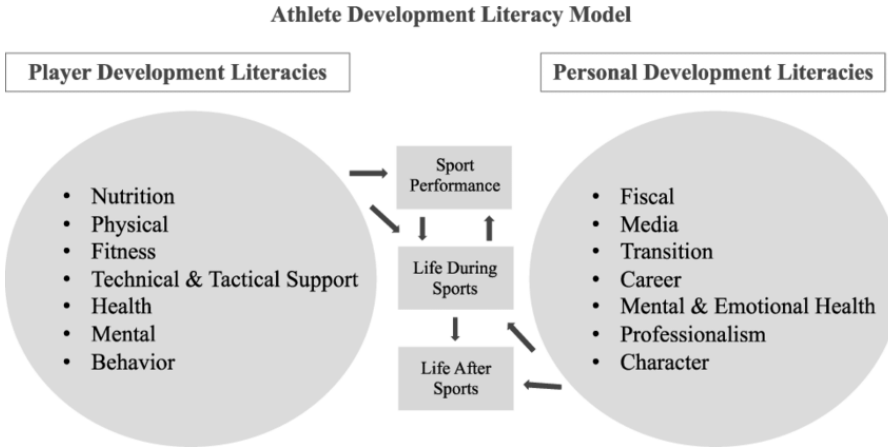
Beyond athletic performance, holistic athlete development programs address personal growth, mental health, and leadership skills. Each of these areas are supported by NCAA initiatives such as the Student-Athlete Leadership Forum and campus-based Student-Athlete Advisory Committees (Heim et al., 2022). Career development presents an additional challenge for competing college athletes, who must balance rigorous training schedules with internship and career exploration opportunities, all while confronting societal stereotypes that question their commitment to non-athletic professions (Park & Williams, 2022; Turick et al., 2019). Despite these challenges, women's sport athletes often demonstrate higher career maturity than their men's sport counterparts, recognizing limited professional athletic prospects and preparing earlier for post-athletic transitions (Moiseichik et al., 2019). Emerging platforms like Her Competitive Advantage (HCA; 2023) provide tailored support to leverage the unique skills women's sport athletes bring to the workforce. Leadership development, facilitated through NCAA programming like SAAC, empowers college athletes by fostering advocacy, personal growth, and the skills necessary to thrive beyond their athletic careers (Heim et al., 2022; O'Brien et al., 2021). While these examples of programmatic offerings exist at a macro-institutional level (i.e., the NCAA itself), institutionally supported programming among NCAA member athletic department is of much greater potential value in the personal and professional development of women's sport athletes (Stokowski & Rubin, 2024).

Athlete Development Literacy Model

The Athlete Development Literacy model (ADL) emphasizes the importance of holistic and multidimensional approaches to college athlete development. Research highlights that such programming should not only address the athletic and academic needs of college athletes, but also their personal growth, identity development, and transition to life beyond sport (see Figure 1; Stokowski et al., 2020; Stokowski & Rubin, 2024).

Within ADL, the personal development categories reflect this emphasis, capturing initiatives aimed at fostering self-awareness, confidence, and advocacy skills such as mentorship, leadership, peer collaboration, and community-building platforms (e.g., student athlete advisory committee [SAAC]). The inclusion of professionalism and career categories reflects extant research on the structural and logistical barriers athletes face in preparing for careers post-graduation, particularly due to time constraints and limited access to experiential learning opportunities (Stokowski et al., 2020). While professionalism focuses on skills, networking, and exposure to industry pathways, career initiatives are oriented towards long-term planning, goal setting, and the transition from sport to full-time employment. The financial category (i.e., *fiscal*) acknowledges the critical role that funding, scholarships, and resource allocation play in shaping the environment of opportunity for college athletes. Stokowski and Rubin (2024) assert that institutional investment is a key enabler of athlete success, making financial programming a relevant dimension in assessing the overall support landscape.

Figure 1
The Athlete Development Literacy Model (ADL; Stokowski et al., 2020)



Theoretical Framework

Empowerment theory offers a compelling lens through which to examine the development of women's sport college athletes. Rooted in the work of Rappaport (1987), empowerment is defined as a process by which individuals and communities gain greater control over their lives, develop self-efficacy, and participate meaningfully in decision-making. Empowerment theory has been widely adopted across education, psychology, and public health disciplines as a framework for promoting agency and challenging systems of marginalization (Blinde et al., 1993; Duda et al., 2017; Streetman & Heinrich, 2024). In the context of collegiate athletics, empowerment theory is particularly relevant to understand how structured programming can support the personal and professional growth of women's sport athletes who often face significant barriers compared to their male counterparts (e.g., gender stereotypes, underrepresentation in leadership positions).

Empowerment is not an automatic outcome of sport participation but emerges when athletes are placed in environments that intentionally promote agency, identity development, and leadership opportunities. Conceptual models integrating psychological empowerment theory into sport participation highlight the role of sport to empowering women when certain structural and relational conditions are met (e.g., safety, inclusivity, agency; Lim & Dixon, 2017). Accordingly, such models support the idea that empowerment arises through experiences that enhance self-determination and perceived control over one's athletic and professional journey. Similarly, women's sport college athletes who participate in intentional development programs reported increased bodily competence, self-confidence, and a more proactive life orientation, attributes that closely align with psychological empowerment (Blinde et al.,

1993; Zimmerman, 1995). Zimmerman (1995) identified the four key components of empowerment at the individual level as meaning, competence, self-determination, and impact. In sport contexts, these constructs are cultivated through programming that moves beyond skill-building to include leadership training, mentorship, identity work, and advocacy. When such elements are present, empowerment theory shifts the focus from what women's sport college athletes *lack* to what they can *contribute*, framing them as leaders and change agents within their institutions and beyond.

Athlete-centered forums – such as SAAC – women's leadership academies, and targeted mentorship programs exemplify empowerment theory in practice. These initiatives provide women's sport athletes with structured spaces to advocate for themselves, develop their leadership identities, and exercise agency. As Jolly and co-authors (2024) noted, when women athletes are engaged as active participants in their development as opposed to passive recipients of support, they build stronger professional identities and a greater sense of agency. Such programming is especially critical given the persistent challenges women face in sport. Correspondingly, empowerment theory is a valuable lens for understanding how structured support, decision-making opportunities, and identity-affirming environments can enhance women's sport college athletes' self-efficacy, leadership capacity, and holistic development. Given the value of programmatic offerings at the individual level (i.e., NCAA member institution), the present study sought to explore the prevalence of personal and professional athlete development programming for women's sport athletes at NCAA Power-4 member institutions.

Method

Research Design

This study employed a qualitative research design to promote descriptive understanding and interpretive meaning of non-numerical data (Flick, 1994). Qualitative research is particularly effective for exploring complex social issues and lived experiences, offering the flexibility and depth that standardized instruments often lack (Mezmir, 2020). It is especially well-suited for addressing questions pertaining to human behavior and/or institutional structures (Creswell & Poth, 2016). In the context of this study, qualitative methods were used to investigate the availability and structure of programming specifically designed for women's sport college athletes at NCAA Power-4 institutions.

A qualitative content analysis was conducted to systematically examine institutional websites for evidence of programming tailored to women's sport athletes. This method involved coding textual and visual content into categories in alignment with an empowerment theory framework, allowing for researchers to identify patterns, themes, and the frequency of specific elements (Neuendorf & Kumar, 2015). In addition to empowerment theory, the analysis in this study was guided by the ADL Model which underscores the need for holistic, athlete-centered programming (Stokowski et al., 2020; Stokowski & Rubin, 2024). These frameworks informed the de-

velopment of the coding structure and provided a lens through which to assess how institutional offerings addressed specific developmental needs of women athletes.

Data Collection

The primary data sources were official athletic department websites of all 67 NCAA Power-4 member institutions. Each website was systematically reviewed to identify any personal, professional, or leadership development initiatives aimed specifically at women's sport athletes. The scope of the study was intentionally delimited to Power-4 institutions, which typically have greater access to resources and more extensive online infrastructures compared to smaller or less-resourced NCAA divisions (Corr et al., 2023; Corr & Paule-Koba, 2026).

To guide the search process, the researchers established clear inclusion and exclusion criteria. Accordingly, programming was included if it was (1) explicitly designed for women's sport athletes, (2) affiliated with the athletic department, and (3) focused on personal, professional, or leadership development. Conversely, programming was excluded if it was university-wide but not sport-specific, targeted to general student populations without reference to athletes, or hosted by third-party media sites rather than the institution's official domain. Each website was reviewed by three researchers independently to ensure reliability and minimize bias. The researchers examined navigation menus, resource subpages, and relevant downloadable documents. Internal site searches were also conducted using a standardized set of search terms. The complete list of search terms used to locate relevant content can be found in Table 1.

Coding and Analysis Procedures

Once data was collected, relevant programming descriptions were entered into a spreadsheet organized by institution and athletic conference. A codebook was developed specifically for this study grounded in empowerment theory and the ADL framework. The codebook categorized programming according to five key domains: (1) access to resources, (2) skill development opportunities, (3) community and support networks, (4) advocacy and representation, and (5) career and leadership preparation. The coding process was conducted in multiple stages. During the first stage, each researcher independently coded data from half of the institutions. In this stage, each researcher coded data from the exact same institutions. In the second stage, the researchers exchanged coded datasets and conducted a peer review of the coding decisions to ensure consistency and clarity. Any discrepancies were discussed and resolved collaboratively, with iterative refinements made to the codebook as needed (Denzin & Lincoln, 2011). During this stage, the researchers did not identify any meaningful discrepancies within intra-coder decisions. After ensuring consistency across coding conducted by each of the researchers, each of the researchers coded the remainder of the institutional data.

Table 1
Formulation and Justification of Search Terms

Search Term	Justification	Supporting Citations
women student-athlete programming	Broad term to capture institutional initiatives explicitly described as serving women sport college athletes. Its generality accommodated variation in institutional terminology (e.g., women's enrichment, female athlete academy).	Sveinson et al., 2022
female athlete leadership	Reflected recurring emphasis on leadership development as a key area where women sport college athletes face disparities. Addressed programming targeted toward building leadership skills among women in sport.	Jolly et al., 2024; Smith et al., 2016
women's sport development	Frequently used in athlete development and sport policy literature to refer to holistic, gender-informed support structures encompassing training, education, and resource access for women's sport athletes.	Sveinson et al., 2022
athlete career development	Addressed the career transitions and post-sport preparation embedded in college athlete support services. Though gender-neutral in phrasing, programs can include components specifically for women sport athletes.	Smith et al., 2016
student-athlete resources	Captured institutional infrastructure related to wellness, academics, and life-skills support. Often linked to programming that broadly includes specific components for women's sport athletes.	Mezmir, 2020
NIL and women athletes	Reflected the emerging landscape of financial opportunities and concerns regarding gender equity in access and support. Helped identify institutional efforts to support women in this evolving area.	Jolly et al., 2024; Sveinson et al., 2022
athlete mentorship women	Directly connected to literature emphasizing the importance of mentorship for women's sport athletes' psychosocial and professional development. Ensured capture of gender-targeted or gender-responsive mentoring initiatives.	Jolly et al., 2024; Smith et al., 2016

Results

A review of official athletic department websites from all Power-4 institutions ($n = 67$) revealed that only 33% ($n = 22$) offered some form of programming specifically for women's sport athletes. The Big Ten Conference (Big Ten) had the highest representation, with 53% ($n = 9$) of its schools listing dedicated initiatives. The Atlantic Coast Conference (ACC) followed, with 44% ($n = 8$) of the conference's 18 member institutions offering leadership or development programs. In contrast, the Southeastern Conference (SEC) had only 25% ($n = 4$) of its 16 institutions feature such programming. The Big 12 Conference (Big 12) showed the least support, with only one institution providing publicly available information on women's sport athlete development programming. In total, just 22 of the 67 Power-4 institutions (32%) offered structured programs explicitly targeting the holistic development of their women's sport athletes.

Two major categories of women's sport athlete programs emerged from the data: (1) community-building and empowerment programs, and (2) career and academic development programs.

Community-Building and Empowerment Programs

Community-building and empowerment programs were the most prevalent type of initiative identified, represented by a total of 11 institutions. These programs aim to address the unique challenges faced by women in sport (e.g., underrepresentation, gender inequality). Their core objective is to cultivate a sense of belonging, connection, and mutual support among women's sport athletes. These initiatives often included mentorship, advocacy, leadership development, and networking opportunities designed to empower participants both within and beyond their athletic careers. In the ACC, four institutions featured such programs:

- **North Carolina State University** – *Wolfpack Women*
- **University of Miami** – *Honor Empower Rise (HER) Women's Leadership Academy*
- **Virginia Tech** – *Elevate Her*
- **Clemson University** – *POWER*

In the Big Ten, four institutions were represented:

- **The Ohio State University** – *SHEros OSU*
- **University of Iowa** – *HERkys*
- **Indiana University Bloomington** – *HER*
- **University of Nebraska** – *Student-Athlete Women's Leadership Group*

While two SEC schools offered empowerment programming:

- **University of Arkansas** – *Women Helping Others Lead and Empower (WHOLE)*
- **University of Florida** – *EmpowHER*

At the University of Miami, the *HER Women's Leadership Academy* offers competitive, high-impact programming and mentorship opportunities to foster leadership growth. Similarly, Clemson University's *POWER Women's Leadership Academy* emphasizes shared experiences and community support to cultivate empowerment and resilience among women's sport athletes. The University of Nebraska's *Student-Athlete Women's Leadership Group* offers a space for advocacy and open dialogue, enabling participants to champion the advancement of women in sports. Likewise, Indiana University Bloomington's *HER* program combines leadership development with peer connection to support personal, academic, and athletic growth. The Big Ten and ACC emerged as leaders in this area, with multiple institutions offering structured community groups for women's sport athletes. While the SEC had two such programs, the Big 12 had none, highlighting a potential gap in institutional support. These findings emphasize the role of empowerment-focused communities in meeting the holistic needs of women's sport athletes and building essential leadership skills.

Career and Academic Development Programs

A total of six institutions offered programming in the areas of career and academic development. These initiatives aim to prepare women's sport athletes for life after college, whether they pursue careers in sports or other professions. Common components include mentorship, networking events, financial literacy workshops, career planning, and internship opportunities. Many of these programs also supported academic success and help athletes navigate the dual demands of academics and athletics. Two ACC schools offered career-oriented programs:

- **Florida State University** – *Women in Sports Association (WISA)*
- **University of Louisville** – *Women of Influence*

Three Big Ten institutions were represented:

- **Pennsylvania State University** – *Teammates for Life*
- **Michigan State University** – *Women of Sparta*
- **University of Minnesota – Twin Cities** – *Women Invested in Leadership & Learning (W.I.L.L.)*

While one SEC institution offered relevant programming:

- **Auburn University** – *Women Inspiring and Nurturing Greatness in Student-Athletes (WINGS)*

Florida State University's *WISA* program provides a supportive community and professional development platform for women's sport athletes pursuing careers in the sports industry. It offers networking, mentorship, and skill-building opportunities aimed at career empowerment. Auburn University's *WINGS* program pairs women's sport athletes with experienced mentors to support career preparation, personal growth, and life beyond sport. Michigan State University's *Women of Sparta* program offers training in financial management, professional networking, and leader-

ship preparing athletes for successful transitions after graduation. The Big Ten led the way in this category, while the ACC and SEC each had two and one programs, respectively. No Big 12 institutions were represented. These findings underscore the increasing institutional focus on supporting women's sport athletes' long-term career trajectories and reinforce the need for tailored transition services that acknowledge the unique experiences of women in college athletics.

Other: Programs for Future Research

A final group composed of five institutions offered development programs related to financial support and fundraising for women's sports. Although not focused on direct personal, academic, or athletic development, these initiatives play a significant role in enhancing the broader environment and resources available to women' sport athletes. As such, they are identified as a separate category and recommended as a future research focus. Examples of these initiatives include:

- **University of North Carolina** – *FORevHER Tar Heels*
- **University of Oregon** – *Women in Flight*
- **University of Cincinnati** – *Cincinnati Women's Excellence Fund*
- **University of South Carolina** – *The Women of South Carolina*
- **University of California, Los Angeles** – *Women of Westwood*

Programs such as *FORevHER Tar Heels* and *The Women of South Carolina* focus on scholarships, facilities, and other financial support mechanisms aimed at elevating women's sport. Similarly, *Women in Flight*, the *Cincinnati Women's Excellence Fund*, and *Women of Westwood* direct resources toward facilities, recovery equipment, and programmatic enhancements. While these efforts do not fit within the scope of this study's definition of development programming, their strategic role in improving the overall women's sport athlete experience warrants further investigation, particularly regarding the efficacy and equity of financial resource allocation.

Discussion

The findings of this study reveal both meaningful progress and persistent disparities in the development of programming for women's sport athletes across NCAA Power-4 institutions. While approximately 33% of Power-4 schools offer programming specifically tailored to women's sport athletes, the majority of women's sport college athletes still lack access to such resources. Although holistic athlete development programming exists across the landscape of collegiate athletics, it typically remains underfunded at the departmental level (Corr et al., 2024, 2025). As a result, development opportunities for women's sport athletes continue to be insufficient, despite their unique and distinct experiences. These disparities reflect broader systemic inequities faced by women in collegiate athletics, underscoring the need for targeted, intentional programming that directly addresses their specific needs and experiences (Sveinson et al., 2022).

Among the identified programs, community-building and empowerment initiatives emerged as the most prevalent, with 11 institutions offering structured spaces for women's sport athletes to foster solidarity, build relationships, and share lived experiences. These findings align with existing research emphasizing the importance of mentorship, identity development, and a sense of belonging for women's sport athletes (Hively & El-Alayi, 2014; Sabin et al., 2023). Programs such as the University of Miami's HER Leadership Academy and Clemson University's POWER Women's Leadership Academy exemplify these efforts by creating environments that cultivate leadership and empowerment through shared experiences. In addition, many of these programs respond to broader social stigmas, such as the perception of women as *invaders* in traditionally male-dominated sports spaces or the pressure to conform to narrow ideals of femininity (Coakley, 2016). By fostering supportive peer networks, these programs undoubtedly assist women's sport athletes in navigating these challenges with increased confidence and resilience. As such, they reflect the value of structured programming as a proactive strategy for mitigating stereotype threat and enhancing athlete identity (Park & Williams, 2022; Rappaport, 1987).

Career and academic development programs, found at six institutions, represented the second most common program type. These initiatives were designated to support women's sport athletes as they prepare for life beyond collegiate athletics, a particularly important focus given the limited professional opportunities available to women in sport compared to men (NCAA, n.d.). Such programs emphasized skill-building, career readiness, and professional identity development through mentorship, leadership training, and financial literacy resources. For instance, Michigan State University's Women of Sparta and Auburn University's WINGS provide targeted professional preparation designed to ease the transition from athletic identity to career identity. These efforts reinforce existing literature highlighting the career barriers faced by women's sport athletes and the importance of early tailored intervention (Park & Williams, 2022). However, a significant gap identified in the findings is the lack of programming explicitly focused on athletic performance and individual athlete wellbeing. Despite literature underscoring the importance of mental health, body image, and nutritional support for women's sport athletes (Rubin & Lough, 2015; Strehlow et al., 2021), such programming was notably absent across the institutions analyzed. This omission is troubling given the well-documented challenges women's sport athletes face due to societal pressures, media sexualization, and unrealistic body standards (Cooky et al., 2015). The lack of individual wellbeing initiatives suggests that institutions are not yet adopting the holistic support models advocated in existing scholarship – a gap that the researchers deem in need of immediate attention.

Empowerment theory provides a valuable lens for interpreting the uneven landscape of women's sport athlete development programming across Power-4 institutions. As Rappaport (1987) argued, empowerment is rooted in the expansion of individuals perceived control, self-efficacy, and ability to engage meaningfully in shaping their environments. Many of the community-building programs identified in this study (e.g., HER Leadership Academy at the University of Miami, the

Student-Athlete Women's Leadership Group at the University of Nebraska) reflect these principles by fostering a sense of agency, belonging, and leadership among participants. These programs offer both support and provide structured environments in which women's sport college athletes can define their own goals, voice their experiences, and develop critical leadership competencies (Zimmerman, 1995). In this sense, the presence of community-based initiatives at select institutions demonstrates a shift away from deficit models of support toward strength-based, athlete-centered programming.

While several institutions offer strong examples of programming that align with empowerment theory, the fact that only 33% of Power-4 institutions provide any women-specific programming highlights a systemic underinvestment in women's holistic development. Empowerment is not solely about individual initiative but depends on access to structural opportunities (Zimmerman, 1995). From this perspective, the lack of programming in the Big 12 and limited offerings in the SEC reveals institutional environments that may hinder rather than enable empowerment of women's sport college athletes. Without consistent, system-level investments in leadership development, mentorship, and professional preparation, women sport athletes are left to navigate structural inequities with insufficient support.

Limitations and Future Recommendations

Several limitations were inherent in this study. Most notably, the analysis relied exclusively on publicly available information from institutional websites, which may not always be current, comprehensive, or accurate. As a result, some programs may have been overlooked or misrepresented. In addition, because the content analysis was guided by specific search terms, programming that did not include targeted keywords – particularly outdated or renamed initiatives – may have been missed during data collection.

The researchers also acknowledge the broader presence of athlete development programming at Power-4 institutions. While scholars have noted that such programming is often underfunded and deprioritized within the college athlete experience (Corr et al., 2024, 2025), it is important to recognize that the absence of women's sport-specific programming does not necessarily indicate a complete lack of athlete development opportunities. Furthermore, many leadership initiatives were designed for the general female student population, making it difficult to assess whether they adequately addressed the unique needs and experiences of women's sport athletes. While acknowledging these limitations, the researchers conducted the study within the parameters of available data.

The findings of this study underscore a pressing need for more robust, accessible, and comprehensive programming that addresses the unique challenges experienced by women's sport athletes. Despite progress in some areas, the persistent disparities ranging from underrepresentation and limited access to career development to the near absence of mental health and wellbeing support highlight the structural barriers that continue to limit women's sport athletes' full participation and holistic develop-

ment success in collegiate athletics. We posit that college athletic departments must prioritize both the development and visibility of these programs. Historical, in addition to ongoing, challenges (e.g., gendered stereotypes, funding inequities, the lack of female representation in collegiate athletics leadership positions) necessitate sustained institutional investment in initiatives that empower and support women across athletic, academic, and professional domains. These tools also offer opportunities for women's sport athletes to take on leadership roles in promoting and shaping program content, thus furthering their personal development and individual agency.

Institutional commitment must also extend beyond just visibility to include equitable funding and resource allocation. Investment in women's sport is not only a matter of equity but a strategic opportunity to foster inclusive cultures that support high performance, wellbeing, and long-term success. If implemented effectively, such efforts will help ensure that future generations of women's sport athletes inherit a more equitable and empowering athletic environment than those who came before them. In creating and expanding these initiatives, athletic departments can establish a legacy of gender equity and leadership. This study serves as a call to action for institutions to invest not only in programming but in the broader cultural shifts needed to support women in sport. Such call is especially salient with recent structural alterations to the foundation of collegiate athletics (e.g., NIL, athlete revenue sharing).

While this study effectively identified the presence and nature of programming across Power-4 institutions, it did not assess the effectiveness or impact of these initiatives. Subsequent studies should incorporate qualitative methodologies such as interviews or focus groups with program participants to evaluate whether women's sport athletes find these programs beneficial, what areas require improvement, and how effectively the initiatives address disparities identified in the literature. Further research is also warranted in the financial support for women's sport in general. While several institutions maintain fundraising-focused initiatives, the structure, equity, and impact of these programs remain unclear. Key areas for exploration include the origins and distribution of funds, the degree to which these initiatives benefit women's sport athletes relative to their men's sport peers, and institutional comparisons across demographic/psychographic variables (e.g., geographic position, political orientation, religious affiliation). Finally, greater attention must be paid to athletic conferences (e.g., Big 12) demonstrating the lowest level of women's sport athlete development programming. Research into barriers specific to these institutions can inform strategies for expanding access and developing scalable, inclusive models of women's sport athlete support.

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A Scoping Review of Intercollegiate Athlete Burnout

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Participation in intercollegiate sport can foster a range of positive individual outcomes (e.g., growth, resilience development). However, research suggests the multitude of demands intercollegiate athletes need to balance (e.g., academic and sport-specific stressors) can also increase their susceptibility to burnout, which is characterized by reduced personal accomplishment, emotional and physical exhaustion, and a sense of sport devaluation. In this scoping review, we sought to identify with whom and how burnout has been studied, as well as summarize factors that have been found to be associated with burnout. Following a systematic literature search, 29 studies were included in the review, comprising 8,022 intercollegiate athletes (55% female). These studies were predominantly quantitative and cross-sectional (n = 22) in design, conducted in the United States (n = 15), examined participants from multiple sports (n = 25), and grounded in the conceptualization by Raedeke and Smith (2001; n = 24). The range of factors associated with burnout were organized into four categories: demographic influences (e.g., participant sex, academic year), personal characteristics (e.g., perfectionism, grit), psychosocial states (e.g., motivation, emotions), and interpersonal factors (e.g., social support, coach-athlete relationships). Limitations and current gaps in understanding are highlighted, which notably includes a general inability to identify the directionality of effects between burnout and its correlates. Such gaps give way to recommendations for future research in this area of work, such as examining the unique and independent (statistical) contribution of sport-specific stressors versus other types of stressors (e.g., academic, social, financial) to burnout experiences in intercollegiate athletes. Taken together, the findings from this review could help researchers and stakeholders (e.g., applied practitioners, athletics departments) develop interventions that support performance and wellbeing for this population.

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For many athletes, competing in university athletics represents the culmination of their competitive careers, offering a unique opportunity to engage in high-level sports while pursuing higher education concurrently. This period, however, is a pivotal developmental stage characterized by significant personal transitions and novel challenges, which can lead to both growth and stress (Lopes Dos Santos et al., 2020; Madrigal & Robbins, 2020). Intercollegiate athletes face the dual demands of academic responsibilities and competitive sports, creating an arduous environment as they strive to succeed in both domains of their lives (Hwang & Choi, 2016; Rice et al., 2016). In cases when these intercollegiate athletes encounter a high level of stressors without sufficient coping resources, they risk experiencing *burnout* (Marangoni et al., 2023; Smith, 1986). Indeed, the expectations intercollegiate athletes face in balancing their athletic achievements with ever-mounting academic and social demands have inspired scholars to focus research efforts on athlete burnout specifically in intercollegiate settings (Dubuc-Charbonneau et al., 2014). The purpose of this paper is to review the research examining the experiences of burnout among intercollegiate athletes.

Gustafsson et al. (2008) described athlete burnout as a multidimensional construct shaped by a dynamic interaction of psychological, emotional, personality, and environmental factors. Within a psychosocial framework, the experience of athlete burnout is typically characterized by three core dimensions: (a) *reduced personal accomplishment*, (b) *emotional and physical exhaustion*, and (c) *a sense of sport devaluation* (Raedeke & Smith, 2001). An athlete with a reduced sense of personal accomplishment may feel their sport skills and abilities are insufficient for reaching their personal goals, whereas sport devaluation is characterized by an athlete's loss of interest in sport and lack of caring about their performance (Raedeke & Smith, 2001). The dimension of emotional and physical exhaustion draws from Smith's (1986) perspectives of burnout and stress, wherein stress contributes to burnout, in particular, emotional exhaustion. Athletes who experience burnout are characterized as having not only high emotional exhaustion, but also feeling physically drained from the intense demands of training and competition (Raedeke & Smith, 1997). However, Raedeke (1997) noted that while stress is an integral element of sport, not every athlete who experiences stress will ultimately burn out. In this way, burnout is a subjective phenomenon, as its development and impact are unique to each athlete, thus making it a complex concept to understand fully. What is clear, though, is that several psychological symptoms are associated with burnout, including chronic fatigue, amotivation, and a diminished sense of self-worth (Cresswell & Eklund, 2006; Lonsdale et al., 2009). Emotional responses, such as frustration, anger, and mood disturbances, are recognized as both symptoms and consequences of burnout (Cresswell & Eklund, 2006; Gustafsson et al., 2008). Some personality traits seem related to an increased susceptibility for burnout, such as high trait anxiety (Markati et al., 2019) and perfectionism (Gustafsson et al., 2008). Environmental factors, including external pressures, negative team climates, and inadequate support systems, also play a pivotal role in predicting burnout (Smith, 1986). Such influences are particularly relevant to this review, as universities possess a unique environment characterized by

heightened academic demands that intercollegiate athletes must navigate (Lopes Dos Santos et al., 2020). Social connections within the university environment can significantly shape athletes' experiences and determine how effectively they manage the physical and psychological stresses associated with competitive sports (Marangoni et al., 2023). Left unresolved, burnout can snowball into serious consequences, including recurrent illness and injury, diminished sports performance, and, ultimately, withdrawal from sports (Cresswell & Eklund, 2006; Gustafsson et al., 2008).

To better understand burnout in intercollegiate athletes, one can look to two broad areas of inquiry: (1) research on university student burnout; and (2) research on athlete burnout in other (non-university) settings. First, according to the American College Health Association's National College Health Assessment II Survey, many university students report experiencing average to above-average stress, with nearly 15% describing their stress levels as tremendous (Linden et al., 2018). Environmental factors (e.g., negative school climate, lack of support from teachers) and situational factors (e.g., assignment overload, insufficient academic support, low resources, and financial burdens) are linked with academic burnout (e.g., Cushman & West, 2006; Salanova et al., 2010). Second, reflecting on existing research on athlete burnout, much of this work has focused on elite youth athletes and professional athletes. Similar to research on student burnout, several environmental and situational factors can contribute to elite athletes' experiences of stress, including academic expectations, social obligations, adjusting to life away from home, and financial challenges (Lopes Dos Santos et al., 2020; Paule & Gilson, 2010). In relation to intercollegiate athletes, many stressors are compounded considering the substantial commitments required by their sports (e.g., hours of practice and training sessions, travel for competition) in addition to the demands of being a university student (e.g., hours of studying, social commitments; Lopes Dos Santos et al., 2020; López de Subijana et al., 2015; Madrigal & Robbins, 2020). Importantly, the demands faced by intercollegiate athletes often contribute to increased mental health issues, such as anxiety and depression, which can subsequently impair academic performance and impede daily functioning (Lopes Dos Santos et al., 2020; Madrigal & Robbins, 2020). Evidently, the university environment can heighten the potential for burnout, not only in the academic domain but also in the context of intercollegiate sports (Lopes Dos Santos et al., 2020).

In recent years, empirical advancements have been made in our understanding of burnout among intercollegiate athletes. Despite those contributions, no comprehensive review (to our knowledge) has synthesized the literature on how the combined role of being both a student *and* athlete at a university contributes to the development of athlete burnout in this population. As such, we sought to consolidate the empirical work on burnout amongst intercollegiate athletes, reviewing with whom (e.g., demographic considerations) and how (e.g., study design features) this area has been studied, as well as the factors that have been shown to be associated with burnout in this population. In doing so, our broad aim was to help better inform the prevention, diagnosis, and intervention strategies specific to intercollegiate athletes.

Method

A scoping review was selected to summarize the breadth of existing studies, identify knowledge gaps, and inform potential future research directions in intercollegiate athlete burnout (Sabiston et al., 2022; Tricco et al., 2016). Whereas other forms of systematic reviews adopt more rigid and confined research questions, scoping reviews enable researchers to address broader, exploratory-based research questions (Colquhoun et al., 2014). Accordingly, scoping reviews maintain a systematic approach, but the final dataset encompasses a wider range of literature, including relevant concepts, evidence, and constraints within the specific area. This scoping review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist to ensure methodological transparency (Tricco et al., 2018; see Appendix A for completed PRISMA-ScR checklist). With guidance from Sabiston et al. (2022) on scoping reviews in sport, the review was conducted in five stages: (1) identification of the research topic and questions; (2) formulation of inclusion and exclusion criteria; (3) identification of relevant studies; (4) data extraction; and (5) presentation of results. A preliminary search of SPORTDiscus, PsycInfo, PsycArticles, and PubMed revealed no completed or ongoing scoping or systematic reviews on the topic. The study protocol for this scoping review was pre-registered on Open Science Framework on September 18, 2024.[1]

Eligibility Criteria

The inclusion and exclusion criteria were determined a priori to ensure a focused and consistent approach to identifying relevant studies. First, studies needed to be original, peer-reviewed research articles. Thus, reviews, meta-analyses, book chapters, dissertations, conference abstracts, and other non-peer-reviewed materials were excluded from the analysis. Second, studies needed to be written in the English language due to resource constraints for translation. Third, study participants were required to be current university or college students participating in collegiate sports at the time of study. As such, articles focusing on non-collegiate athletes (e.g., youth, elite professional) or non-athlete populations (e.g., coaches, parents) were excluded. Articles addressing other psychological variables (e.g., stress, gratitude, grit) were excluded unless burnout was also investigated. No restrictions were placed on publication date, sport type, country of origin, research methods, or participant demographics (e.g., age, ethnicity), thereby ensuring a broad and inclusive approach.

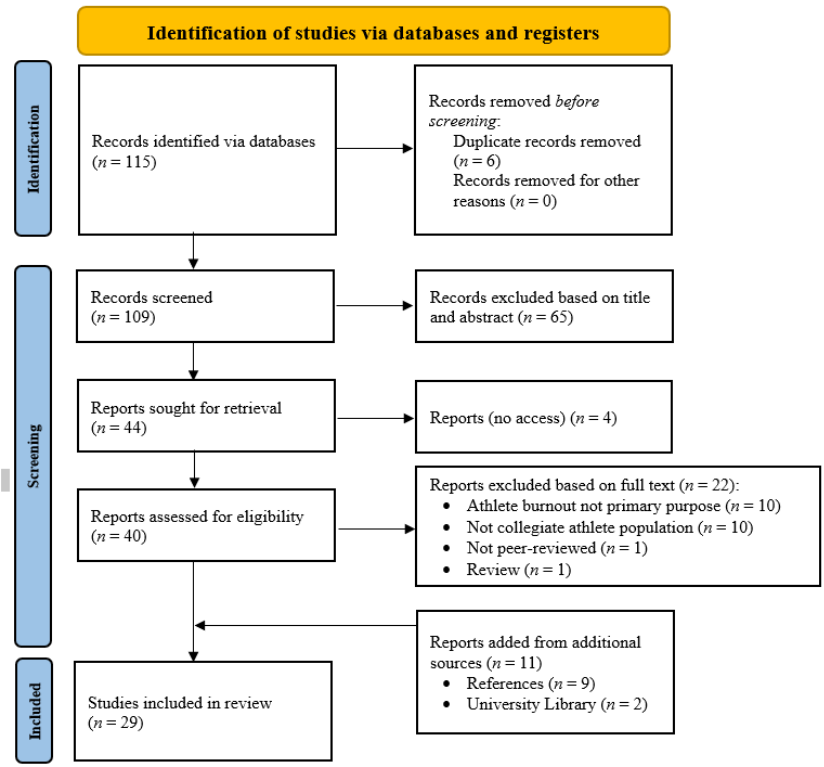
Search Strategy

To identify potential papers, the literature search began with electronic database searches. Search terms included ‘student’ AND ‘athlete’ AND ‘burnout or burnout’ AND ‘universit* or colleg*’, as well as all related search terms. The searches were conducted across four databases: SPORTDiscus, PsycInfo, PsycArticles, and PubMed. To ensure thoroughness, the reference lists of included studies were re-

viewed for additional relevant articles, and supplementary searches in Google Scholar using similar terms as well as its 'Cited By' function were conducted to identify any studies that may have been missed via database searches. This process occurred in October-November 2024 (see Figure 1 for PRISMA Flow Chart).

Figure 1

PRISMA 2020 Flow Chart Depicting the Identification, Screening, and Inclusion of Articles.



Database search results were identified and organized in Excel spreadsheets during the data selection process. After manually removing duplicates, screening proceeded in three stages: title, abstract, and full-text reviews. During the title and abstract screening, studies that very clearly did not meet the inclusion criteria (e.g., examining unrelated topics) were excluded. The remaining articles deemed potentially relevant were then subjected to a detailed full-text screening. At this stage, additional studies identified through reference list screenings of potentially relevant articles were also evaluated for inclusion.

Data Charting and Quality Assessment

Data charting was performed using Excel spreadsheets by two authors (SC, SA, or KW) for each paper following the pre-registered protocol.[1] Any discrepancies between authors during data charting were resolved through conversations with each other and the senior author (DM) until a consensus was reached. Data coding included: (1) the conceptualization(s) and measurement of athlete burnout; (2) theories or variables examined in relation to burnout; (3) research design (e.g., cross-sectional, longitudinal); and (4) study characteristics, including publication year, country, participant demographics (i.e., age, sex), type of sport(s) sampled, and summary of outcomes. Given the diversity of reported outcome variables, measures were grouped into similar themes to facilitate synthesis and reporting—these included demographic and personal characteristics, psychosocial states, and interpersonal factors (see Results section). Data charting was completed by March 2025. Consistent with guidance from Peters et al.'s (2021) suggestion that a quality appraisal tool/risk of bias assessment should not be used to compare across studies that are heterogenous in designs and outcomes, the quality of studies/risk of bias among studies included in the analysis was not examined.

Results

Search and Selection of Studies

A total of 115 studies were initially identified through electronic database searches, and was reduced to 109 after removing duplicates. Following two stages of filtering (title and abstract, full-text review), 18 studies met all inclusion and exclusion criteria for this scoping review. An additional eleven studies were included after screening reference lists, resulting in a total of 29 studies. A visualization of the study selection process, including reasons for exclusion during full-text screening, is presented in the PRISMA flow chart (Figure 1).

Study Sample Demographics

The 29 studies included in this review represented 8,022 intercollegiate athletes. Sample sizes across the studies varied widely, ranging from as few as 8 participants (Dubuc-Charbonneau & Durand-Bush, 2015) up to 618 participants (Yang et al., 2024). Study sample demographics including mean years of age, participant sex, race, and region of study are reported in Table 1. Regarding participant sex, three studies exclusively sampled female participants (Gray et al., 2023; Holden et al., 2014; Mellano et al., 2022) and one exclusively sampled male participants (Grobbelaar et al., 2011). Eleven studies reported participants' academic year, with first- and second-year students comprising 59.6% of the participant sample. One study provided details regarding participants' academic program of study (Dubuc-Charbonneau et al., 2014), and one study indicated participants were specifically part of the senior training squad (i.e., the primary group of athletes training to compete in an upcoming tournament; Grobbelaar et al., 2011).

Table 1
Demographic Variables Reported Across Study Samples

Variable		Number of Studies Reporting	%
Sex	Female	28	54.5
	Male	26	45.5
Race	White/Caucasian	10	57.9 to 92.8
	Not Reported	19	65.5
Region	United States	15	51.7
	Taiwan	6	20.7
	Canada	4	13.8
	Korea	1	3.4
	China	1	3.4
	South Africa	1	3.4
	United Kingdom	1	3.4
Number of Sports Sampled in Study	Multiple Sports	25	86.2
	Single Sport	4	13.8
Sport Type	Basketball	18	62.1
	Track and Field	17	58.6
	Volleyball	14	48.3
	Swimming and Diving	11	37.9
	Soccer	10	34.5
	Softball	10	34.5
	Tennis	9	31.0
	Baseball	8	27.6
	Football	8	27.6
	Golf	7	24.1
	Gymnastics	7	24.1
	Cross-Country	6	20.7
	Ice Hockey	5	17.2

	Rowing	4	13.8
	Wrestling	4	13.8
	Rugby	1	3.4
	Martial Arts	1	3.4
		Number of Studies Reporting	M_{Years}
Age	Years of Age	28	20
Sport Experience	Years of Sport Experience	10	9.56

Sport Context

The studies covered a wide range of individual and team sports. Most studies (n = 25; 86.2%) sampled participants from multiple sports. One study did not specify which sport(s) participants played (Howard et al., 2022), whereas another broadly indicated participants were involved in either summer or winter sports (DeFreese & Smith, 2013). The type of sports study participants engaged in and their years of sport experience are reported in Table 1. Four studies focused exclusively on a single sport: volleyball (Schellenberg et al., 2013); rugby (Grobbelaar et al., 2011); and soccer (Chiou et al., 2020; Saward et al., 2024). Garinger et al. (2018) identified their sample consisted of track and field athletes; however, they noted some athletes were considered specialized (i.e., those who solely participated in track and field), whereas others were multiple-sport athletes (i.e., played sports at university outside track and field).

Study Design

Most studies (n = 27; 93.1%) employed a quantitative approach to examine athlete burnout in the intercollegiate athlete population. Among these, 22 studies (75.9%) adopted single-time point, cross-sectional designs, whereas five (17.2%) utilized longitudinal designs. The remaining two studies (Dubuc-Charbonneau & Durand-Bush, 2015; Saward et al., 2024) adopted a mixed-methods approach, incorporating some combination of questionnaires, one-to-one interviews, and focus group discussions.

Conceptualization of Athlete Burnout

The most frequently used conceptualization of athlete burnout in this review comes from Raedeke and Smith (2001; n = 24; 82.8%). Research generally supported this conceptualization, as evidenced by the three burnout subscales consistently being correlated with one another. Four studies (13.8%) were grounded in Smith's (1986) cognitive-affective model of burnout, which posits burnout involves a psychological, emotional, and (sometimes) physical withdrawal from engagement in a previously enjoyable activity due to excessive stress or dissatisfaction. The remaining study used Pines' (1993) conceptualization, which follows an existential view

of burnout (i.e., a proposed need to believe one's life is meaningful) in (non-sport) occupational environments. Athlete burnout was primarily measured using the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001), with 27 studies (93.1%) employing this tool. The remaining two studies used either the Chinese version of the Eades Athlete Burnout Inventory (Chen et al., 2008) or the Maslach Burnout Inventory (Holden et al., 2014).

Factors Associated with Athlete Burnout

After charting the data from studies in this scoping review, the variables examined in relation to intercollegiate athlete burnout were organized into four categories. These included *demographic influences* (e.g., sex, academic year), *personal characteristics* (e.g., perfectionism, grit), *psychosocial states* (e.g., motivation, resilience), and *interpersonal factors* (e.g., social support, coaching behaviors). The number of studies examining each of these categorized factors associated with burnout are summarized in Table 2.

Table 2
Factors Associated with Athlete Burnout

Factors associated with Athlete Burnout	**Number of studies**	**%**
Demographic Variables (i.e., Sex, Academic-Related Variables, Sport Type, Injury History)	9	33.3
Personal Characteristics (i.e., Personality Traits, Affective Traits)	10	37.0
Psychosocial States (i.e., Positive Psychological Skills, Affective States, Self-Determined Motivation, Psychological Health and Well-Being, Coping)	15	55.6
Interpersonal Factors (i.e., Stress, Social Support, Coach-Athlete Relationship, Parenting Behaviors)	12	44.4

Note: Only the 27 quantitative studies are included in this table

Demographic Influences

The influence of several demographic variables on intercollegiate athlete burnout, including sex, academic variables, sport type, and injury history, was examined across 27 quantitative studies. Across all studies that explored the level of burnout based on sex ($n = 5$), female intercollegiate athletes reported higher levels of athlete burnout than their male counterparts. Researchers found significantly higher levels of emotional and physical exhaustion among female athletes, although no significant effects emerged between sex and the ABQ subdimensions of sport devaluation and reduced sense of accomplishment (Dubuc-Charbonneau et al., 2014; Giusti et al., 2022). Notably, female athletes without any type of scholarship reported the highest levels of emotional and physical exhaustion, while males without scholarships reported the lowest levels (Judge et al., 2012).

The relationship between athlete burnout and academic variables was examined across three studies (11.1%), including year of eligibility, academic year, program, and scholarship status. One study noted no significant effects of university sport eligibility, academic year, or academic program on burnout levels (Dubuc-Charbonneau et al., 2014). However, another study found athletes further along in their athletic eligibility (i.e., in their third, fourth, or fifth year of eligibility) experienced significantly higher levels of sport devaluation than first- and second-year athletes (Giusti et al., 2022). Yet, no differences were found between years of eligibility for subscales of emotional and physical exhaustion or reduced sense of accomplishment (Giusti et al., 2022). The type of scholarship (none, academic, or athletic) influenced athletes' sense of accomplishment, with non-scholarship athletes reporting reduced athletic accomplishment compared to those with athletic scholarships (Judge et al., 2012). The same study found no significant effects of scholarship amount, scholarship type, sport, and academic year on the sport devaluation subdimension.

Six studies (22.2%) explored burnout in relation to various sport influences, including sport type and injury history. The relationship between sport type and burnout was somewhat inconsistent across studies. For instance, Dubuc-Charbonneau et al. (2014) reported athletes participating in basketball and swimming demonstrated higher emotional and physical exhaustion scores compared to those involved in hockey and fencing. Additionally, athletes in hockey and volleyball reported lower sport devaluation scores than those in fencing. However, no significant differences were observed among sports with respect to the reduced sense of accomplishment subdimension. In contrast, Holden et al. (2014) found basketball and volleyball athletes exhibited the highest levels of emotional exhaustion and diminished personal accomplishment compared to athletes from cross-country, soccer, softball, tennis, and track and field. Holmberg and Sheridan (2013) noted participating in track and field predicted a greater reduced sense of accomplishment compared to athletes participating in football, basketball, swimming, baseball, softball, and tennis. The variability in these findings may be due, in part, to the fact that Dubuc-Charbonneau et al. (2014) and Holmberg and Sheridan (2013) employed the ABQ to measure athlete burnout, whereas Holden et al. (2014) utilized the MBI. Injury history also appeared relevant, as athletes with previous injuries experienced a significantly reduced sense

of accomplishment compared to those with no history of injury (Giusti et al., 2022). Similarly, Holmberg and Sheridan (2013) identified injury status as a predictor of higher levels of emotional and physical exhaustion. Although specific sport experiences and individual demographics were found to relate to intercollegiate athlete burnout, researchers have also considered the importance of various personal characteristics, such as personality, that may make certain athletes more (or less) susceptible to experiencing burnout.

Personal Characteristics

Ten of the quantitative studies (37%) investigated the relationship between burnout and intercollegiate athletes' personal characteristics, broadly focusing on personality and affective traits. Seven studies (25.9%) examined the relationship between athlete burnout and personality traits, notably perfectionism and grit. More specifically, five of these (18.5%) explored the role of perfectionism, consistently finding that maladaptive perfectionism predicted higher levels of burnout, whereas adaptive perfectionism was associated with lower burnout levels (Chen et al., 2008). While exploring the relationship between perfectionistic cognitions and burnout at two time points over a three-month period, Crowell and Madigan (2022) found higher perfectionistic concerns correlated with a reduced sense of accomplishment and emotional exhaustion at both time points. Similarly, Garinger et al. (2018) reported both direct and indirect effects (via perceived stress) of perfectionistic concerns on burnout. In contrast, Gotwals (2011) observed athletes who were identified as healthy perfectionists scored lower across all burnout subscales. Among the two studies that explored the relationship between grit and intercollegiate athlete burnout, both Howard et al. (2022) and Gray et al. (2023) observed a negative effect wherein "grittier" athletes were less likely to experience burnout.

Four studies (14.8%) explored the relationship between athlete burnout and affective traits, including gratitude and passion. Researchers found that higher levels of trait (i.e., dispositional) gratitude were predictive of lower burnout (Gabana et al., 2017; Ruser et al., 2021). In one study, Yukhymenko-Lescroart et al. (2022) found participants with lower general and sport gratitude as well as lower coach-athlete relationship perceptions exhibited higher burnout scores across all three dimensions compared to participants with high general and sport gratitude and high coach-athlete relationship perceptions. Regarding passion, Schellenberg et al. (2013) found direct and indirect (via disengagement-oriented coping strategies) effects of obsessive passion on changes in burnout, but no significant effects were found for harmonious passion.

Psychosocial States

Across 15 studies, researchers examined the relationship between burnout and psychosocial variables broadly related to positive psychological skills, affective states, self-determined motivation, psychological health and well-being, and psychological coping. Three studies (11.1%) examined the relationship between burnout and psychological skills, including state (i.e., momentary) gratitude, resilience, and

goal attainment. Ruser et al. (2021) examined the relationship between burnout and gratitude, both as a trait (as discussed previously) and as a state, where gratitude was considered a skill that can be developed. The researchers found evidence for the importance of sport-specific state gratitude in predicting lower burnout scores on all three subscales (Ruser et al., 2021). Resilience, another psychological skill, was also found to be negatively correlated with athlete burnout, and lower resilience was predictive of higher burnout across several hierarchical regression analyses (Lu et al., 2016). Further, athletes who reported lower levels of goal attainment (i.e., self-perceptions of mastery, self-improvement, and performance) were more likely to have higher levels of burnout (Schellenberg et al., 2013).

Four studies (14.8%) considered affective states, including mental energy, mood state, and competitive anxiety, in relation to athlete burnout. Chiou et al. (2020) reported athletic mental energy was negatively correlated with athlete burnout. These scholars also found that mental energy moderated the stress-burnout relationship, such that athletes with low mental energy experienced greater burnout in response to increasing sport-specific stress. In addition, studies found that all three dimensions of competitive anxiety (somatic anxiety, worry, and concentration disruption) were positively correlated with burnout. Specifically, Yang et al. (2024) found that all three dimensions of athlete burnout were related to competitive anxiety, but Cho et al. (2019) only reported correlations between competitive anxiety and physical and emotional exhaustion and sport devaluation. In line with significant correlational findings, both Cho et al. (2019) and Yang et al. (2024) found direct effects of competitive anxiety on higher overall burnout in athletes. Lastly, Grobbelaar et al. (2011) examined the relationship between athlete burnout and mood states over five months. Researchers found emotional exhaustion was the only burnout subscale to yield significant changes across time points. Vigor (i.e., enthusiasm and mental alertness) was inversely correlated with athlete burnout, while significant, positive relationships were found between burnout and the remaining five negative mood state subscales (tension, depressive mood, anger, fatigue, confusion).

Three studies (11.1%) examined the relationship between burnout and self-determined motivation. Guided by self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), researchers found athletes who reported higher levels of burnout were more likely to report lower levels of motivation (DeFreese & Smith, 2013). More specifically, Holmberg and Sheridan (2013) found all three subscales of burnout were negatively correlated with intrinsic motivation, integrated motivation, and identified regulation, and positively correlated with introjected regulation, external regulation, and amotivation. In other words, the more self-determined athletes were in their motivation, the less likely they were to experience athlete burnout (and vice versa). Lastly, Yang et al. (2024) examined the relationship between burnout and psychological needs satisfaction. The researchers found that all three subscales of burnout were negatively correlated with athlete autonomy, competence, and relatedness, with the largest effects found between needs satisfaction and emotional and physical exhaustion.

Among the studies that examined the relationship between burnout and athletes' psychological health and well-being (n = 3), athletes who reported greater well-being (DeFreese & Smith, 2014) and satisfaction with their sport (Gabana et al., 2017) were less likely to experience burnout. Further, athletes who reported higher symptoms of depression, anxiety, and stress were more likely to experience burnout, with mental health symptoms also being predictive of burnout scores (Howard et al., 2022).

Lastly, two studies (10.5%) examined the relationship between psychological coping and athlete burnout, including negative thoughts and avoidance coping. Researchers found athletes were more likely to report higher burnout when they had more negative thoughts (e.g., negative self-concept, helplessness; Chang et al., 2017). In addition, burnout was negatively associated with greater use of avoidance coping behaviors (Pacewicz et al., 2018).

Interpersonal Factors

Twelve of the quantitative studies (44.4%) examined the relationship between athlete burnout and various interpersonal variables, including stress, social support, the coach-athlete relationship, and parenting behaviors. Of the studies examining stress (sport-specific and general stress), positive correlations were found between the experience of stress and intercollegiate athlete burnout, regardless of the type of stress considered (Chang et al., 2017; Chiou et al., 2020; Chyi et al., 2018; Garinger et al., 2018). However, three of these studies measured both sport-specific stress and general stress, wherein sport-specific stress tended to be more strongly related to burnout than general stress (Chang et al., 2017; Chiou et al., 2020; Chyi et al., 2018). Only one study considered mediating and moderating effects within the stress-burnout relationship. These authors reported perceived distress partially mediated the relationship between life stress (encompassing both sport-specific and general stress) and burnout, though these effects were very small (Chyi et al., 2018). Conversely, counter-stress (defined by the authors as one's confidence in their ability to cope with challenges they encounter) was only found to moderate the relationship between general stress (but not sport-specific stress) and burnout.

The relationship between social support and athlete burnout was explored in four of the 27 quantitative studies (14.8%). Three of the studies (11.1%) examined general perceptions of social support, revealing a significant inverse relationship with burnout, where higher perceptions of social support were associated with fewer symptoms of burnout (DeFreese & Smith, 2013, 2014; Gabana et al., 2017). Within the sub-dimensions of burnout, greater social support was inversely associated with reduced sense of accomplishment and devaluation (DeFreese & Smith, 2013, 2014). A similar relationship was found between social support and exhaustion in DeFreese and Smith's 2014 study, but not their 2013 study. Perceived social support was also found to mediate the relationship between gratitude and burnout (Gabana et al., 2017). The remaining study (Lu et al., 2016) explored three specific types of social support: informational, esteem, and tangible support. All types of support

were negative predictors of burnout, with tangible support demonstrating the largest relationship (Lu et al., 2016).

Whereas some studies investigated social support quite broadly, four studies (14.8%) examined the specific influence of coach relationships and behaviors on intercollegiate athlete burnout. In two studies (Chang et al., 2018; Cho et al., 2019), autonomy-supportive coaching was negatively correlated with overall burnout scores as well as each of the subdimensions of burnout. Mellano et al. (2022) also showed lower autonomy-supportive coaching behaviors were positively related to athlete burnout. Controlling coaching behaviors had a positive relationship with burnout (Cho et al., 2019). Punishment-oriented feedback from coaches was also found to be positively related to the subdimension of physical and emotional exhaustion in collegiate athletes (Mellano et al., 2022). Finally, positive coach-athlete relationships were associated with reduced burnout (Ruser et al., 2021).

One study examined the relationship between burnout and parenting behaviors (Howard et al., 2022). Those researchers found a significant positive relationship between athlete burnout and 'helicopter' parenting (i.e., over-involved, autonomy-restricting) behaviors for male, but not female, athletes. A negative relationship between burnout and autonomy-granting parenting behaviors (for both male and female athletes) was also evident. Moreover, an exploratory analysis revealed the positive relationship between overparenting behaviors and burnout was mediated in part by decreased grit and decreased mental health outcomes.

Discussion

The purpose of this scoping review was to describe the current state of the burnout literature, specifically in relation to intercollegiate athletes. A total of 29 studies were identified, with results synthesized based on demographic influences, study characteristics, and the factors associated with burnout in this population. In this section, we reflect on these findings, highlight limitations of the study as well as gaps in the literature, and provide recommendations for future research.

With Whom has the Research been Conducted?

Several studies included in this review examined various demographic factors associated with burnout in intercollegiate athletes. Among the five studies that examined sex as a potential factor, all studies reported female athletes were at greater risk of experiencing high levels of emotional and physical exhaustion compared to their male counterparts (Dubuc-Charbonneau et al., 2014; Giusti et al., 2022; Judge et al., 2012). While the studies included in this review point to potential sex differences in burnout, the underlying mechanisms (e.g., biological, social, psychological) that may explain these differences were not examined. In addition to sex, two studies examined the effects of injury on intercollegiate athlete burnout and found that both having a current injury (Holmberg & Sheridan, 2013) as well as a history of injuries (Giusti et al., 2022) were predictive of higher intercollegiate athlete

burnout compared to those who had no past or present injuries. Notably, pediatricians have called for increased awareness regarding how high volumes of sport training in youth sport can lead to overtraining, overuse injuries, and burnout among youth athletes (Difiori et al., 2014). Yet, it is not known to what extent athletes' training volume *prior* to intercollegiate sport may impact athletes' likelihood of future injury or burnout over the course of their time at a university. Temporary breaks from sports due to injury may initially reduce burnout, but cumulative injuries could ultimately lead to diminished enjoyment and increased burnout risk (Chyi et al., 2018; Giusti et al., 2022). Moving forward, it would be prudent to examine the long-term effects of training volume and injury on burnout, and potential points for intervening with increased support over the course of a season or across an athlete's intercollegiate career.

One of the initial (a priori) considerations for conducting this review was to examine the unique factors intercollegiate athletes may experience (as part of their dual-role) compared to elite professional athletes (who are exclusively focused on sport as their job), or other non-athletic (single-role) university students. Ultimately, we were precluded from conducting such an examination due to the scant amount of research that included variables which could distinguish between these populations. For instance, it would be useful to examine potential differences between athletes and non-athletes at university in terms of the relationships between burnout and various academic variables such as course load (i.e., number of enrolled courses), access to academic supports, and hours spent studying. Such research would help elucidate how intercollegiate athletes' unique demands may impact their susceptibility to burnout (and salient correlates such as mental [ill] health). Those efforts would also shed light on possible moderators that might decrease the potential for burnout amongst intercollegiate athletes; for example, if intercollegiate athletes are at increased risk of experiencing burnout relative to their non-athlete counterparts, perhaps those risks can be reduced or eliminated if a high level of academic supports are available.

It is worth noting our sample included athletes attending university/college across several countries, with the most frequent regions being the United States, Taiwan, and Canada. It is conceivable that experiences of burnout among intercollegiate athletes could differ across countries due to factors related to financial supports, academic supports, or cultural norms. Although we sought to explore the impact of various potential sources of burnout, neither academic-related factors nor cultural aspects were sufficiently captured in the data. In order to examine the potential impact of cultural differences, future work should include cross-cultural comparisons of intercollegiate athletes, as well as more in-depth examinations of burnout (via qualitative study designs) to capture athletes' experiences across contexts.

Among the (limited) studies that did capture academic-related factors, two studies examined the potential impact of academic year on intercollegiate athlete burnout, with mixed findings emerging. Specifically, Dubuc-Charbonneau et al. (2014) found no effect of years of study on any of the three burnout subscales. However, Giusti et al. (2022) found athletes later in their collegiate careers (i.e., third, fourth,

and fifth years of eligibility) reported greater sport devaluation compared to athletes in their earlier years. The latter finding aligns with a proposed 'burnout continuum', which suggests exhaustion initiates the burnout process, followed by reduced accomplishment, and eventual sport devaluation (Giusti et al., 2022). In other words, it may be an accumulation of emotional and physical exhaustion, as well as reduced accomplishment, over several years as an intercollegiate athlete, that culminates as sport devaluation in later years. Given the limited work to date (with mixed findings), the potential burnout continuum and effects of years of university sport on burnout in intercollegiate athletes should be interpreted with caution. Additional research examining burnout—including its three dimensions—over time in this population, would offer further insight into these potential nuances and thereby enhance our understanding of how intercollegiate athletes can be best supported throughout their time at a university.

How has this Research been Conducted?

Research on burnout in intercollegiate athletes has traditionally employed cross-sectional designs, prompting calls for longitudinal studies to better understand the evolution of burnout over time (e.g., Gould & Whitley, 2009). Despite such calls, only 17.2% of studies in our review used a longitudinal design (Chang et al., 2018; Crowell & Madigan, 2022; DeFreese & Smith, 2014; Grobbelaar et al., 2011; Mellano et al., 2022). The remaining designs were either cross-sectional (75.9%) or incorporated mixed methods (6.9%). Overall, the findings from the current review reiterate the need for longitudinal studies (e.g., across an academic year and/or sport season) to clarify the development of burnout, potential protective factors, and critical periods for intervention. This longitudinal work could include examining the extent to which intercollegiate athletes' experiences of burnout may emerge from previous experiences in sport (e.g., high school sport) and/or extend *beyond* their time in university/college and continue into their professional careers (among those who become professional athletes, post-graduation). Relatedly, the distinct absence of qualitative research limits our understanding of the subjective experiences of burnout in collegiate athletes. Indeed, qualitative insights could help clarify the complexity of burnout and the potential factors impacting intercollegiate athletes' experiences of burnout (particularly if these qualitative studies are conducted at multiple points in time).

Beyond the observational designs highlighted above, a limited number of intervention studies have tested how burnout could be prevented or managed among intercollegiate athletes. Considering this paucity of work, we can perhaps draw from research in other contexts or populations to inform our understanding of the potential design and effects of such interventions. For instance, in a systematic review and meta-analysis, Panagioti et al. (2017) found interventions delivered to medical physicians resulted in small, significant reductions in burnout. The interventions varied in content but included techniques such as mindfulness-based stress reduction training, or educational interventions designed to increase self-confidence, communication skills, and/or exercise. Among athletes, meta-analytic evidence also supports mind-

fulness interventions in decreasing athlete burnout (Li et al., 2019). Similar interventions may therefore be useful in the prevention or treatment of burnout among the intercollegiate athlete population, although it should be noted that (a) only a small number of mindfulness-based burnout interventions have been conducted to date, and (b) the effects of these interventions compared to other burnout-management strategies are unclear. Taken together, whilst recognizing the increased feasibility challenges in conducting longer-term studies and intervention research, moving beyond cross-sectional designs and towards designs that better capture changes in burnout would enable researchers and stakeholders to better understand the extent to which burnout can be prevented or reduced among intercollegiate athletes over time.

What Factors are Associated with Burnout?

Our analysis of research on intercollegiate athletes revealed various personal, psychosocial, and interpersonal factors impacted burnout. The personal trait that has received the most research attention to date (five studies) is perfectionism (Chen et al., 2008; Crowell & Madigan, 2022; Garinger et al., 2018; Gotwals, 2011; Pacewicz et al., 2018). Intercollegiate athletes who report more problematic forms of perfectionism (e.g., perfectionistic concerns, maladaptive perfectionism) appear more likely to experience burnout compared to athletes with more positive forms of perfectionism (e.g., perfectionistic strivings, adaptive perfectionism). This aligns with findings from Hill and Curran's (2015) meta-analysis on perfectionism and burnout across sport, work, and education domains. Those authors found perfectionistic concerns were positively associated with burnout, with medium-to-large effects (Hill & Curran, 2015). In addition to heightened levels of perfectionistic concerns predicting higher burnout (Garinger et al., 2018), athletes with higher levels of perfectionistic concerns also seem more likely to report stigma towards sport psychology services and were less open to seeking support from mental health practitioners (Watson et al., 2021). Such a hesitation to access psychological supports is an important consideration for coaches, practitioners, and stakeholders to understand burnout among athletes.

Given the apparent relationship between burnout and perfectionism, researchers have tested the effects of interventions aimed at changing perfectionistic traits. However, the benefits of such programs have been rather meagre. For example, in a three-month intervention, psychological skills training was ineffective in changing perfectionistic traits (Watson et al., 2023). This is perhaps unsurprising considering traits are more stable (i.e., less mutable) than psychological states. As such, it may be worthwhile to target psychological states (rather than traits) in future intervention work. For example, intercollegiate athletes with greater levels of gratitude reported lower levels of burnout compared to those with lower gratitude (Ruser et al., 2021; Yukhymenko-Lescroart et al., 2022). Considering those findings along with meta-analytic evidence supporting the effectiveness of gratitude interventions on various psychological outcomes (e.g., subsequent gratitude engagement, psychological well-being; Davis et al., 2016), gratitude-training interventions could be worth examining as a potential avenue to reduce the occurrence or adverse effects of burnout. It may also be prudent to examine other constructs that have been found to be malleable

through intervention and beneficial to psychological outcomes related to burnout, but (to our knowledge) these topics have not yet been studied within the intercollegiate population. For example, meta-analytic reviews have shown self-compassion interventions can improve a range of psychological outcomes associated with burnout, such as mindfulness, stress perceptions, and anxiety (Ferrari et al., 2019). Such findings, along with evidence from non-intercollegiate sport contexts demonstrating an inverse relationship between burnout and self-compassion (e.g., Hashem & Zeinoun, 2020), hint at the value of testing the effects of self-compassion as a potential antidote to intercollegiate athlete burnout.

From a theoretical perspective, it is worth highlighting that several studies in this review examined burnout through self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000) and found intercollegiate athletes who were more self-determined in their motivation and who reported higher basic needs satisfaction (i.e., autonomy, relatedness, and competence) were less likely to experience burnout in sport. These findings align with other reviews conducted in sport, including Li et al.'s (2013) meta-analysis, which reported medium-to-large effects for both basic needs satisfaction and self-determined motivation in predicting lower burnout scores. These findings are also consistent with a systematic review of burnout in team sports, which found significant negative associations between burnout and autonomy, competence, relatedness, and self-determined motivation, as well as negative associations for amotivation and burnout (Woods et al., 2025). Given this, it appears self-determination theory may serve as a useful backdrop to examine burnout among intercollegiate athletes.

Research has also focused specifically on the relationships between stress and burnout amongst intercollegiate athletes. Consistent with findings from Lin et al. (2021)'s meta-analysis, stress was shown to be significantly positively related to burnout across several studies (Chang et al., 2017; Chiou et al., 2020; Lu et al., 2016). In the current review, a limited number of studies considered stressors that may *uniquely* impact intercollegiate athletes (that is, relative to non-athlete students), which is a notable gap in the current burnout literature. For example, researchers should consider stressors such as academic stress (i.e., balancing coursework and training load), financial stress (e.g., income, maintenance of academic and/or sport scholarships), days of absence from courses due to sport-related travel (i.e., for training camps, competitions), and perceived importance of grades. These variables have the potential to play a meaningful role in intercollegiate athletes' experiences of stress and thus may have implications for burnout beyond sport-specific stressors. Researchers in the future could address this gap by considering both sport and academic stress as *distinct* factors in relation to intercollegiate athlete burnout.

On the topic of stress, it should be noted that researchers should not solely examine the level of *stressors* themselves when studying burnout in intercollegiate athletes; rather, the *appraisals* of those stressors and potential *coping strategies* enacted in response also need to be considered (cf. Lazarus, 1985, 2000). Indeed, Lu et al. (2016) found that when athletes were under high stress, they were less susceptible to burnout if they had developed more resilience and received greater coach support. These findings also align with those from Sorkkila et al. (2019), who found resilience

among secondary school student-athletes may act as a protective factor against burnout over time. Furthermore, Chang et al. (2017) found the extent to which athletes reported having negative thoughts (e.g., negative self-concept, feelings of helplessness) mediated the effects of stress on burnout. These findings can be understood through the lens of Lazarus' model of stress and coping (Lazarus, 1985, 2000), wherein the interpretation of a stressful event and subsequent appraisal of one's ability to cope with the source of stress leads to the experience of stress itself. In this sense, rather than simply aiming to reduce stress altogether, it may be athletes who have a better ability to manage stress (e.g., engaging in adaptive coping strategies, receiving social support) are more protected against burnout. Indeed, a meta-analysis by Wilczyńska et al. (2022) examined five randomized-controlled psychological skills interventions with young athletes (under 25 years old) and found interventions were effective at reducing burnout in sport. Future research is warranted to understand the extent to which similar benefits emerge for intercollegiate athletes specifically.

The role of important sources of social support was also examined in their relation to intercollegiate athlete burnout. Firstly, regarding coaches, greater autonomy-supportive coaching behaviors (Chang et al., 2018; Cho et al., 2019; Mellano et al., 2022) and more positive coach-athlete relationships (Ruser et al., 2021) were found to be associated with lower burnout scores, whereas controlling coaching behaviors were related to greater burnout scores (Cho et al., 2019). Further, Lu et al. (2016) found various specific forms of a coach's social support (i.e., tangible, informational, esteem) were related to lower athlete burnout. Beyond coaches, mixed effects were found in terms of perceived social support from others (e.g., parents, teammates). Specifically, and in line with findings from others (Pacewicz et al., 2019; Woods et al., 2025), several studies in this review reported a negative correlation of burnout with general perceptions of social support (Gabana et al., 2017) as well as support specifically from teammates (DeFreese & Smith, 2013, 2014). However, when tested longitudinally over a sport season, no predictive effects of perceived social support from teammates on athlete burnout were found (DeFreese & Smith, 2013). Similarly, autonomy-supportive parenting was related to lower burnout, whereas overparenting behaviors were related to greater burnout in intercollegiate athletes, but these effects did not hold when examined as predictors via structural equation modelling (Howard et al., 2022). These findings underscore the importance of longitudinal designs and/or more sophisticated analyses (beyond cross-sectional correlations) to fully appreciate the role of a supportive environment in mitigating athlete burnout among intercollegiate athletes.

Limitations and Additional Future Research Directions

Balanced against the strengths of this review, limitations should also be noted. As highlighted previously, most included studies were cross-sectional, and thus, are only able to capture a snapshot of the experiences of burnout (i.e., a single point in time). This presents important limitations to the representativeness and generalizability of the findings. Among those cross-sectional studies, many only included correlational analyses to examine the relationship between burnout and variables of

interest; thus, we are unable to confidently ascertain *directionality* in this review. In line with suggestions from others (Dubuc-Charbonneau & Durand-Bush, 2015; Saward et al., 2024), future work should specifically examine directionality (e.g., via cross-lagged panel modelling; Mackinnon et al., 2022), as well as the *causal* mechanisms of burnout through randomized controlled interventions. As one example, Tóth-Király et al. (2021) collected data from young adults across nearly 15 years (beginning at ages 17-18) and found a bidirectional relationship between depression and burnout over time. In other words, depression was found to impact burnout, and burnout also impacted subsequent depression. It should also be noted that some studies in this review did not primarily focus on burnout but instead explored related constructs, such as teammate social support (DeFreese & Smith, 2013), negative social interactions (DeFreese & Smith, 2014), parenting behaviors (Howard et al., 2022), gratitude and coach-athlete relationships (Ruser et al., 2021), and passion and coping mechanisms (Schellenberg et al., 2013). Although these studies included measures of burnout among intercollegiate athletes, the study designs and statistical analyses were designed for non-burnout-related objectives, which warrants some caution around making interpretations specific to intercollegiate athlete burnout. The lack of focus on burnout specifically, at least among some studies, may have also contributed to the limited consideration of burnout sources that would be unique to intercollegiate athletes (i.e., academic-related factors).

Beyond the general limitations of the reviewed studies, the limitations of our study design should also be highlighted. For one, although the specific type of review we chose (a scoping review) was deemed most appropriate for addressing our research aims, we recognize those aims and the associated inclusion criteria were rather broad. While this helped ensure comprehensive coverage of the research to date on intercollegiate athlete burnout, it resulted in our results being rather descriptive. As part of this, we were unable to derive synthesized statistics that may be useful for readers, such as effect sizes or statistical significance of relationships between burnout and various correlates. Moreover, considering the range of study designs in our review, it was not deemed feasible to conduct a quality appraisal analysis of the studies we reviewed. Although such an absence is typical of scoping reviews (Sabiston et al., 2022), it nonetheless limits our ability to comment on the methodological quality of research in this area to date. We also recognize there may be studies that are relevant to the topic of burnout amongst intercollegiate athletes but were not included in our review due to our eligibility criteria (e.g., constraints around retrieving papers not written in English) or other factors such as publication bias (i.e., there may be studies that have not been published due to a lack of statistically significant findings).

Conclusion

This scoping review highlights the progress and key gaps in understanding athlete burnout among intercollegiate athletes. Whereas much of the existing literature on athlete burnout has focused on elite youth and professional athletes, we sought to specifically examine the experience of burnout in this population. In this way, the

review contributes to knowledge in terms of the individuals who participated in this research, the methods by which the phenomenon has been studied, and the factors that affect the development and outcomes of intercollegiate athlete burnout. Specifically, the studies in this review predominantly employed quantitative methods, with data collected at a single time-point. Although relationships between burnout and several demographic factors (i.e., personal, psychosocial, and interpersonal) were examined, the findings were unable to ascertain the *directionality* of the relationships. Moving forward, our hope is the various avenues for future research that have been proposed—such as utilizing longitudinal methods to examine the development of burnout over time or examining the potential impact of academic and cross-cultural factors on experiences of burnout—will lead to subsequent studies that further our understanding of the nuances of burnout among intercollegiate athletes and, ultimately, help stakeholders develop appropriate strategies that foster the wellness of these individuals.

Authors' Note

[1]The Open Science Framework (OSF) page for this study can be found here: https://osf.io/vp7sq

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*** Indicates study was included as part of the scoping review**

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Appendix A:
Preferred Reporting Items for Systematic reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	**1**	**Identify the report as a scoping review.**	400
ABSTRACT			
Structured summary	**2**	**Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.**	400
INTRODUCTION			
Rationale	**3**	**Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.**	401-402
Objectives	**4**	**Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.**	402
METHODS			
Protocol and registration	**5**	**Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.**	403
Eligibility criteria	**6**	**Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.**	403
Information sources*	**7**	**Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.**	403-404
Search	**8**	**Present the full electronic search strategy for at least one database, including any limits used, such that it could be repeated.**	403-404

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Selection of sources of evidence†	**9**	**State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.**	403-404
Data charting process‡	**10**	**Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.**	405
Data items	**11**	**List and define all variables for which data were sought and any assumptions and simplifications made.**	405 and Footnote 1
Critical appraisal of individual sources of evidence§	**12**	**If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).**	405
Synthesis of results	**13**	**Describe the methods of handling and summarizing the data that were charted.**	405
RESULTS			
Selection of sources of evidence	**14**	**Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.**	405 and Figure 1
Characteristics of sources of evidence	**15**	**For each source of evidence, present characteristics for which data were charted and provide the citations.**	Footnote 1
Critical appraisal within sources of evidence	**16**	**If done, present data on critical appraisal of included sources of evidence (see item 12).**	n/a
Results of individual sources of evidence	**17**	**For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.**	Footnote 1

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	**18**	**Summarize and/or present the charting results as they relate to the review questions and objectives.**	405-413
DISCUSSION			
Summary of evidence	**19**	**Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.**	413-419
Limitations	**20**	**Discuss the limitations of the scoping review process.**	418-419
Conclusions	**21**	**Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.**	419-420
FUNDING			
Funding	**22**	**Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.**	n/a

JOURNAL OF INTERCOLLEGIATE SPORT

Developing the Concept of Financial Modernization within a Historical Review of College Football Stadium Construction

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The present study examined the financing approaches employed by football-playing institutions in the National Collegiate Athletic Association's (NCAA) Division I Football Bowl Subdivision (FBS) between 1869 to 2025. The goal of the current research aims to contribute to the literature on modernization by presenting a process of financial modernization. Previously, the notion of financial modernization has only been inferred and not explained or theorized. To date, the researchers discovered cost information on roughly 76.4% of the 2,834 new construction or renovation projects produced by the sample. Using a sport-based historical research approach, a 7-stage chronological ideal-type was developed to showcase the evolution of financing practices and to inform the subsequent development of an 8-stage process model of financial modernization. The process model developed for this study was inspired by previous scholarship focused on explaining the modernity of financial systems and shows it to be complementary of both reflective and ecological modernization. The stages of the model illustrate how financing for products, services, or phenomena start with self-funded private interest before new mechanisms are created by external and internal public interest. Institution purse holders and developed institutional fields (e.g., intercollegiate athletics) follow as new financing sources. Collectively, private and public interest develop institutions and institutional fields which collectively create conditions and inspiration for government funded programs before societies of support emerge to establish new financing mechanisms. Lastly, the present study discovered entrepreneurial activities emanating from established phenomena emerge as a final process stage in financial modernization.

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As an organizing concept, modernization initially emerged during the nineteenth century and evolved over time to help western scholars better explain the development of society, capitalism, and their corresponding products and services that surfaced from various economic, political, and social changes (Downs & Seifried, 2019, 2023; Inglehart & Welzel, 2005; Seifried & Novicevic, 2017). Antoine de Condorcet, Henry Maine, Adam Smith, and Ferdinand Tonnies, for instance, all used economic data and historical information to gain a better understanding and explain such changes in the western world (Downs & Seifried, 2019). Similarly, twentieth century scholars like Talcott Parsons, Max Weber, and Louis Wirth advanced modernization as a theoretical construct to suggest "socioeconomic development brings cultural changes that make individual autonomy, gender equality, and democracy increasingly likely, giving rise to a new type of society that promotes human emancipation" (Inglehart & Welzel, 2005, p. 2).

More recent revisions to modernization advocated its utility to predict changes in society and institutional fields globally (Downs & Seifried, 2019, 2021, 2023; Seifried & Novicevic, 2017). As one example, previous sport-based scholarship embraced modernization theory to better understand how sport evolved over time (i.e., rules generation and record-keeping; e.g., Adelman, 1986; Downs & Seifried, 2019; Houlihan & Green, 2009; Howell, 1998) and how it developed as a commodity to boost a country's reputation (e.g., Hoberman, 1987; Llewellyn, 2012; Lukuslu & Dinssahin, 2013; Sotomayor, 2015; Wang, 2015). Next, modernization served as a theoretical approach to explain the evolution of sports such as British soccer (Bale, 1993), professional football, baseball, hockey, and basketball in the United States (Downs & Seifried, 2021, 2023; Seifried, 2010b; Seifried & Pastore, 2009a, 2009b), and athletic grounds and facilities (Pujadas, 2012; Seifried, 2016; Seifried et al., 2016). The latter often featured projections on future facility construction (e.g., multiplication of amenities and technologies) based on past trends.

During its advancement, modernization scholars markedly developed a typology that categorized modernization as either reflexive or ecological (Downs & Seifried, 2023; Seifried & Novicevic, 2017). Scholars have argued reflexive modernization shows how societies and organizations increasingly sought to limit risk to existing or apparent threats (Giulianotti, 2009). Ecological modernization focuses on the ongoing development of industries to resolve environmental concerns and/or induce or counter biological changes through the use, development, and modification of technology (johnson & Ali, 2018).

Subsequent use of the term modernization, due to its general understanding, was also applied to various contexts or phenomena. For example, technological modernization emerged as a concept to describe the evolution of and search for new products that offer revolutionary breakthroughs, enhanced efficiency, and improved communications to address or create economic and cultural transformations (Glazyev, 2014; Martynov, 2017). Elsewhere, financial modernization appeared in legislation (e.g., Financial Services Modernization Act, 1999) focused on financing and/or the banking industry. However, the term financial modernization has been misappropriated there and with scholarship that focused on singular financial systems, because they

did not offer a formalized connection to modernization theory and cultural transformations.

Current modernization literature also does not focus with any great emphasis on the modernization of financial approaches (Downs & Seifried, 2019), even though many scholars previously alluded to the notion of financial modernization within general, ecological or reflexive frameworks. Adding to this point, scholars (e.g., Kroszner 2000; Sylla 2002) presented compelling viewpoints about modernity and markers of financial systems but they have not taken the next step and recognized how financing practices modernized in a specific order and may have done so due to specific events, innovations, interests, and needs within a variety of institutional fields and/or society. The present study aims to contribute to the literature on modernization by presenting a process model on financial modernization and arguing, like technological modernization, it can complement both reflexive and ecological modernization.

A challenge to better understand the potential introduction of financial modernization as a distinct phenomenon compels the selection of a theoretical sample that has produced a substantial history of financial development. Notably, both reflexive and ecological modernization are employed by sport-based scholars and have been featured in studies focused on exploring the evolution of sport facilities (Downs & Seifried, 2019). As facility construction and finance options undoubtedly continue to evolve, institutions of higher education and organizations will be tasked with navigating the growing complexity of financing new football stadium construction or renovation projects. The present study examines the financing approaches employed by institutions in the National Collegiate Athletic Association's (NCAA) Division I Football Bowl Subdivision (FBS) from the sport's official birth in 1869 to 2025.

Many individual case studies and other research have been completed on intercollegiate football stadium projects, but no scholarly work has focused specifically on understanding the financing of stadia collectively, changes over time, and contextual factors that facilitated financial advancements. This is interesting because the pressure to keep up with institutional peers, to meet the needs and desires of various stakeholders, attract top talent, and satisfy business and media partners historically required a constant evaluation of facilities and involves decisions about where improvements can be made and how those can be financially supported (Petersen & Judge, 2021). Next, it is clear from the literature that over time, stadium improvements demanded significantly more capital as they became larger and more complex (Greenberg & Gavin, 2021). The increasing cost of sport facilities also involved greater financial risk and thus, it appears institutions of higher education increasingly created multifaceted financing plans that utilized multiple funding streams. In many cases, these financial schemes were also different than those used to finance professional stadium development (e.g., Alakshendra, 2016; Crompton et al., 2003; Long, 2005; Williams & Seifried 2013), which has received more study. In the future, it is certain the financing of stadium projects will continue to evolve as new demands arise and technologies and innovation improves the college football experience for consumers, participants, and other stakeholders. Appropriately, understanding the

process of financial modernization will serve to help identify existing financial approaches and potentially create new ones to realize organizational goals centered on facility construction but also those that support contract development, budgeting, and other activities.

Theoretical Framework

Past modernization literature regularly shows that as societies and institutional fields continuously change the levels of complexity often increase (Downs & Seifried, 2019; Seifried & Novicevic, 2017). Within this point, specialization (e.g., jobs and institutional fields), standardization, regulation, and commercialization are important features of modernization and a foundational part of this increasing complexity (Seifried, 2010b). Next, modernization occurs through introduced innovations, political structures, evolving court systems, financial structures, and environmental pursuits (Downs & Seifried, 2019; Seifried & Novicevic, 2017. In the West, these innovations and/or structures are a result of the maturation of capitalism and the increasing interaction of community members and interests of the wealthy to not only demonstrate their standing but to build more wealth for themselves and potentially their community (Seifried & Novicevic, 2017). Further, these innovations and structures reflect the emergence of meritocracy and advancing demonstrations of civic pride (Downs & Seifried, 2019).

Noticeably, much of the modernization research over the past couple of decades can be identified as either reflexive or ecological (Seifried & Novicevic, 2017). Many scholars including Lash (1993), Beck (1992), Giddens (1990, 1991), and Durkheim (1997/1893) previously described the concept of reflexive modernization as the sense of a *conscious collective* [emphasis added] rooted to individualism and morality. Regarding the conscious collective, Durkheim (1997/1893) and later Coleman (1990) posited more instances of reflexivity with respect to rational decision-making and actions will be realized as individuals experience increased freedom from conventional structures of society. Giddens (1990, 1991) equated reflexive modernization as marked by the growth of globalization and the deterioration of traditions.

Correspondingly, Gleeson (2000) noted reflexive modernization focuses on monitoring and reducing risk as changing views of crisis, associated with modernity, impact various shared points of view by the public. Within this perspective, Gleeson highlighted the needs of society to navigate the ‘dual crisis’ of pursuing safety and security, associated with potential post-modernism, and balancing the status quo. Beck (1992) spoke similarly on reflexive modernization as applicable to industrialized society and the production and distribution of goods on a nation-state level when contrasting it against the second state called the ‘risk society’ where hazards, dangers, or risks, are distributed. Under this principle, Beck (1992) suggested society increasingly engaged in the ‘insurance principle’ and contingency planning to change the incalculable nature of certain phenomenon related to the welfare state and private entities.

Risk is constructed by society and increases as complexity grows. With respect to sport facility construction, Bale (1993) and Seifried' s (2010b) ideal-types on the modernization of stadia, illustrate how institutions began to negate risks associated with unstable wooden sport venues by giving spectators safer, larger, and more amenity-based concrete and steel structures. Man-made wooden facilities could collapse and were more susceptible to fires, both of which could cause significant bodily injury to spectators and create financial losses (e.g., income and lawsuits). By transitioning to concrete structures, universities signaled college football was legitimate and institutions were able to overcome credible risk. Beck (1992) refers to this as "reflexive scientization" where the sciences are "confronted by their own products, defects and secondary problems" and "not only as a source of solutions to problems, but also as a cause of problems" such as domed roofs taking away the impact of weather on contests (p. 155-156).

Ecological modernization has been referred to as "the idea that capitalist-driven scientific and technological advancements cannot only attend to the world's pending environmental crises but even lead to ecological improvement" (Millington et al., 2018, p. 8). Within this frame, Mol (2003) discussed how the environment and biology have long been described as obstacles to overcome and the transition of society can be seen through endeavors to protect and/or control the environment and/or biology. Hajer (1995) and Buttel (2000) similarly connected ecological modernization to environmental policies to identify 'advanced countries' and to predict their proclivities for industrial-ecological advancement. Finally, Buttel (2000) noted processes related to ecological modernization mirror political climates and policies facilitated by the very modernization of the state. Another way to view ecological modernization includes the state incentivizing organizations to take on the responsibilities related to environmental and medical policies, threats, and opportunities, head-on, rather than through government mandates and/or pressure.

While a basic tenet of ecological modernization is a mastery of the environment via technology, Sighinolfi (2019) also states the prevailing theory of ecological modernization introduces a shift toward anticipation and prevention of environmental degradation, a nod to reflexive scientization within the ecological space. Schlosberg and Rinfrest (2008) further highlighted that as organizations seek greater efficiency and regulation and incentives can work in conjunction to improve the environment. Millington et al. (2018) showed the golf industry found ways to incorporate these goals through efforts to embrace the "natural contours of the land" into golf course design and maintenance, as well as finding increasingly efficient ways to manage pests, water usage, and grass growing through technological innovations (p. 11).

Overall, the literature on modernization infers a significant connection to financial systems and presents an opportunity to consider the notion of financial modernization (see Table 1). For instance, the modernization literature highlighted the importance of technology in building construction, which in turn is greatly impacted by financial operations or strategies in a growing complex environment. Next, reducing risk is a theme inherent within both reflexive and ecological modernization. The emergence of investors, development of insurance, and fundraising all appear to be financially

connected to risk. Yet, advancements over time made it possible to assume bigger risks through so many different financial mechanisms and technological innovations. Changes to the economy, political ideologies, and court systems are also applicable to financial systems and the search for new solutions to finance products, services, and events, which can demonstrate how financial modernization is also a distinct form of modernization.

Table 1
Characteristics and Distinctions of Reflexive, Ecological, and Financial Modernization

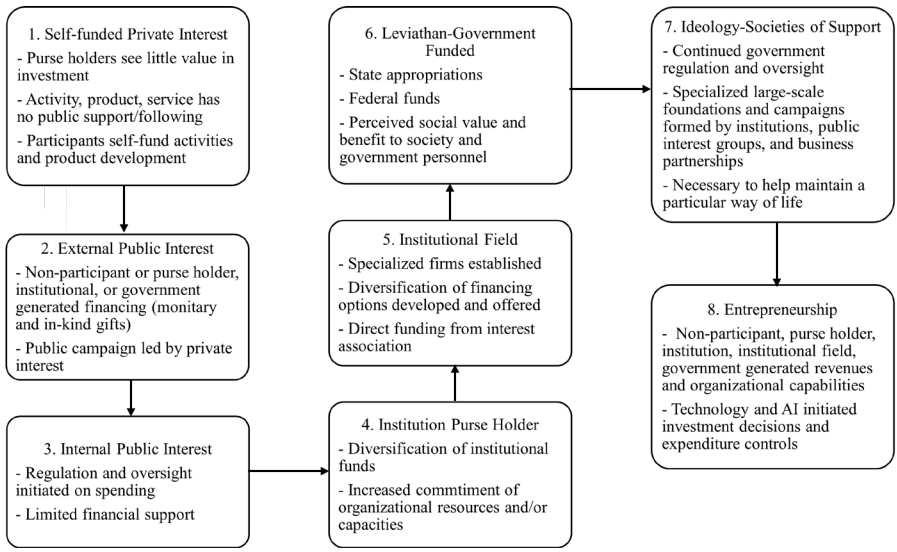
Types	Reflexive	Ecological	Financial
Characteristics	Reduce/Eliminate risk; rooted in individualism; associated with increased freedoms; globalization increasingly more likely and end of traditionalism; critique of science, pursuit of safety and security; advancements in communications	Biological and environmental mastery/ increased ability to control nature; models political climate and policy changes; modification of technology	Emergence of investors; development of insurance; establishment of institutional leaders; seek stability; business partnerships; contract development (first individual and later collective-level) business can become public commodity
Shared Characteristics	Job creation and specialization; standardization regulation; commercialization; technology advancement; political influence; decreased risk; court systems; pursuit of innovation		
Financial Modernization Distinctions	Associated with increased likelihood that risks will be taken; established classes of people (growth of technology, access to education, increased revenues and production, etc.); meritocracy development; interest in efficiency		

Financial Modernization

With respect to the prospects of financial modernization, the present study suggests Kroszner's (2000) work shows potential as source of inspiration to develop a process model (see Figure 1). Within that review, Kroszner identified five categories (i.e., private interest, public interest, ideology, institution, and leviathan) of a financially modern society to explain how governmental interventions and regulations on financing are influenced by changes in economics, society, and politics. Private interest recognizes individuals and organizations as often seeking to help themselves, which can occur sometimes at the expense of others. For instance, private interest groups emerge through shared interest to engage in activities they collectively desire. Further, they may openly lobby against other interest groups and often, in organized ways, may influence policy development, changes, and regulatory efforts. Markedly, Kroszner (2000) argued that studying the way these groups change

in size and strength, as well as the way they are organized, is essential to analyzing the process of financial change. Next, understanding how regulators or purse holders (e.g., schools) respond and view potential rewards from private interest groups is important to review. In the present study, we suggest private interests surface as the starting point for financial modernization. Further, we propose that initial financing begins with the decision to engage in *self-funding* [emphasis added] initially through simple direct actions and later through more complex initiatives or strategies (e.g., refinancing).

Figure 1.
8-Stage Process for Financial Modernization



Kroszner (2000) framed public interest as related to the efforts made to protect markets from predatory financial schemes, un/under-educated consumers or participants, and to correct failures in the market. In essence, public interest serves to "maximize social welfare" (Kroszner, 2000, p. 26). Elsewhere, Sylla (2001) similarly noted public interest may include advances in regulation and oversight from external supporters to boost revenues and curb expenditures in debt servicing. The notion of public interest, as used in the present process model, suggests as the size of private interest and expenditures multiply to produce products, events, and services, public interest builds expanding purse holders' and external parties' willingness to assume financial responsibilities due to the benefits they accrue. Externally, consumers begin their support through donations (e.g., monetary and in-kind) to support survival of phenomena during development. Internally, purse holders (e.g., schools) are later compelled to establish guidelines to regulate investments and expenditures but not generally active in designing financing plans. Further, they are likely to limit their investment and diversification strategies.

The category of institution-level financing implies policymaking often uses knowledge of "transaction costs and institutional arrangements for decision-making" as developed and influenced by outside entities and burgeoning institutional fields (Kroszner, 2000, p. 28). The present study argues that as individual-level institutions (i.e., purse holders) start committing more funds they possess, they will also increasingly diversify their approaches to finance popular private interests of their members. This type of financing may also include establishing special committees and/or using third-party actors or specialists (e.g., financial firms) to facilitate and/or present recommendations on financing approaches based on available resources. Institutional fields, such as intercollegiate athletics, later surface because of the growing number of institutions supporting similar products and services to examine financial issues and to understand and provide proposals for financial development. Interest associations, like the NCAA and related financial firms, often attempt to assemble, communicate, and promote the incorporation of a growing number of specially designed financial options to support product development and may even offer funds from their collective membership's pooled resources.

Leviathan involves outside the institution politicians and the government itself as special interest groups and their effort to expand their influence and/or respond to or capitalize on constituent and institutional fields demands and interests. According to Niskanen (1971) and Brennan and Buchanan (1977), when the government seeks to increase or maximize its size and spending, this is the leviathan approach. This practice often comes in the form of emerging government legislation and regulatory decisions within the financial services industry (Kroszner, 2000). The current study suggests that leviathan emerges as the *government* [emphasis added] recognizes the social value of a phenomenon established by public interest, institutions, and institutional fields. Further, growing confidence by politicians and government officials that an institutional field will continue to thrive prompts them to be less fearful that their support with taxpayer monies (e.g., grants and appropriations) will be viewed negatively. Moreover, they see the perceived investment (i.e., design of regulations and financial mechanisms) as beneficial to their own personal reputation and that of the government.

Finally, ideology explains continued governmental interventions (e.g., re/deregulation of financial institutions) and specifically identifies the changing beliefs or politicians and voters who influence policies (Kroszner, 2000). Next, ideology rationalizes the development of specific foundations and specialized campaigns as example *societies of support* [emphasis added] to support a phenomenon that holds a substantial history of support or interest. The thought within ideology is that as time progresses and a product or service becomes part of or a way of life, attitudes change and financial innovations are sought to sustain and enhance operations.

Method

The present study examined the financing approaches employed by NCAA Division I Football Bowl Subdivision (FBS) institutions (n = 134) from 1869 through

2025. To begin the study, we selected Seifried's (2010a, 2017) framework for conducting historical research in sport as a base. Step 1 compels the identification and selection of appropriate primary and secondary sources (Table 2). Primary sources are developed by individuals and groups intimately involved in the phenomena being studied. Examples of primary sources sought and discovered in present study included: financial statements, letters of correspondence, committee meeting minutes, published calls for proposals, and organizational reports (e.g., president annual report to board of regents and athletic department annual reports). Most of these documents were collected via archival visits (n = 47) conducted at various institutions. University archivists and special collection finding aids or catalogs also helped identify sources (Demiris & Seifried, 2023).

Secondary sources served to fill in some missing data and context potentially omitted within primary documents. The best secondary sources are generally developed with primary sources and come in the form of scholarly books, journal articles, and newspaper articles, which can also exist as primary sources (Demiris & Seifried, 2023; Seifried, 2010a, 2017). Various databases such as HathiTrust Digital, Nexis-Uni, Google Scholar, JSTOR, newspapers.com, and newspaperarchives.com were used to collect data. Next, school websites and digital collections of each member of the sample were searched. Keyword searches focused primarily on identifying the existence of new construction and major renovation efforts framed by Weeks and Grimmer (1995) as reconstruction, preservation, rehabilitation, and restoration projects that substantially improve a building and/or change its layout. Maintenance costs were not collected. With respect to these types of renovation, previous markers on stadium innovations established by Tutka and Seifried (2020) include changes to turf/grass, scoreboards, seats, grandstands, press boxes, concessions, restrooms, locker rooms, lights, and any major infrastructure activities.

Step 2 requires a source criticism of the collected documents to assess, in essence, their validity and reliability (Decker, 2013; Seifried, 2010a, 2017). External checks occurred by determining authenticity or verification of data through examination of document author credibility, corroboration of information through a timeline, and if information came from archives and digital collections. Internal criticism involved the effort to understand if documents emerged from participants or non-participants and if documents were intended for a specific audience. Collectively, this approach helped avoid selection bias and identify various conditions (e.g., social, political, religious, or economic) that might influence financing decisions.

Step 3 involves the analysis of the data and information collected. The current study used an a modernist epistemological approach and ecological mode to conduct archival research. Within the amodernist approach, we paid "attention to relationships within their evaluation of archived materials to produce their descriptions" (Demiris & Seifried, 2022, p. 195). The ecological mode appeared desirable for financial modernization research because it expects organizations that make up the population of an institutional field will collect specific information and describe it similarly (Demiris & Seifried, 2022).

Table 2
Sources of Data Table

Data Type	Amount (All Range from 1869-2025)	Use in Analysis
Primary Data		
Institutional Archives (Physical/Digital) • Meeting minutes • Letters of correspondence • Annual reports	**47/134***	Provide factual data about construction projects, financing types, and amounts
Government Documents and Reports	**82**	Provide factual data about enrollments, populations, and regional information
Secondary Data		
History/Scholarly Books • Individual institutional histories • Individual sport team histories • General college football history	**136**	Provide an overall history of college football and facilities at specific institutions, the history of college football, or other interpretation of outside factors Motivations for financing activities
Academic Articles • Individual school construction histories • Specific time period construction histories on colleges	**201**	Provide an overall history of college football and facilities at specific institutions, the history of college football, or other interpretation of outside factors, historical contexts, or theoretical information
Institutional and Industry Stadium Websites	**175** (current and defunct)	Provide factual data about construction projects, financing types, and amounts
Newspaper Articles • Regional, National, and Student	**5000+**	Provide factual data about construction projects, financing types, and amounts

Note. *Archival visits occurred with the following institutions: Air Force, Alabama, Arizona, Arizona State, Arkansas, Army, Ball State, Baylor, Boise State, Bowling Green, Brigham Young, Cincinnati, Clemson, Colorado, Colorado State, Georgia, Georgia Tech, Illinois, Iowa, Iowa State, Kentucky, Louisiana-Lafayette, Louisiana State, Mississippi State, Navy, New Mexico, North Carolina, Notre Dame, Ohio, Ohio State, Ole Miss, Penn State, Pittsburgh, Rutgers, Southern Methodist, South Carolina, Southern Mississippi, Syracuse, Texas Christian, Temple, Tennessee, Texas A&M, Tulane, Utah, Vanderbilt, Wake Forest, and Wyoming.

A spreadsheet was employed to triangulate and categorize various financing methods. This served to reduce concerns when dissonant data surfaced, and to identify and organize changes in financing eras. Markers of financial modernization in construction or renovation used in the current study included: obligation bonds (external public and government), revenue bonds (self-funding, internal and external public, and institution), monetary gifts (self-funding and external public), in-kind gifts (self-funding and external public), taxes (institution, government, and societies of support), student fees (self-funding and internal public), non-football activities (entrepreneurial), student and faculty labor (self-funding), state appropriations and federal funding (government), athletic department resources and organizational capabilities (institution), alumni and athletic foundations (societies of support), school funds (institutional), fundraising campaigns (institution and societies of support), and grants (government and ideology).

Finally, in Step 4, the current research employed an ideal-type as a heuristic device to facilitate understanding of the various stages in the process model. This ideal-type appears in a chronological order to help better communicate similarities and marked differences between various eras. Work by Crompton et al. (2003) and Tutka and Seifried (2015, 2020) promoted the use of heuristic devices for theorizing efforts and to generalize information emanating from of a multitude of cases, context, and data within a period to illustrate the evolution of a phenomenon (i.e., financial modernization). Major changes in financing and stadium construction activity are used as context for stage changes in the ideal-type.

Results

The results offer a seven-stage ideal-type on the financial modernization of NCAA Division I-FBS institutions from 1869 to 2025. We found evidence of 2,979 pre-existing, new construction, or renovation projects in the sample. Regarding the renovations, rehabilitation surfaced as the most common construction activity. Reconstruction, preservation, and restoration followed in that order. Beyond additional seating expansions, we discovered information on turf/grass (n = 526), scoreboards (n = 424), press boxes (n = 213), lights (n = 165), and restroom and concessions (n = 135) in addition to other items. Financing information was discovered on approximately 76.4% of the sample. The total found costs of new construction and renovation projects are roughly $28.5 billion nominally or $46.8 billion considering cost inflation. Pre-existing venues (n = 145) that required no modification were disregarded in the analysis.

Table 3
Seven-stage Ideal-type and Top 5 Financing Approaches

Stage/Years	# of Projects	New Construction and Renovation Costs in 2025 dollars	Top 5 Financing
Stage 1 (1869-1903)	217	New Construction Total $4,383,870 and Avg. $128,937 Renovation Total $7,762,094 and Avg. $204,266	Student and Faculty Labor (private interest = 61%), In-kind and Monetary Gifts (private and public interest = 24%), Student-led Athletic Associations Fees and Gate Receipts (private interests = 19%), limited school funds (public = 19%), and appropriations (public = 6%)
Stage 2 (1904-1929)	507	New Construction Total $574,061,215 and Avg. $5,519,830 Renovation Total $185,292,798 and Avg. $1,052,800	Monetary Gifts (public interest = 33%), Athletic Department and Student Fees (private and public interest = 32%), Faculty and Student Labor (private interest = 26%), Diverse School Funds (institutional = 17%), and Fundraising Campaign (institutional and public = 10%)
Stage 3 (1930-1946)	284	New Construction Total $168,962,253 and Avg. $4,693,396 Renovation Total $334,594,880 and Avg. $12,534,810	Monetary and In-kind Gifts (public interest = 15%), New Deal Programs and Appropriations (leviathan = 37%), Non-student led Athletic Department (institution = 25%), School Funds (private and public interest = 12%), and Alumni Associations (public interest = 4%)
Stage 4 (1947-1969)	438	New Construction Total $1,296,089,057 and Avg. $29,456,569 Renovation Total $1,372,011,538 and Avg. $4,971,056	Athletic Association/Department (institution = 43%), Gifts (public interest = 17%), Appropriations (leviathan = 12%), Alumni Associations (public interest = 11%), and Bonds (public interest = 11%)
Stage 5 (1970-1984)	324	New Construction Total $2,166,158,218 and Avg. $108,307,911 Renovation Total $2,402,109,748 and Avg. $9,346,731	Athletic Department (institution = 41%), Gifts (private and public interest = 25%), Athletic Associations (public interest = 20%), Business Partnerships (public interest = 15%), Bonds and Appropriations (public interest and institution = 11%),

Stage 6 (1985-2002)	477	New Construction Total $427,434,000 and Avg. $61,062,000 Renovation Total $7,368,787,417 and Avg. $18,284,832	Large and Small Gifts (ideology = 39%), Athletic Foundations (public interest = 35%), Athletic Department (Institution = 22%), Suite Rentals (private and public interest = 14%), Bonds (private and public interest = 12%)
Stage 7 (2003-2025)	732	New Construction Total $7,012,824,730 and Avg. $350,641,237 Renovation Total $23,048,585,752 and Avg. $38,096,836	Gifts (private interest and ideology = 44%), Athletic and Alumni Associations (public interest = 39%), Premium Seating Suites and Stadium Clubs (private interest = 14%), Athletic Department (institution = 19%), and Bonds and Business Partnerships (private and public interest = 12%)

Note. Financing methods were often combined to complete various renovations and new constructions.

Stage 1: Birth of Private and Internal and External Public Financing

Stage 1 (1869-1903) surfaced through the emergence/development of private interest and groups of students who wanted to play and ultimately watch football on campuses. Initially students took advantage of preexisting campus grounds or available public park spaces within the community to play the sport. In this stage, student-run athletic associations surfaced to collect fees (e.g., pass the hat) and organized the first intercollegiate contests on campus athletic fields or leased neutral sites. Gradual increases in spectatorship prompted students to construct fences (e.g., wood and/or cable with canvas tarps) around the playing area and establish wooden bleacher seating to more effectively manage crowds and collect admission fees. Admission fees served to support the perpetuation of the sport via burgeoning public interest as expenditures such as travel, equipment, and meals increased (Seifried & Demiris, 2021; Seifried et al., 2021).

We discovered not all students were members of student-led athletic associations at this stage and member dues from participants (i.e., private interest group) financed early construction efforts before gifts were solicited from alumni and local businesses to demonstrate building public interest. Students were overwhelmingly more likely at this stage to donate their own money, time, and labor or expertise (e.g., engineering, architecture, landscaping, and construction) to build stands, erect fences, and resurface fields. In-kind gifts such as lumber to build stands and fences from local fans also helped finance construction of the first campus athletic fields as demonstration of private and external public interest.

Initial help from campus administrators and faculty was limited during the early part of this stage. However, we found some faculty offered their own personal funds to help establish football fields due to their interest in the sport. Later, administrators gradually initiated institutional support of football athletic grounds through making available the use of school funds, justifying such investments as aimed at cultivating relationships with alumni (e.g., gifts) and the community, enhancing the campus

spirit, and improving student retention and enrollments. At the University of Kentucky, Arther Miller, a professor of zoology and geology, recruited other faculty and local businesses to donate or invest into developing a new grandstand, the latter with promises of a 10 percent of each game's gate receipts (Seifried & Demiris, 2021).

Grandstand seating improved the experience for patrons and special institutional guests by offering better sightlines, potentially protecting them against poor weather, and space for the press (i.e., writers and photographers) to conduct their business (Tutka & Seifried, 2020). By offering improved seating options to patrons, higher gate receipts emerged that often were reinvested into athletic grounds. By the 1890s, college football attracted coverage from daily newspapers and circulated magazines like *Harper's Weekly* and *Outing* that improved knowledge of the sport and fashioned its players and coaches into celebrities. Markedly, college football games were transformed into major social events to attend full of spectacle through the play, cheering, singing, and displays of color and fashion (Watterson, 2002).

Stage 2: The Rise of Institutional Support and Institutional Field-level Financing

Stage 2 (1904-1929) creates an abrupt change in financing initially with students successfully raising money from targeted alumni or local prominent citizens before World War I to help build the first permanent football stadium. The development of steel and reinforced concrete stadiums started in 1903, and both physically and financially served as a point of demarcation that subsequent stadiums of this era were to be substantially larger and more expensive and thus require more capital than simple wooden athletic grounds in Stage 1. Archbold Stadium emerged at Syracuse University in 1907 because of local philanthropist, John D. Archbold's, willingness to gift $399,461 ($13,661,566 in 2025) for the 18,000-seat facility (Searing, 2021). Noticeably, its predecessor (i.e., Old Oval) built in 1895 sat roughly 3,000 spectators on wooden bleachers and a primitive grandstand.

Similar to Stage 1, students and faculty were still found to donate labor and time (i.e., private self-funded interest) but now via formalized campus workdays that were approved by campus administrators (i.e., institution). Workdays provided days off school for stadium work and often involved pledges of money as well from students, faculty, administrators, and a rising class of business partners (i.e., external public interest). Faculty continued to offer their expertise as landscapers, architects, and engineers. At the University of Tennessee, for instance, their students and faculty participated in a work holiday in 1921 to assist the construction of Shields-Watkins Field. Shield-Watkins Field was a concrete $80,000 venue that seated 3,200, four times more expensive than its predecessor, Wait Field, and nearly twice as big (Seifried et al., 2020).

The timeframe of Stage 2 incorporates the erection of college football stadiums dedicated as memorials to veterans of World War I. Making use of the successful student campaign model targeting alumni, many institutions successfully rallied students, faculty, alumni, and community members beyond businesses to raise

significant amounts of financial capital to build war memorial stadiums (e.g., University of California, Kansas State University, University of Kansas, University of Missouri, Indiana University, University of Illinois, University of Nebraska, University of Minnesota, University of Oklahoma, University of Texas). The associated fundraising campaigns gave individuals a purpose to come together in a demonstration of public interest. Their collective effort created a tangible monument and rallying point around community members and alumni who fought in World War I while at the same time providing a venue for institutions which was valuable a part of their community.

In addition to war memorials, some alumni and community members continued to utilize their extensive wealth to build stadiums (e.g., Auburn University, Georgia Tech University, University of North Carolina, University of Cincinnati, Wake Forest University, University of Tennessee, University of Michigan, Southern Methodist University, Purdue University, and University of Nevada) as a legacy to their family (i.e., private interest) or demonstrate their capacity for philanthropy. Noticeably, alumni were increasingly being called upon to financially support institutional advancement within Stage 2. Highly organized public campaigns and private philanthropy were important and utilized financing types within Stage 2 and sought to embrace individuals from various wealth categories. Based on the size of the donation, incentives promised choice seating for a period (e.g., 5-10 years) in what could be characterized as an early form of a personal seat license. The University of Illinois used such an approach to cultivate pledges from alumni and the public to help finance the construction of Memorial Stadium in 1923 (Seifried & Hernandez, 2025).

Advancement of college football facilities within Stage 2 was boosted by a strong economy in the United States and the transition to professional or non-student led athletic departments. Institutions across the country followed in the footsteps of Northeastern and Midwestern institutions and built new football stadiums and installed new athletic departments on their campuses to signal their modernity and professionalism. College football stadiums, in many places, were viewed as the front porch of the institution and importantly they needed to send a signal of their school's prominence (Ingrassia, 2012). However, professional athletic departments featuring full-time employees recognized the importance of offering amenities (e.g., restrooms and concession/refreshment stands) that addressed spectator and participant expectations for comfort.

Local businesses viewed partnership, not just simple in-kind donations like the previous stage, as a mutually beneficial investment opportunity (Oriard, 2001). For instance, businesses were keen to capitalize on opportunities brought about by homecoming events, which became popular at this time, to rally support for football and other academic programs or buildings on campus (Oriard, 2001). Elsewhere architectural and engineering firms (e.g., Osborn Engineering) developed specifically to focus on sport venue construction which the athletic department contracted. Schools and communities found football as providing tangible (i.e., economic) and

intangible benefits (e.g., enhanced civic or campus pride, psychic income, identity, and loyalty).

Stage 3: Government Support as Leviathan Financing

Stage 3 (1930-1946) emerged when the Great Depression surfaced and continued through World War II as the financial stability of the United States and its citizens became more challenging financially. To attempt to stabilize the economy and organizations, the government implemented several schemes under the New Deal program developed by President Franklin Roosevelt's administration. In Stage 3, the government acted as a special interest group concerned with improving the economy. This was accomplished by investing in grants that allowed citizens to work on construction projects to earn a living and provide for their families. College football stadium projects were attractive because of their longevity and the aforementioned tangible and intangible social benefits they provided.

Within the college football stadium construction landscape, few projects were completed prior to the emergence of New Deal Programs because of a lack of funding and available physical resources at schools. Institutional income dropped with enrollments and state subsidies all but dried up in some locations causing institutional-level decision-makers to implement austerity measures (Ingrassia, 2012). To help quell the unemployment rate, Roosevelt created the Federal Emergency Relief Administration (FERA) in 1933 (Seifried & Demiris, 2022). The Federal Emergency Relief Administration did not improve employment as expected because the program required matching funds from state and local governments, up to three times the federal commitment. Most local governments simply did not have the ability to provide this funding (Seifried & Demiris, 2022).

In terms of college football stadium construction projects, FERA's successor, the Works Progress Administration (WPA), was an extremely important financing innovation and a demonstration of leviathan with respect to financial modernization. The WPA required approved projects to be socially useful and offer employment to both skilled and unskilled labor. The WPA proved successful providing work relief for approximately 8.5 million Americans (Howard, 1943). On average, WPA projects received 80% of funding from the federal government (USWPA, 1936), which allowed universities to invest in stadium construction they could not afford on their own. Again, one of the requirements for WPA funding was the project be considered socially useful (Van West, 1994). Since college football stadiums were structures that brought together thousands of individuals and offered beneficial psychic income and civic pride, such projects (n = 79) fit well with the objectives of the WPA (Seifried & Demiris, 2022).

Many stadium projects (e.g., Louisiana State University, University of Kentucky, North Carolina State University, University of Cincinnati, Michigan State University, University of South Carolina, University of Washington) involved upgraded press accommodations and incorporated the rise of radio to serve public interest and institutional needs (Seifried & Demiris, 2022). Schools did not initially

seek to generate revenue from the broadcasting of football games over the radio but primarily used it as an educational exercise for burgeoning communications programs (Oriard, 2000, 2001). However, as radio ownership increased and school income decreased, radio served as an appropriate medium to increase publicity and exposure for institutions while promoting the social benefits and psychic income derived from these games. Improved press boxes and radio accommodations became a symbol of modern facilities and new income from radio rights served to help facilitate and finance facility projects. Additional sources of financing, although not as common as with the New Deal programs, included funds from school funds (i.e. institution), revenues from non-student led athletic departments like radio, gate receipts, and concessions (i.e., internal public interest/institution), and private gifts (i.e., external public interest).

Stage 4: The Development of Ideology and Alumni Society Financing

Material shortages prompted by a diversion of resources toward World War II explain a lack of projects completed during the end of Stage 3. Still, the lack of construction projects did not mean college football lost enthusiasm from a private, public, or institutional perspective during World War II. Taking a leviathan approach, the government and its military used football to train soldiers and improve morale overseas (Seifried & Katz, 2011). The Office of War Information also produced approximately 7,500 words daily on American football occurring in the U.S. and other regions of the world that support football on camp bases and even bowl games in those communities during occupation (Seifried & Katz, 2015). Collectively, returning troops to the U.S. clamored for football and universities responded by expanding their stadiums.

Stage 4 (1947-1969) emerged resultantly and signaled an economic recovery and growth period in the U.S. which corresponded to a new era of financial modernization. Football continued to grow in importance on college campuses once soldiers returned home from military service since it was a large part of their training and entertainment (Seifried & Katz, 2011). To keep up with this interest, the complexity of college football venues continued in Stage 4 prompting institutions and athletic departments to develop new financial options.

Newly established alumni associations surfaced as a society of support to become an important cornerstone of fundraising by universities to assist campus programs and stadium construction or renovations. As one example, the alumni association of Colorado State University petitioned to the board of regents to help them build a new stadium during this period (Hansen, 1977). Notably, some alumni associations incorporated themselves as charitable organizations tasked with soliciting major gifts and smaller gifts by volume to aid in athletic department operations and capital improvements. These associations, like Baylor University's Stadium Corporation, expanded into utilizing full-time, paid personnel to operate more effectively and grow the capacity of philanthropic gifts from individuals, alumni, community members, businesses, and other important stakeholders (Seifried et al., 2021). This is a shift

away from the smaller, volunteer and student driven organizations of previous stages from a financial modernization perspective.

Additional growth within Stage 4 occurred in the vast use of revenue bonds (i.e., non-guaranteed), which became popular. Prior to World War II, private and government financing served as the main vehicle to construct stadiums (Williams & Seifried, 2013). To develop revenue bonds, institutions solicited funds from financial lending institutions, generally paying a higher interest rate, with non-guaranteed promises of future revenues their facilities could generate. For instance, many revenue bonds relied on promised future gate receipts and other traditional sources of stadium-related income (e.g., parking and concessions). Other sources of revenue discovered in the present study included the rise of dormitory rentals (incorporated into stadiums) and radio rights fees. Advertising and bowl game revenues also served as sources.

Finally, Stage 4 shows the additional and direct lobbying of the government by schools for appropriations to help finance college football stadium construction. Institutions felt empowered to lobby for this additional governmental support because of increased enrollments produced during this stage via the Serviceman Readjustment Act (i.e., G. I. Bill). Institutions needed to expand services, the aforementioned dormitories, and social offerings at an exceptional rate to keep up with the boom in enrollments. Further, venues at this time needed to be upgraded to remain up to date with new developing technologies such as the introduction of television to accommodate an increasing base of remote spectators. Louisiana State University (LSU), for instance, successfully recruited support from state appropriations during the 1950s for the renovation of Tiger Stadium to complete the north end zone expansion with such purposes in mind, in addition to collecting additional revenues from dormitory rentals (Seifried, 2016). Improvements to the economy in jobs and income compelled such upgrades and allowed institutions to signal they were cutting edge and at the forefront of societal trends and advances in technology. These attributes made institutions attractive for investment from business partners, corporate sponsors, and wealthy alumni, in addition to attracting future students and talented athletes (Ingrassia, 2012).

Stage 5: Athletic Foundations and Premium Seating Financing

Stage 5 (1970-1984) introduced the use of premium seating or luxury box leases to generate up-front and increased revenues to fund new stadium construction projects within revenue bonds. Luxury boxes were introduced in professional sports in the late 1960s with the opening of the Houston Astrodome (Titlebaum & Lawrence, 2011). Using the successful professional sport blueprint, colleges across the country began campaigns to sell luxury or skyboxes and other types of suites on multi-year leases to wealthy alumni and businesses to not only generate increased ticket revenue, but to finance the construction of said premium seating and new bleacher areas up-front with little debt service. Again, LSU serves as an example; in 1976, LSU added a second deck to the west side of Tiger Stadium. The $11.5 million project was financed primarily through luxury box leases (Seifried, 2016).

Revenues bonds emanating from advertising and sponsorship, along with television receipts also noticeably grew over Stage 5, signaling continued public interest/support and a developing ideology. New athletic-only foundation offices emerged as a derivative of alumni associations, which attempted to support revenue bonds by tapping into a much larger landscape of donors than just the established alumni base. Athletic foundation offices surfaced as non-profit organizations with full-time staff members dedicated to raising funds for athletics departments via both annual small gift campaigns and large donations. Their mission mainly aimed to provide scholarships, academic services, operational funds, and construction capital for athletic facilities. Today, athletic foundations exist as permanent fixtures on campus and often engage in work that parallels the athletic department (Hanson & Welty-Peachey, 2022). Athletic foundations also exist as support societies with respect to financing because they reached out to people who saw football and athletics generally as an important part of or way of life to support. In essence, planned gifts became an annual call to alumni and other members of a school's fan nation.

Finally, in a demonstration of leviathan, new governmental tax code changes with respect to charitable donations surfaced to facilitate financial modernization of college football stadiums. In the 1970s, the Excise, Estate, and Gift Tax Act was adjusted to include an amendment on taxing estate gifts. Specifically, large estate gifts, offered for charitable purposes, received attention and ultimately reduced the tax yield for the government by providing more monies of the gift to the recipient (Price, 1972). This change created a whole new strategy for athletic foundations to focus on securing large gifts upon which they could maximize the money received. Resultantly, an increased number of stadium projects could be completed in the future to realize larger more complex venues that serve a variety of stakeholders. The University of South Carolina, for example, led the way for this legislative change when it successfully recruited a gift from the estate of Thomas H. and Martha Brice to renovate what would become Williams-Brice Stadium (Seifried & Bolton, 2017).

Stage 6: Expansion of Athletic Foundations and Financing Opportunities

In Stage 6 (1985-2002), the advent of the aforementioned athletic foundation offices brought about a push for mega-gifts from individuals. In exchange for the enormous gifts only a small percentage of individuals or organizations are able to commit, athletic departments became inclined to name fields and venues after the donors, such as Rohrman Field at Purdue University's Ross-Ade Stadium and Boone Pickens Stadium at Oklahoma State University (Carmin, 2019). Many donors, including corporations, were also motivated to provide funds that not only help renovate the stadium but provide space for offices and academic services to improve the student-athlete experience. Examples include the Wayne Densch Center for Student-Athlete Leadership at the University of Central Florida and the John E. Jaqua Academic Center for Student Athletes at the University of Oregon, which was funded by Nike founder Phil Knight and named for founding Nike board member and Alumnus John E. Jaqua (Bachman, 2010).

Such changes toward athletic foundations led to the complete obsolescence of alumni foundations as a major financing resource. Again, this can be attributed to the fact that institutions relied more heavily on the solicitation of both small and large gifts within athletic foundations as part of a burgeoning ideology. This philosophy also led to a decline in the use of athletic department funds for capital projects as well. While the use of athletic department funds was significantly lower, they were still an important part of the larger portfolio of funding sources required to renovate and/or construct the complex and technologically advanced venues seen today. Suite rentals and revenue bonds also maintained a high presence in the financing portfolios developed by institutions of this era and matured as their numbers greatly multiplied.

Stage 7: Expanded Stadium Utility, Entrepreneurship, and Business Partners

Stage 7 (2003-present) continued the diversification of financing approaches by focusing on supporting non-competition additions to stadiums. Large monetary donations became more of a private interest, similar to gifts provided in Stage 2, to promote an individual or family's legacy. Small gift campaigns (e.g., buy a brick) emerged to provide opportunities for other individuals to declare their support for stadium construction and the institution generally as part of an ideology stage. Yet, the expansion of other sources of revenue also facilitates transition to this era. For instance, concessions expanded to provide more food and beverage options and thus additional price points to boost revenues. Next, premium seating, including newly developed club seating sections, surfaced as important sources of revenue to finance facility construction.

Business partnerships multiplied during this stage of development in addition to the expansion of business activities. As an example of the latter and of new entrepreneurial financing stage, the age of many stadiums and their heritage provided universities the opportunity to start tours of facilities, provide nostalgia sales, and sell or recycle parts of their stadia (e.g., seats, pieces of the field, bleachers, scoreboards, etc.) to generate additional revenue. In some instances, we discovered the pursuit of grants to help with preservation and even environmental ideological concerns. Regarding business relationships, universities increasingly developed entrepreneurial activities within renovated or new facilities such as establishing physical therapy clinics, creating non-gameday concessions or catering sales, and offering premium luxury or club seating space for rental to schedule events (e.g., wedding receptions, reunions, proms, banquets, business meetings, etc.). This also reflected another burgeoning ideology that sport stadiums should do more than sit vacant 40+ weeks a year and instead help service community and/or university needs.

Such efforts to diversify sources of income were necessary due to outside forces. The Tax Cuts and Jobs Act of 2017 repealed the 80-20 charitable deduction rule (Sharma, 2018). Previously, payments for priority seating or access to tickets, as a form of personal seat license at university athletic events, allowed donors to take an 80% charitable deduction on their taxes. Thus, an institution requiring donations ranging from $500 to $2,000 per seat could recruit donations by highlighting that

80% of that donation could be deducted on their personal income taxes (i.e., Section 13705 of the Code). During Stage 6 most institutions of higher education at the NCAA Division I FBS level required donors provide an annual financial gift to enjoy the opportunity to purchase season tickets and gain access to stadium clubs. Expectedly, many colleges collectively expected losses to be hundreds of millions of dollars each year. As example estimates made during a ten-year period up through 2016 show donors spent anywhere from $2.5 to $2.9 billion on seat licenses (Sharma, 2018). The implementation of the new Tax Cut and Jobs Act prompted many schools (e.g., University of Oklahoma, University of Florida, Southern Methodist University) to request donors potentially prepay their anticipated suite rental or personal seat license to make use of the available tax deduction through 2017. Lastly, it should be noted that donations and gifts remained high due likely to the perceptions that annual giving is a way of life.

Discussion and Conclusion

The present research endeavor attempted to establish a process for financial modernization using a theoretical sample within an abductive approach that studied the history of financing NCAA Division I FBS institutions from 1869 to 2025. Previous scholarship and legislation produced on modernization (i.e., general, ecological, or reflexive-based) inferred financial modernization but there were not any formal attempts to theorize the concept or its process. The current study argues reflexive and ecological forms of modernization are complemented but also notes their differences with financial modernization since it is associated with the increased likelihood of risk while pursuing stability, the establishment of classes of people, and meritocracy. The 7-stage ideal-type (table 3) helped develop the 8-stage process for financial modernization (figure 1) and provided a substantial list of markers of financial modernization ranging from simple self-funding to diversified financing portfolios for complex phenomena. In this instance, the scope of projects generally shows increased total and renovation costs over time except in eras of austerity (e.g., Stage 3- Depression). Further, the 7-stage ideal-type demonstrates, as Krosner (2000) claimed, groups change in size and strength as private interest transitions to public and later to an institutional field and ideology. More specifically, the ways in which supporters organize efforts to assist financing based on the awards or benefits they receive and their wealth-status is featured (e.g., suites, grandstands, etc.).

The 8-stage process model developed from the aforementioned sample demonstrates financial modernization starts via self-funded private interest (1). The notion of self-funded private interest argues individuals and groups with particular interest in developing products, services, and activities will initially engage in self-funding. Such an approach is necessary since potential purse holders see little value in supervising the product, activity, or service and regulating it due to its low level of publicity or small pockets of public support. In the present study, the private interest or self-funding approaches were initially developed by students and faculty via donated money, labor, and/or expertise.

As interest in a particular product, service, or activity grows, external public interest (2) surfaces as the next step in the financial modernization process. External public interest is associated with a small increase in the diversification of financing options or approaches. Such initiatives are executed as public awareness in the activity reaches and compels outside investors, although limited generally to in-kind gifts and small monetary donations. The current research shows alumni networks and business partnerships are initially cultivated during this stage in the process and used to support mutually beneficial interest in growing the sport of football. Alumni and universities enjoy interaction or engagement opportunities with each other in addition to intangible benefits such as pride, loyalty, and psychic income. Business partners and universities gain brand awareness and image benefits through associations. Internal public interest (3) by purse holders follows external public interest due to pressure placed on institutions by external parties. However, this produces minimal investment and regulation by purse holders to curb spending and boost revenues. Mainly, schools supported external and private interests to make sure the sport can survive, recognizing its utility to help create an attractive campus spirit.

Continued growth of the market related to a product, service, or activity eventually compels the development of institutional-level (4) investment strategies for support. First, there was a substantial increase in institutional funds committed and these were boosted through returns provided by technological innovations (e.g., radio and television) that produced revenues and expanded the reach of schools. In-house committees also served to support the development of particular products, services, or phenomenon. Ultimately, the expansion of participating institutions that support a product or service eventually create an institutional field (5). The present study, for instance, showcased the development of a large institutional field of football-playing institutions that created the need for stadiums to be created. Outside specialists and organizations (e.g., banking, financial lenders, insurance, etc.) surfaced subsequently to support institutional fields. Experts in specialty businesses (e.g., architecture, concessions management, retail, media, etc.) also emerged during this stage to help support the construction of institutional fields (i.e., intercollegiate athletics) and products like stadiums. Membership in an institutional field also creates pathways for communication to learn about available financing mechanisms to support construction. Diversification is enhanced in comparison to previous steps in the process.

The leviathan or governmental step (6) in the process of financial modernization suggests the size and scope of an institutional field has reached a point where the government has now taken interest in supporting products, services, and activities phenomenon produce. When an institutional field reaches a status where it is decided it has perceived social value, governments will create legislation and financial mechanisms to support its survival because doing so likely creates a positive impression on governmental decision-makers as much as it helps society at-large. In the current study, we found evidence of leviathan through the development of the New Deal programs to combat unemployment during the Great Depression.

Although not designed to finance stadium construction interest, the U.S. and state governments saw value in supporting stadium construction through federal funds and state appropriations. Continued use of a product, service, or activity can reach a point where it creates connections to an individual's and/or groups' way of life. In this instance, an ideology and associated societies of support (7) are born, which ignites new approaches to financing the legacies of interest. Government oversight continues to respond to market and technological changes. Specialized foundations and campaigns support generational changes and innovations further represent the transition to ideology. In the current study, specially designed athletic foundations, legislation to support charitable giving, and changing viewpoints that stadiums can offer additional services helped create new lines of funding such as small and large gifts.

Finally, when people believe a phenomenon can offer more than its original purpose and create new revenue opportunities, the present study discovered those phenomena can transition to become entrepreneurial-focused efforts (8). Entrepreneurial activities serve to re-image the use of products and services into financing plans to support their further development. An example discovered in the present work involved recycling of building materials or equipment and nostalgia sales to generate additional revenue. Next, incorporating non-sport-related businesses into stadia helped finance facilities due to their capacity to keep the facility open 40+ weeks a year. Overall, the diversification of financing is maximized at this stage.

Practical Recommendations and Future Research

To begin, potential research should examine and/or apply the developed process model presented in the current study to better understand other subjects that engage in financing. For instance, contract development and budgeting often create the need for financing. In mature institutional fields, it appears to survive, universities must diversify their financing portfolio to encompass a multitude of funding sources and partnerships. Further, when possible, they should look to develop or lobby for legislation that helps them. Second, we learned the source of financing, historically speaking, differs quite a bit in the college context in comparison to the professional sport context (e.g., Alakshendra, 2016; Crompton et al., 2003; Long, 2005; Maxcy & Larson, 2015) but it is clear practices in one often influenced the other at a later date. Gifts, endowments, and appropriations for institutions of higher education often produce "little demand for a return on investment" (Soebbing et al., 2022, p. 117). Thus, much of what was earned by programs "follow something of a vicious circle (or virtuous circle, depending on one's perspective) to maximize revenue, which in turn drives expenses as the returns are spent back on the resources that produce more revenue" (Maxcy & Larson, 2015, p. 79).

With the new era of name, image, and likeness and a soft salary cap for student-athletes now an expectation, universities will face more pressure to generate revenue from their sport facilities. Thus, developing an entrepreneurial mindset appears important. As betting becomes more established, accepted, and better regulated, on-site betting opportunities appear as one fruitful option to help financing interests.

Next, continued entrepreneurship with how institutions make use of their stadium space (e.g., health clinics, catering preparation, entertainment zones, and non-sporting event production/hosting) can generate important revenues on non-gamedays to help finance stadium construction. Embracing the environment and using it as a vehicle for financing also appears fruitful from a financial perspective via grants and increased willingness and expectations from stakeholders that facilities will not just be consumers but contributors to their communities. We expect most universities will act similarly on these items based on employee turnover that occurs amongst schools, ongoing legislative actions, and the aforementioned specialized firms that support interest associations and institutional fields.

Finally, several stages of the present ideal-type on financial modernization align with previous scholarship developed by Tutka and Seifried (2020) on the diffusion of innovations in college football stadium construction. For example, the development and diffusion of luxury suites, television and radio broadcasting in press boxes, and permanent choice seats equally impacts the construction of ideal-type stages in both Tutka and Seifried (2020) and the current study. In light of that work and the present research, it seems prudent that a future investigation could examine the diffusion of various financial practices developed and/or employed by institutions of higher education to finance stadium construction. Presently, there is limited scholarship with respect to the diffusion of innovations in sport from a quantitative perspective (Wanless et al., 2023). A prospective study on the diffusion of innovations of financing practices on college football stadiums offers a prime opportunity to further understand modernization.

Limitations

The present study of course has some limitations to acknowledge. First, archival research was conducted at only 47 institutions in the 134-school sample. Although documents and information were collected on each, it is likely that some information on construction projects and financing mechanisms were not recorded. Next, it is possible this could impact the percentage of financial strategies employed in the various ideal-type stages. Second, we employed an abductive reasoning process to draw conclusions. While supported by various secondary sources, we still relied upon the information we found and contextual conditions impacting college football and the U.S. generally. Again, it is possible the motivations or selection of financing approaches differed more substantially than perceived across the institutional field. Third, archives are susceptible to survivorship bias and may engage in the intentional distortion of record keeping practices to serve organizational directives (Demiris & Seifried, 2023). Still, we are confident our sample of institutions is strong and offers an adequate cross section of institutions across NCAA Division I FBS and from both historically-strong and less historically-accomplished football-playing institutions.

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