Sociocultural and Mental Health Adjustment of Black Student-Athletes: Within-Group Differences and Institutional Setting

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Research has shown that African American college students have a difficult time adjusting at predominately White institutions (PWIs) in comparison with historically Black colleges and universities (HBCUs) with regard to both general and race-related stressors (Neville, Heppner, Ji, & Thye, 2004; Prillerman, Myers, & Smedley, 1989; Sedlacek, 1999). For college student-athletes, the campus environment can challenge their capacity to fit in and adhere to academic and social expectations, perhaps especially for Black student-athletes (BSA). The current study therefore examined the sociocultural and mental health adjustment of 98 BSA based on their perceived social support, perceived campus racial climate, team cohesion, and life events using latent profile analysis (LPA). Results indicated three distinct profile groups: Low Social Support/Cohesion, High Minority Stress, and High Social Support/Cohesion. Profiles were predictive of adjustment concerns and campus setting (PWIs vs. HBCUs), highlighting within-group differences among BSA. Implications for interventions to facilitate and support healthy adjustment and success for BSA are discussed.

Keywords: adjustment, collegiate athletes, African American, social support, sport

The extent to which cultural diversity exists among the student body at predominately White institutions (PWIs) can significantly impact the experience of African American students (Cheatham, 1992; Cuyjet, Howard-Hamilton, & Cooper, 2010; Prillerman et al., 1989; Tinto, 1993). Both male and female African American students attending PWIs may potentially experience the campus environment as hostile, alienating, insensitive, and depressing due to the limited number of racial minority students on campus compared with White students (Henderson, 1988).
Perceived racism has been defined as a system of beliefs and attitudes of individuals and institutional policies that pose obstacles to racial minorities because of their phenotypic characteristics (e.g., skin color, hair texture, width of nose, size of lips) or ethnic group affiliation (Clark, Anderson, Clark, & Williams, 1999). Institutional racism, which refers to systemic policies that produce negative outcomes for minorities, seems to be more prevalent on university campuses than individual racism, which refers to direct discriminatory acts toward a person by other individuals or groups (Sedlacek, 1999). A previous study found that 100% of Black male and female college student participants reported experiencing perceived racism in their lifetime (Landrine & Klonoff, 1996). In another study, 98% of the African American student participants at a PWI reported experiencing a discriminatory event in the past year, which was found to be significantly positively correlated to depressive symptoms and negatively correlated with life satisfaction (Prelow, Mosher, & Bowman, 2006). In addition, a study by Ancis, Sedlacek, and Mohr (2000) suggested that in comparison with other ethnic groups, African Americans, specifically at PWIs, reported more negative experiences such as racial hostility; greater pressure to conform to stereotypes; less equitable treatment by faculty, staff, and teaching assistants; and racism from faculty.

Race-related stress is defined as “the psychological discomfort that results from a situation or event that an individual appraises as troubling because of racial discrimination or isolation” (Plummer & Slane, 1996, p. 303). Research has found that Black college students at PWIs, on average, experience both race-related stress that affects their adjustment and general stress (Edmunds, 1984; Gibbs, 1973; Henderson, 1988; Neville et al., 2004; Prillerman et al., 1989; Sedlacek, 1999; Smedley, Meyers, & Harrell, 1993). In addition, it has been suggested that Blacks report more racially stressful situations than Whites at PWIs (Plummer & Slane, 1996), such as difficult interpersonal relationships between Blacks and Whites; critical incidents impacting their racial identity development (Baum & Lamb, 1983; Burbank & Thompson, 1971; Chickering & Reisser, 1993; Gibbs, 1973); and racial prejudice or discrimination problems associated with living in residence halls, contact with campus police, interracial dating, athletics, academic performance, and other aspects of campus life (Sedlacek, 1999). For African American students who perceived the campus as racially hostile, a significant relationship has previously been found between depression, loneliness, and anxiety (Mounts, 2004). Further, race-related stress has been found to be a predictor of first-year grade point average (GPA) for Black students (Prillerman, 1989).

Positive sociocultural adjustment for Black college students is often facilitated by support from instructors (Boulter, 2002; Hinderlie & Kenny, 2002), parents (Mounts, 2004), and peers (Levin, Van Laar, & Foote, 2006). Researchers have identified that faculty contact outside of the classroom increases Black students’ abilities to make self-assessments (Fleming, 2001), their perceptions of a sense of community (Sedlacek, 1999), and their racial socialization (the development of a healthy Black identity), which appears to positively contribute to the adjustment of Black students (Anglin & Wade, 2007). These facilitators of adjustment may be easier to foster on Black campuses than at PWIs. In comparative studies, African American students at PWIs where fewer Black faculty are visible and available to serve as mentors (Hinderlie & Kenny, 2002) reported a higher perception of minority stress compared with students at historically Black colleges and universities.
Adjustment in Black Student-Athletes

Sedlacek reported that Black students at PWIs may experience feelings of loneliness and alienation, which may lead them to seek off-campus supports. On the other hand, Black students who attend HBCUs appear to devote more effort to academic activities and achieve higher academic, educational, and social gains (DeSousa & Kuh, 1996; Flowers, 2002) compared with those who attend PWIs. What is missing from these studies is a consideration of the impact of college athletic participation on the adjustment process of African American students. Athletic participation provides a different means of collegiate social integration, which may potentially hinder or facilitate academic gains.

Adjustment of Black College Student-Athletes

College student development theorists have argued that athletic participation can increase student-athletes’ overall satisfaction with their college experience, provide motivation for attaining a degree, and provide an avenue to develop interpersonal and leadership skills (Astin, 1993; Pascarella & Terenzini, 2005). The team environment, and that of the athletic department, may ease common feelings of isolation and stress encountered by college students because they provide a unique, ready-made social network for student-athletes (Miller & Kerr, 2002). Athletic participation can promote developmental, social, emotional, and attitudinal experiences that aide first-year student-athletes in their transition to college, despite the new challenges of the collegiate experience (Melendez, 2006).

Beyond the general student-body stressors, however, student-athletes have additional time constraints imposed by practice and workouts, competition, study hall, and travel (Cogan & Petrie, 1996; Ridinger & Pastore, 2000). This can possibly lead to increased feelings of isolation from the campus population (Harris, Altekruse, & Engels, 2003), especially for student-athletes who receive increased media attention (Ridinger & Pastore, 2000; Sellers & Damas, 2002). Unlike most students, athletes must achieve a balance in meeting expectations to attend classes regularly and complete assignments on time (Harris et al., 2003). Learning to adjust to the demands of college courses can be particularly daunting for student-athletes who are not adequately prepared for college. In high school, African American student-athletes, particularly those from low-income, urban, and/or rural communities, tend to manifest incongruence between their obtained GPA and actual levels of academic abilities as a result of receiving lower quality instruction and less demanding curriculum, which can contribute to academic difficulties in college courses (Sellers, Kuperminc, & Damas, 1997). Research also shows that more African American student-athletes tend to be first generation college students in comparison with their White student-athlete counterparts (Sellers & Damas, 2002). As a consequence, they may receive less support from family and friends in terms of learning how to navigate academic, social, and cultural aspects of college life. Ultimately, if they fail to succeed in class, it can lead to academic ineligibility to compete and potentially the loss of their athletic scholarships (Harris et al., 2003).

It has been suggested that the pressures and demands of athletics, the constant balancing act of multiple roles, and the pressure to grow up quickly and make difficult life decisions can potentially lead to high-risk behaviors such as excessive drinking and engagement in casual sexual experiences (Chickering & Reisser, 1993; Damm & Murray, 1996). In fact, student-athletes have been found to have
significantly higher proportions of risky lifestyle behaviors and alcohol-related problems than nonathletes (Damm & Murray, 1996; Martens, Dams-O’Connor, & Beck, 2006). Downey (2005) found that over time, student-athletes tended to experience a decline in their academic and personal/emotional functioning, and their adjustment scores were significantly lower than nonathletes.

According to Hinkle (1996), athletes tend to be less inclined to seek professional help for psychosocial problems such as depression, adjustment issues, anxiety, and substance abuse. Emotional distress can be exacerbated by the myriad of stressors experienced by the athlete. For instance, if competition anxiety is left unaddressed, it could potentially develop into more problematic global anxiety, or if disappointment and sadness related to difficulties experienced in the competitive arena are not addressed, it could potentially lead to depressed mood; both instances can increase one’s risk for alcohol and substance use (Hinkle, 1996). In a study of Black football players at PWIs, although Melendez (2008) did not directly access for psychological concerns, he reported some indication of self-reported depressive and anxiety symptoms, academic difficulties, and health-related issues.

Student-athletes’ adjustment has been found to be positively correlated with sport satisfaction and athletes’ relationships with roommates (Quarforth, Brewer, Petitpas, Champagne, & Cornelius, 2003) and teammates who provide advice in times of need (Jackson & Krane, 1993). However, it has been suggested that African American student-athletes seem to rely more heavily on off-campus support networks, which can potentially increase their feelings of isolation from general campus life (Sellers & Damas, 2002). These off-campus support networks may be social cliques primarily consisting of peers who are not focused on earning a college degree (Adler & Adler, 1991), thereby possibly negating positive facilitation of one’s student role and associated academic expectations. While student-athletes’ parents may be able to keep them focused on their academic role, student-athletes may have little direct contact with their family (Adler & Adler, 1991). In addition, social supports outside of the athletic environment may not buffer the experiences of Black student-athletes within the sport context.

In a study by Singer (2005), Black student-athletes reported that manifestations of racism occurred in terms of them (a) not being offered major decision-making roles or not being placed in leadership positions in collegiate and professional sports; (b) needing to excel more than White counterparts to gain such positions off the field; and (c) sometimes being treated differently than their White counterparts (e.g., being scheduled into classes they did not need to maintain eligibility, being singled out for random drug tests, not being afforded as many chances when they made mistakes). Sellers and Damas (2002) also pointed out that failures of Black student-athletes are often made very public. Melendez (2008) reported that African American student-athletes at a PWI experienced feelings of isolation, being misunderstood, powerlessness, mistrust from teammates and others, being judged, pressure to assimilate to different values, and being stigmatized as a Black athlete. They also expressed concerns about living in an inhospitable city where they experienced incidences such as racial slurs.

When considering gender as well, some researchers have acknowledged that the experience of African American female student-athletes is lacking (Sellers & Damas, 2002; Sellers et al., 1997). African American female student-athletes may experience both racism and sexism, and possibly classism, in both the general
campus life and athletic sport contexts (Bruening, Armstrong, & Pastore, 2005; Foster, 2003). Black female student-athletes have reported feeling prejudged, a need to excel beyond all expectations and conform to social behaviors desired by coaches and counselors, a sense of segregation on particular teams (e.g., track and field), and underrepresented in leadership roles off the field (Foster, 2003). They have also reported feeling “silenced” in regard to not being noticed by not having their voices heard both in sport and in larger societal contexts (Bruening et al., 2005). Black female student-athletes have also reported feeling sexualized by male student-athletes and nonathletes, who at times make negative comments and degrading remarks (Foster, 2003).

Although racism may be perceived within the overall athletic environment or in the general college climate, on an individual level, Black student-athletes may potentially experience less racism within the team context. According to Brown, Brown, Jackson, Sellers, and Manuel (2003), the amount of contact that the incoming White college student-athletes had in high school with Black teammates in group team sports (e.g., baseball, basketball, lacrosse) increased their support for government policies for minorities and their level of positive affect toward Blacks, in comparison with peers who played individual team sports (e.g., cross country, track, wrestling). In addition, they found that the White female athletes exhibited less covert prejudice, more positive affect, and support for governmental policy changes than the White male athletes (Brown et al., 2003).

Present Study

The present study employs latent profile analysis (LPA) to understand the co-occurrence of social support, perceived campus racial climate, team cohesion, and life events in the adjustment of African American student-athletes. College adjustment scores and campus environment type will be used to predict the emerging profiles. LPA has been used in studies examining patterns of alcohol use (O’Connor & Colder, 2005) and attitudes toward school violence (Frisby, Kim, & Wolfmeyer, 2005), and it represents an innovative analytic technique to understand the profiles of African American student-athletes.

Research Questions and Hypotheses

The current study sought to answer three research questions: (a) Do different profiles exist among African American student-athletes as defined by perceived social support, perceived racial campus climate, team cohesion, and life events? (b) Can subscale scores on the College Adjustment Scale (CAS) be used to predict profiles? (c) Do the profiles of African American student-athletes vary as a result of campus environments (PWIs vs. HBCUs)?

Based on the aforementioned research questions, three hypotheses were established:

1. Four profiles were hypothesized to emerge: (a) Profile 1 scores would reflect strong social support, a lack of minority stress on campus, a sense of good fit with the team, and either few stressful events or positive stressful events; (b) Profile 2 scores would reflect strong social support and sense of good fit on
team, experiences of minority stress on campus and moderate-positive stressful events; (c) Profile 3 scores would reflect inadequate social support, little to no minority student stress, a sense of good fit with the team, and either few stressful events or moderate-positive stressful; and (d) Profile 4 scores would reflect inadequate social support, experiences of minority stress on campus, lack of fit on the team, and negative stressful events.

2. It is hypothesized that the scores on the seven CAS subscales would evidence differential patterns across profiles. Profiles 1 and 3 would be characterized by healthy adjustment scores; Profile 2 would be characterized by moderate-level healthy adjustment scores; and Profile 4 would be characterized by maladaptive adjustment scores.

3. It is hypothesized that distinct profiles would emerge for African American student-athletes who attend PWIs vs. HBCUs, using campus type as a predictor. More specifically, African-American student-athletes at HBCUs would exhibit lower minority student stress and higher level of perceived social support contrary to hypothesized Profile 2 and Profile 4. No differences were expected in the profiles for team cohesion and stressful life events as a function of campus type.

**Method**

**Participants**

The student-athletes in the current sample (N = 98) primarily self-identified as African American (55%, n = 54) and male (64%, n = 63), with a mean age of 19 years (SD = 1.58). Combined parental education (mother and father) consisted of GED (n = 5), some high school (n = 6), high school degree (n = 41), some college experience (n = 46), associate’s degree (n = 18), bachelor’s degree (n = 46), master’s degree (n = 21), and graduate/professional degree (n = 3). Seventy percent (70%) of the participants attended PWIs (n = 69) and 30% attended HBCUs (n = 29). Student-athletes in this sample were active in Division I-A PWI (n = 61), Division I-AA PWI (n = 8), Division I-AA HBCU (n = 18), and Division II HBCU (n = 11) athletic programs.

**Instruments**

**Demographics.** Participants completed a demographic sheet indicating their age, gender, sport, ethnic identity, scholarship status, eligibility status, etc. Participants were asked about the frequency with which they communicated with friends and family and through what means, and GPA via the Communication Assessment Questionnaire developed by author. Demographic information is summarized in Table 1.

**College Adjustment Scale.** The College Adjustment Scale (CAS; Anton & Reed, 1991) assesses nine domains of developmental and psychological problems encountered by college students using a 4-point Likert scale ranging from 1 (false) to 4 (very true). Only seven subscales (84 items total) were used in the current study: anxiety, depression, self-esteem, substance abuse, interpersonal relationships, family problems, and academic concerns. Two subscales, suicide and career, were
Table 1  Demographics of Participants

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Note. * Some participants did not reply; ^ Participants could choose more than one response; percentages total more than 100%. N = 98.
not administered. Internal consistency for this study ranged from .71–.82, with an average of .79.

**Life Events Survey for Collegiate Athletes.** The Life Events Survey for Collegiate Athletes (LESCA; Petrie, 1992) assesses extraneous stressors experienced by student-athletes in the previous 12 months. The 69-item LESCO uses an 8-point Likert scale ranging from −4 (*extremely negative*) to +4 (*extremely positive*). Participants only identify life events that have taken place in their life and rate those events. Representative events included were failing an important exam, major change in sleeping habits, discrimination from teammates-coaches, conflict with roommate, suspended from team for nonacademic reasons, and injury to teammate(s). In case a student athlete was a parent, the researcher added one event, “becoming a parent” and “child” to the list of family members (e.g., mother, father, sister) under the statements “death of a close family member” and “serious illness or injury of a close family member.” Test-retest reliabilities for the scale range from .76 to .84. The scale is tallied to indicate participants’ negative life stress score, positive life stress score, or a total composite life stress score (which was used in this study). Significant correlations between the LESCA NEG score and the Social and Athletic Readjustment Rating Scale and athletic injury have been reported (Petrie).

**Minority Student Stress Scale.** The Minority Student Stress Scale (MSSS; Smedley et al., 1993) consists of 33 items and assesses stress that students of color may experience on their campus and attribute to their race/ethnicity using a 6-point Likert scale that includes anchors such as 0 (*does not apply*), 1 (*not very stressful*), and 5 (*very stressful*). The MSSS includes two distinctive types of stress: minority-specific stressors (“few students of my race are in my class”) and generic stressors (“the university is an unfriendly place”). The MSSS five subscales include (a) Social Climate Stressors (e.g., few professors of my race, few students of my race in my classes); (b) Interracial Stressors (e.g., White-oriented campus culture, negative relationship between different ethnic groups); (c) Intragroup or Within-group Stressors (e.g., pressure to show loyalty to own race, relationships between males and females of own race); (d) Racism and Discrimination Stressors (e.g., being treated rudely or unfairly due to race, having to prove abilities); and (e) Achievement Stressors (e.g., doubts about abilities, family expectations and pressure due to being a first generation college student; Smedley et al., 1993). Each subscale is scored to indicate high stress, but also averaged together to produce a total minority-status stress score. For this study, the total score was calculated which ranges from 0 to 165. Cronbach alpha was .95 for this study.

**Perceived Social Support Scale-Revised.** The Perceived Social Support Scale (PSS; Procidano & Heller, 1983) was originally designed to measure social support from friends, family, and teachers. The present researcher modified the PSS by substituting “instructors” for “teachers” and included a fourth subscale domain for “coaches/administrators.” The PSS-Revised consisted of 10 items for each subscale using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) for possible subscale totals of 10–50. Higher z-scores indicate a higher level of perceived social support. For this study, Cronbach alpha was .87.

**Group Environment Questionnaire.** The Group Environment Questionnaire (GEQ; Carron, Brawley, & Widmeyer, 2002) consists of four subscales (18 total
items) to measure perceived team cohesion using a 9-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). Group Integration-Task examines the perceived degree of closeness and bond of the team toward a common goal. Group Integration-Social examines the perceived degree of closeness and bond of the team as a social unit. Interpersonal Attractions to Group-Task examines the individual student athlete’s personal involvement in working toward the group goals. Lastly, Interpersonal Attraction to Group-Social examines the student athlete’s feelings of acceptance and social interaction with the team. In this study, Cronbach alphas were .62, .62, .71, and .62, respectively. Similar to the 2007 study by van Raalte, Cornelius, Linder, and Brewer, in the current study, the two social and task subscales were combined to form Team Social Cohesion and Team Task Cohesion, respectively.

Procedures

We solicited participants for the study through several avenues: face-to-face recruitment, e-mail recruitment forwarded by an athletic department staff, and flyers handed out by an athletic department staff to student-athletes in orientation classes and minority student athlete mentor programs. All participants provided informed consent to participate in the research study. Data were collected through an encrypted online survey, which included a demographic sheet and aforementioned six measures. The survey administration took approximately 30–60 min to complete. For their participation in the study, all participants were eligible to enter into a drawing to receive one of three incentives in accordance with NCAA Bylaw 16.11.1.11.2 (“NCAA Division I Manual,” 2009) and approved by campus Internal Review Board (IRB).

Statistical Analysis

Latent profile analysis (LPA) was conducted to estimate the probability that an individual belongs to one of several profiles based on social support, minority stress, life stress, and team cohesion. LPA is useful when studying populations with heterogeneous characteristics, such as Black student-athletes. The basic premise of LPA is that within profiles the observations are locally independent. The goal of LPA is to identify the smallest number of profiles that describes the association between social support, minority stress, life stress, and team cohesion. The results for the characteristics of the identified latent profiles are expressed in probabilities for having high/low levels of social support, minority stress, life stress, or team cohesion, and the prevalence or proportion of student-athletes in each profile (Tabachnick & Fidell, 2007; Vermunt & Magidson, 2002).

After the appropriate number of latent profiles were determined, the profiles were used to predict outcomes based on institution type (PWIs vs. HBCUs) and based on CAS subscales, utilizing latent profile regression analysis (Guo, Wall, & Amemiya, 2006). Each set of outcomes was modeled separately. Results associated with CAS subscales are presented in the form of odds ratios. All scales and subscale scores were transformed to z-scores for ease of analysis. These analyses must be considered exploratory, and replication with other Black student-athletes is needed to verify any significant relationships found here. Given the exploratory
nature of these analyses, alpha was relaxed to .10 to identify any marginally significant effects that may be replicable with a larger sample.

**Determining model fit.** All analyses were conducted using MPlus 5.0 (Muthén & Muthén, 2009). With latent profile models, there are multiple statistical indicators of model fit and no particular index is considered superior than others. In LPA, a combination of statistical considerations and substantive theory are used to decide on the best fitting model. In this analysis, the Bayesian Information Criterion (BIC; Schwarz, 1978) and the Sample Size Adjusted BIC were used to evaluate improvement in model fit for each successive class because simulation studies suggest it provides the most reliable indicators of true model fit (Nylund, Asparouhov, & Muthén, 2007). Decreases in the BIC suggest better fitting models (Muthén & Shedden, 1999); hence, if the addition of a class lowers the BIC with respect to the previous model, then the latter is preferred. Another index used to determine how well the model profiles participants was entropy (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). Entropy denotes how possible it is to predict class membership given the observed indicators. Values range from 0 to 1, where values closer to or exactly 1 indicate better classification. Finally, parametric bootstrapping, a repeated sampling technique used to compare hypotheses of class numbers, was examined as another indices of class model fit (Efron & Tibshirani, 1993).

**Treatment of missing data.** The MPlus software uses full information maximum likelihood estimation under the assumption that data are missing at random (Arbuckle, 1996; Little, 1995), which is a widely accepted way of handling missing data (Muthén & Shedden, 1999; Schafer & Graham, 2002). All subjects were included in the latent profile analyses, despite missing data on one or more of the latent class indicators. The covariance coverage (proportion of data present) for all variables ranged from 0.949 to 1.0, well above minimum thresholds for establishing adequate coverage (e.g., .10; Muthén & Muthén, 2009). The mixture missing command was used in all analyses to account for missing data.

**Results**

**Latent Profile Analysis (LPA) of Social Support, Minority and Life Stress, and Cohesion**

LPA was conducted to determine the optimal number of profiles and their associated characteristics. LPA fit indices for profile solutions are summarized in Table 2. As evidenced by the BIC, the two-class solution emerged as the optimal fit for the data, while the three-class solution represented a better fit than the four-class solution. By comparison, the three-class solution indicated a better fit and acceptable criteria based on the parametric bootstrap (Efron & Tibshirani, 1993), entropy, and conceptual understanding and will be the class solution used.

**Characteristics of the Profiles**

The three-class model identified one group with low team cohesion, minority stress, and social support; one group high in minority stress with moderate social
Adjustment in Black Student-Athletes

Table 2  Model Fit Indices for 1–4 Class Solutions of Social Support, Minority Stress, Life Stress, and Team Cohesion

<table>
<thead>
<tr>
<th>Class Solution</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>Entropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Class solution</td>
<td>1400.167</td>
<td>1368.588</td>
<td>—</td>
</tr>
<tr>
<td>2 Class solution</td>
<td>1393.421</td>
<td>1342.896</td>
<td>0.613</td>
</tr>
<tr>
<td>3 Class solution</td>
<td>1403.125</td>
<td>1333.652</td>
<td>0.753</td>
</tr>
<tr>
<td>4 Class solution</td>
<td>1417.506</td>
<td>1329.086</td>
<td>0.779</td>
</tr>
</tbody>
</table>

Note. Bold indicates best fit. Best fit was determined by BIC (Bayesian Information Criterion), Adjusted BIC, and Entropy. Entropy is not calculated for 1 class solutions.

N = 98.

support and team cohesion; and a final group with high social support, low minority stress, and high team cohesion. Figure 1 displays the deviations from the mean and characteristics of the three identified latent profiles along with percentages of student-athletes. Profile labels were assigned based on the overall pattern and presentation of support, form of stress, and team cohesion.

Table 3 summarizes the mean z-scores for each profile. Profile 1 (n = 14) was characterized as Low Social Support/Cohesion (LSS/C; 14%). Student-athletes

![Figure 1](image)

Figure 1 — Defining characteristics and deviations from the sample mean of each class.
in this profile had low levels of perceived social support (−0.54), low levels of minority stress (−0.55), low levels of team social cohesion (−1.30), and low levels of team task cohesion (−0.98) as measured by z-scores’ distance from the mean. This profile had a z-score relatively close to the mean for life stressors (−0.02), which may represent average life stressors. Profile 2 (n = 36) was labeled as High Minority Stress (HMS; 37%). Student-athletes in this profile had high levels of minority stress (0.92), possibly negative life stressors (−0.33), and low levels of team task cohesion (−0.20) based on z-scores’ distance from the mean. Z-scores were relatively close to the mean for perceived social support (−0.08) and team social cohesion (−0.05). Finally, Profile 3 (n = 48) was labeled as a profile of student-athletes with High Social Support/Cohesion (HSS/C; 49%). Student-athletes had high levels of perceived social support (0.22), team social cohesion (0.41), and team task cohesion (0.43). Z-scores represented moderately low levels of minority stress (0.55) and possibly positively perceived life stressors (0.24). All three profiles were present on each campus (PWI vs. HBCUs). However, the absence of a distinct profile of HMS for students at HBCUs that had a probability of 1.00 at PWIs (p < .05) was observed.

Table 3  Class Means of Most Likely Class Membership for Three-Class Model

<table>
<thead>
<tr>
<th>Class 1: Low Social Support/Cohesion (n = 14)</th>
<th>Class 2: High Minority Stress (n = 36)</th>
<th>Class 3: High Social Support/Cohesion (n = 48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Social Support</td>
<td>M 95% CI (LL, UL)</td>
<td>M 95% CI (LL, UL)</td>
</tr>
<tr>
<td>Minority Student Stress</td>
<td>−0.54 (−1.43, 0.36)</td>
<td>−0.80 (−0.45, 0.29)</td>
</tr>
<tr>
<td>Life Events</td>
<td>0.92 (−0.12, 1.97)</td>
<td>−0.55 (−0.96, −0.13)</td>
</tr>
<tr>
<td>Team Social Cohesion</td>
<td>−1.30 (−1.98, −0.62)</td>
<td>−0.05 (−0.55, 0.45)</td>
</tr>
<tr>
<td>Team Task Cohesion</td>
<td>−0.98 (−1.45, −0.52)</td>
<td>0.41 (−0.09, 0.91)</td>
</tr>
</tbody>
</table>

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

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Outcomes associated with each profile. Table 4 summarizes the odd ratios estimates (OR) for profile membership in relation to CAS subscales as derived with latent profile logistic regression models. Higher z-scores on the CAS subscales indicate a higher prevalence of the problems associated with each subscale.
Table 4 Comparative Association Between Means of Class Membership and CAS Subscales

<table>
<thead>
<tr>
<th></th>
<th>Low Social Support/Cohesion vs. High Minority Stress</th>
<th>High Social Support/Cohesion vs. High Minority Stress</th>
<th>High Social Support/Cohesion vs. Low Social Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic problems</td>
<td>0.30</td>
<td>−0.07</td>
<td>−0.37</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.56</td>
<td>−0.92</td>
<td>−1.48**</td>
</tr>
<tr>
<td>Interpersonal problems</td>
<td>2.35*</td>
<td>−1.05*</td>
<td>−3.40*</td>
</tr>
<tr>
<td>Depression</td>
<td>0.52</td>
<td>−1.85**</td>
<td>−2.36**</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>−0.02</td>
<td>−0.97**</td>
<td>−0.99</td>
</tr>
<tr>
<td>Family problems</td>
<td>−2.14**</td>
<td>−2.32</td>
<td>−4.46*</td>
</tr>
</tbody>
</table>

Note. All associations are given as odds ratios.

**p < .05; *p < .10.

**Low social support/cohesion vs. high minority stress.** Student-athletes in the LSS/C profile (M = 2.00, SD = .53) were two times more likely to have interpersonal problems than those in the HMS profile (M = 0.20, SD = .81, p < .10). Student-athletes in the LSS/C profile (M = 1.65, SD = 1.27) were two times as more likely to have family problems than those in the HMS profile (M = −0.08, SD = .63, p < .05).

**High social support/cohesion vs. high minority stress.** Student-athletes in the HMS profile (M = 0.13, SD = .90) were more likely to suffer from depressive symptoms than those in the HSS/C profile (M = −0.57, SD = .37, p < .05). HMS profile participants (M = 0.20, SD = .81) were more likely to have interpersonal problems than those in the HSS/C profile (M = −0.45, SD = .76, p < .10). Student-athletes in the HMS profile (M = 0.42, SD = 1.05) were more likely to have lower self-esteem than those in the HSS/C profile (M = −0.38, SD = .73, p < .05).

**High social support/cohesion vs. low social support/cohesion.** Student-athletes in the HSS/C profile (M = −0.47, SD = .65) reported fewer anxiety symptoms compared with those in the LSS/C profile (M = 0.70, SD = 1.02, p < .05). By comparison, student-athletes in the LSS/C profile (M = 0.68, SD = 1.16) were twice as likely to report depressive symptoms as those in the HSS/C profile (M = −0.57, SD = .37, p < .05). Student-athletes in the LSS/C profile (M = 2.00, SD = .53) were three times more likely to have interpersonal problems than those in the HSS/C profile (M = −0.45, SD = .76, p < .10). Student-athletes in the LSS/C profile (M = 1.65, SD = 1.27) were four times more likely to have family problems than those in the HSS/C profile (M = −0.59, SD = .34, p < .10).

There were no statistically significant differences across profiles for academic problems: LSS/C profile (M = 0.30, SD = .88), HMS profile (M = −0.003, SD =
1.00), and HSS/C profile ($M = -0.08, SD = 1.01$), nor for substance use: LSS/C profile vs. HMS profile (OR = 11.13), HMS profile vs. HSS/C profile (OR = 0.97), and HSS/C profile vs. LSS/C profile (OR = 10.74). The results did reveal that student-athletes had higher probabilities of falling into the normal range for drinking behaviors: LSS/C = 0.68, HMS = 0.96, and HSS/C = 0.96.

**Discussion**

The aim of this study was to identify profiles based on social support, minority stress, life stress, and team cohesion for Black student-athletes at PWIs and HBCUs. LPA results indicated multiple profiles of student-athletes supporting the study’s first research hypothesis predicting multiple profiles. In particular, there were three distinct profiles: (a) Low Social Support/Cohesion (LSS/C), (b) High Minority Stress (HMS), and (c) High Social Support/Cohesion (HSS/C). The research hypothesis predicted four profiles, the resulting profiles as well as a profile with high social support and high minority stress. The lack of this profile may reflect feelings of being less supported when experiencing high minority stress, thus revealing only a profile with low social support and high minority stress.

A second major hypothesis of this study sought to investigate the extent to which identified profiles predicted sociocultural and mental health adjustment based on CAS subscale scores (e.g., anxiety symptoms, interpersonal problems, depressive symptoms). Overall, the High Social Support/Cohesion profile appeared to have little to no psychological concerns in comparison with the Low Social Support/Cohesion and High Minority Stress profiles. It is important to note that the High Social Support/Cohesion profile did not show a statistically significant difference on self-esteem in comparison with the Low Social Support/Cohesion profile. This finding may display the role athletic identity may play in a student-athlete’s development of self-esteem (i.e., if they are performing well their self-esteem may be higher despite the lack of support they may perceive).

The Low Social Support/Cohesion profile seemed to have a significantly higher prevalence of anxiety symptoms, depressive symptoms, interpersonal problems, and family problems than the High Social Support/Cohesion profile. This finding is consistent with extant research that demonstrates a significant relationship between social support and emotional well-being (Boulter, 2002; Buote et al., 2007; Dennis, Phinney, & Chuateco, 2005; Friedlander, Reid, Shupak, & Cribbie, 2007; Hinderlie & Kenny, 2002; Jackson & Krane, 1993; Levin et al., 2006; Quarforth et al., 2003). In comparison with the High Minority Stress profile, the Low Social Support/Cohesion profile had a significantly higher prevalence of interpersonal problems and family problems. From this finding, it raises the possibility that interpersonal conflict may contribute to student-athletes feeling unsupported, or conversely, student-athletes feeling unsupported may possibly lead to interpersonal conflict.

The High Minority Stress profile displayed a significantly higher prevalence of depressive symptoms and interpersonal problems than the High Social Support/Cohesion profile. It is possible that the type of interpersonal conflicts experienced by student-athletes in the High Minority Stress profile may in part be related to racism or discrimination. In fact, high rates of depression have previously been found to be positively related to Black students who experience racism or
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discrimination (Ancis, Sedlacek, & Mohr, 2000; Mounts, 2004; Prelow et al., 2006). This finding may suggest that even with moderate levels of social support, student-athletes may still be experiencing psychosocial difficulties due to racism or discrimination (Melendez, 2008; Smedley et al., 1993). As a consequence, student-athletes in the High Minority Stress profile may exhibit self-segregation to same race/ethnic group and reluctance to form relationships with out-groups and/or may express frustration about feelings of being disrespected because of their race (Melendez, 2008; Singer, 2005; Tatum, 1997). It would be important to consider if increased levels of social support might moderate the effects of minority stress.

Lastly, as stated in hypothesis 3, which predicted a difference in profiles based on campus type (PWI vs. HBCU), a distinct profile characterized by high minority stress was found to only exist among African American student-athletes attending PWIs. Such a profile was not evident among African American student-athletes attending HBCUs. This was the only significant difference found in identified profiles comparing institutional campus settings.

Recommendations for Program Interventions

Based on results from this study, it is important to take a holistic approach when considering on-campus experiences of Black student-athletes. One may be asked to consider how the Xhosa African proverb, “I am because we are and we are because I am” may be applied to fostering a collectivistic approach to Black student-athletes’ adjustment to college. Social support, team cohesion, and minority student stress may possibly be moderated by several interventions implemented throughout the collegiate years for Black student-athletes or campus-wide initiatives. Research has shown the reluctance of people of color to seek out mental health services (Hunt & Eisenberg, 2010; Mental health, 2001; Sue & Sue, 2003) and that athletes in general may be more reluctant to seek mental health services as well (Hinkle, 1996). Thus, administrators may need to be proactive in fostering an environment for which Black student-athletes may adjust successfully.

It is important for athletic departments to conduct self-studies to assess the extent to which Black student-athletes experience their environment as supportive. This study did not examine the extent to which specific forms of social support contributed to low levels of perceived social support, but athletic departments have the opportunity to foster a supportive environment that can counter what student-athletes may be experiencing in other areas of their life. It may be useful to conduct comprehensive assessments of Black student-athletes’ perceived social support within the athletic department as well as off-campus and on-campus supports to lend to the specific interventions that may be useful.

Athletic departments may also help facilitate on-campus connections for student-athletes with faculty and staff of color to improve this domain of social support. Mentoring programs with people of color either in the community or on-campus may allow Black student-athletes more opportunities to have positive role models and an increased understanding of one’s cultural and ethnic background. Coaches, academic advisors, and administrators may benefit from gaining an understanding of the experiences of and how to build stronger relationships with Black student-athletes. Teams may benefit from interventions that would improve
their social cohesion and establish a culturally inclusive and accepting environment (Steinfeldt, Reed, & Steinfeldt, 2010). One suggestion would be for coaches, administrators, and teams to participate in or attend Black cultural programming or events on campus or in the community.

Interaction/communication with the families of student-athletes might assist in helping families learn how to provide sufficient support for their son/daughter. African American psychology research emphasizes the critical role and influence of family on students’ sociocultural and mental health adjustment process (Belgrave & Allison, 2006; Neville, Tynes, & Utsey, 2008). Taking into consideration that many Black students and student-athletes may be first-generation college students, their families may not understand their struggles (e.g., survivor’s guilt, code switching, expectations) and may find it difficult to provide appropriate support. Sending a general monthly or semester newsletter home may also strengthen the relationship between the athletic department and families. Such a newsletter may be addressed to all families of student-athletes to increase understanding and support (not just Black families), but it is important for the newsletter to be multiculturally inclusive.

At PWIs, it is imperative for athletic departments to examine the extent to which African American student-athletes perceive the environmental climate as racist or discriminatory. Considering the amount of time spent in athletics and the possible hostility they may experience in the community at large, the athletic department could become a primary source of safety and acceptance for Black student-athletes. The African proverb “When you run alone you run fast. When you run together you run far” highlights how social advocacy should be an integral component of the athletic department’s commitment to the development of all student-athletes. Athletic departments should be aware of issues on the campus and in the community that foster racist/sexist/classist ideologies or policies and speak out against these policies as well as support organizations or programs that aim to build an inclusive community.

Moreover, to meet the needs of Black student-athletes at PWIs, it is recommended that athletic departments offer intervention programs such as open discussion forums that facilitate dialogue about ways to increase support systems to combat cultural insensitivity (i.e., experiences of real or perceived discrimination). To ensure openness and confidentiality, such intervention programs would possibly need to be facilitated by external consultants (e.g., sport psychologists, diversity professionals). Similarly, support groups that provide a safe, confidential environment for Blacks to voice their experiences may be beneficial as well, especially for Black male student-athletes. Group therapy literature has emphasized the impact of similar ethnicity and similar gender groups in empowering individuals whose voices are commonly unheard (Corey & Corey, 2006). It may also be advantageous to strengthen the relationship between Black student-athletes and Black nonathletes as a means to foster increased social connections and sense of a community on campus. This may offer student-athletes support as they encounter and navigate racism or discrimination (and potentially sexism for female athletes). This may provide an opportunity for the student-athletes to broaden their social network beyond fellow athletes and establish additional support systems of peers who positively influence their academic success and career pursuits.
Limitations, Strengths, and Conclusions

The present study is not without limitations. This study was conducted at one discrete point in time, yet adjustment is a process and therefore should be evaluated as such. In addition, the sample size was relatively small. Given the percentages of Black student-athletes nationally and the difficulty gaining access to student-athletes for research in general, especially at HBCUs, the ascertained sample reflects improvement in comparison with existing studies. Yet, larger samples are clearly needed to thoroughly replicate this study. Examination of specific domains of social support may enhance the understanding of the differences found between profiles. Unique gender differences in athletic experiences and student development in general were not examined in this study.

The primary strength of this study is the use of an innovative analysis to examine within-group differences and consequently break away from the assumption that collectively, Black student-athletes have a shared singular experience. The participants recruited for the study reflected diversity in regards to geographical locations, cultural upbringing, gender, sports, and academic majors. To this end, this study ascertained profiles (LSS/C; HMS; HSS/C) among Black student-athletes validating unique, distinct experiences. These profiles were predictive of sociocultural and psychological concerns that may negatively impact a student-athlete’s experience and developmental adjustment across different institutional campus settings. Thus, findings may be generalizable and offer institutions recommendations for developing interventions that may decrease minority-stress and perceived lack of social support as a means to improve Black student-athletes’ sociocultural adjustment to college.

End Note

1 In this article, Black and African American will be used interchangeably in reference to individuals who racially identify as Black, or ethnically identify as African American (ancestry originating from Africa).

References


Sadberry and Mobley


