

Coach-athlete relationship, social support, and sport-related psychological well-being in
National Collegiate Athletic Association Division I student-athletes

Eadie E. Simons and Matthew D. Bird

School of Sport and Exercise Science, University of Lincoln, Brayford Pool, Lincoln, United
Kingdom

ORCID IDs:

Matthew D. Bird 0000-0001-5098-179X

Eadie E. Simons 0000-0001-6185-2942

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Abstract

The coach-athlete relationship and social support are stressors that impact athletes' well-being, however most research in this area focusses on the relationship between these variables and burnout. Researchers have shown differences in stressors experienced between sport types (individual and team) where evidence suggests individual sport athletes report higher mental health concerns compared to those in team sports. This study aimed to understand the relationships between the coach-athlete relationship, social support, and psychological well-being among collegiate athletes, and the impact of sport type on these variables. A total of 153 National Collegiate Athletic Association Division I student-athletes completed coach-athlete relationship, social support, and well-being measures online. Results indicate the coach-athlete relationship and social support were both positively correlated with well-being, but there were no significant differences between sport type on any outcome variables. Findings from this study may influence future coaching practices and support networks, thus positively impacting student athletes' well-being.

Keywords: coaching practices, college athletes, mental health, mental illness, support networks.

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In recent years the National Collegiate Athletic Association (NCAA) have made the mental health of student-athletes a main concern (Brown et al., 2014). Research in this area supported by the NCAA has focussed on mental health referral (Van Raalte et al., 2015), attitudes toward mental health (Kern et al., 2017), body image (Voelker et al., 2019), sleep (Grandner et al., 2021), stigma (Bird et al, 2018; Chow et al, 2021), and well-being (Bullard et al., 2020). Understanding the mental health and overall well-being in this population is a complex and dynamic topic. The two-continuum model posits that mental health and mental illness exist on two separate but related axes (e.g., the presence or absence of mental health and the presence or absence of mental illness) (Keyes, 2005). It could therefore be possible for an individual to have an absence of mental illness but simultaneously be experiencing low mental health. To experience a state of complete mental health (i.e., flourishing) an individual must possess and absence of mental illness and high levels of mental well-being (Keyes & Lopez, 2009). Well-being is a broad concept that encompasses three dimensions; subjective well-being, psychological well-being, and social well-being (Keyes, 2005). Subjective well-being is an individual's overall level of life satisfaction and happiness, concerned with people's feelings and emotions (Ryan & Deci, 2001). In a sporting context this can reflect the pleasure and fulfilment associated with sport performance. Psychological well-being refers to the personal growth and effective daily functioning of an individual (Ryff, 1989). For example, an athlete's sport participation challenges them to grow and they feel confident in their ability to manage the responsibilities associated with performance. Social well-being concerns an individual's level of functioning within society (Keyes, 1998). For athletes, this represents their feelings of belonging and positive contribution towards their sport, community, or team. As athletes are largely impacted by their sport, and since this is

important in their lives, sport-related well-being may be a good indicator of their overall well-being within an athletic context (Lundqvist, 2011).

Stressors and Well-being among Athletes

Student-athletes' well-being can be influenced by the number of stressors they encounter due to their dual-roles as students and athletes (Wilson & Pritchard, 2005; Van Rensburg et al., 2011; Egan, 2019). Stressors faced by this group include academic stress (Hwang & Choi, 2016), having multiple responsibilities (Wilson & Pritchard, 2005), and time demands split between education, practice, and travel (Egan, 2019). As well this group must confront the challenges associated with elite sport performance such as injury, performance concerns, fatigue, and organisational stressors (Rice et al., 2016). Collegiate athletes experience difficulties balancing academics and athletics. For example, the most recent NCAA Growth, Opportunities, Aspirations and Learning of Students in college (GOALS; NCAA, 2020) study found that 30% of female student-athletes and 25% of male student-athletes, reported feeling unable to overcome mounting difficulties in the month prior. Although the NCAA has recently published a best practice guide to supporting athlete well-being (Brown et al., 2014), the additional pressures associated with being a student-athlete contribute to lower levels of well-being and mental health concerns, including depressive disorders (Cox et al., 2017), eating disorders (Sundgot-Borgen & Torstveit, 2004), and substance use (Martens et al., 2006). A vast amount of research has assessed the prevalence rates of depression and depressive symptoms in the student-athlete population. Both Yang et al. (2007) and Wolanin et al. (2016) found student-athletes exhibit depressive symptoms at a similar rate to the general college student population, with 21% and 23.7% of their respective samples reporting clinically relevant levels of depression. This compares to 20% of college non-athlete students who had been diagnosed with or were being treated for depression in the past 12 months, according to the American College Health Association (ACHA; 2019).

However, a study with a larger sample of student-athletes from various institutions reported greater depression symptom prevalence rates of 33.3% (Cox et al., 2017). These findings suggest well-being and mental-health concerns among this population are still a pressing issue and thus highlight the importance of understanding any potential antecedents (i.e., stressors).

The prevalence of mental health and well-being related concerns in the student-athlete population emphasises the importance of understanding any potential stressors which may contribute to their onset. Woodman and Hardy (2001) interviewed 15 elite individual sport athletes to understand the various organisational stressors which exist within their sport. They explored four main themes: environmental issues, personal issues, leadership issues, and team issues. Some of the most discussed stressors appeared in the latter two themes. Under leadership issues 12 of the athletes disclosed a key stressor to be an unsupportive coaching attitude, which was closely followed by the perception of differential treatment – 10 of the 15 athletes - and coach-athlete tension – nine of the athletes. The coach-athlete relationship, defined as the mutual and causally interconnection of coaches' and athletes' emotions, thoughts, and behaviours (Jowett & Meek, 2000; Jowett & Ntoumanis, 2004), could therefore be an important stressor which influences the well-being of student-athletes. In relation to team issues, 14 of the 15 athletes revealed tension between peers to be one of the main stressors, alongside an inappropriate or generally lacking support network both from professionals and peers (Woodman & Hardy, 2011). Social support, referring to “an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient” (Shumaker & Brownell, 1984, p.13), may also influence the overall levels of well-being reported by student-athletes.

Coach-Athlete Relationship and Social Support

The coach-athlete relationship is an organisational stressor which may impact a student-athletes' well-being. This construct is conceptualised as being comprised of three key components: closeness, commitment, and complementarity (Jowett & Meek, 2000). Closeness refers to feeling emotionally close to a coach and is characterized by mutual respect, trust, and appreciation. Commitment reflects the intention to maintain a long-term relationship. Finally, complementarity represents the cooperative interactions between the coach and athlete (Jowett & Ntoumanis, 2004). Researchers have found that a poor-quality coach-athlete relationship is associated with negative indicators of well-being such as athlete burnout (i.e., an athletes' reduced sense of accomplishment, devaluation, emotional and physical exhaustion; Raedeke & Smith, 2001) (Cresswell & Eklund, 2007; Isoard-Gautheur et al., 2016). More specifically, McGee and DeFreese (2019) found coach-athlete closeness to be a significant negative predictor of this construct. Although researchers investigating the links between the coach-athlete relationship and athletes' psychological outcomes have mainly focused on burnout, and despite burnout being correlated with depressive symptoms (Schonfeld & Bianchi, 2016), focussing on one syndrome has resulted in a lack of understanding of the complete impact of the coach-athlete relationship on athletes' well-being. Further research in this area is therefore required.

Social support is another organisational stressor which might influence levels of student-athlete well-being. Cohen (1988) proposed two functional perspectives of social support: perceived and received social support. Perceived social support refers to an individual's subjective judgment on their potential access to support. Whereas received support is the support provided to the recipient at a specific time. The transactional model of stress and coping explains how stress is related to emotional well-being and health behaviors (Lazarus & Folkman, 1984). Higher levels of stress are said to increase the likelihood of mental health issues and behaviors that are detrimental to health (Lazarus & Folkman, 1984).

It suggested that this relationship is mediated by a person's appraisal, evaluating whether the stressor is a threat to their goals. If the stressor is deemed to be a challenge, the effect on well-being and health behaviors is moderated by social support and coping style through a secondary appraisal of their own resources to change the situation and manage negative emotional reactions (Lazarus & Folkman, 1984). Social support is proposed to buffer the effects of the stressors on mental health through increased coping resources which increase belief in one's ability to cope (Wenzel et al., 2002). Like the coach-athlete relationship, research on the psychological consequences of social support has concentrated on its links to athlete burnout, finding that poor social support is positively correlated with this construct (Cresswell & Eklund, 2004, 2007; Goodger et al., 2007; DeFrese & Smith., 2013). Recent research has also investigated the link between social support and symptoms of depression. Sullivan et al. (2020) examined the relationships between social support and depressive symptoms in 238 NCAA Division I collegiate athletes. Their results showed weak, negative relationships between all types of social support and depression, as levels of social support decreased the frequency of reported depressive symptoms increased. Athletic tangible support (i.e., that coming from a coach, teammate, or athletic trainer) was found to be the strongest predictor of depressive symptoms, lower levels of this support were associated with higher levels of reported symptoms. Hagiwara et al. (2017) also explored the associations between social support and depression in a sample of student-athletes from various NCAA institutions. Their results presented no gender differences between social support and depression experience by male and female athletes. Significant negative correlations existed between both perceived and received support and depression in female student-athletes, as social support increased, levels of depression decreased. Whereas no significant relationship was found in the male participants. The existing research highlights the important roles of the coach-athlete relationship and social support as stressors in sport, and their relationships with

burnout and other mental health related symptoms. Nevertheless, to our knowledge, there is no study investigating these constructs and their relationship with sport-related well-being.

Difference in Well-being and Stressors by Sport Type

The type of sport in which a student-athlete participates may contribute to differences in the levels of well-being and stressors they report. Nixdorf et al. (2016) examined the differences in depressive symptoms in athletes from individual (co-active teams, such as golf and swimming) and team (interactive teams, such as baseball and lacrosse) sports. They found significantly greater levels of depressive symptoms in individual sport athletes compared to team sport athletes. The study also assessed potential mediators including team cohesion, perfectionism, and attribution style. Results showed that negative attributions for failure were highly correlated with individual sports, as well as mediating the relationship between sport type and their depressive symptoms. No significant relationship was found between cohesion or perfectionism and depression, but cohesion was associated with lower depressive scores across the sample and perfectionism had a greater association with team sport athletes (Nixdorf et al., 2016). Pluhar et al. (2019) reported similar findings, concluding that anxiety and depression were more prevalent in a larger sample of 756 individual sport athletes. Differences in well-being related concerns experienced by individual and team sport athletes could be attributed to the types of stressors these groups face. For example, team athletes may have reported different stressors impacting their well-being compared to individual athletes. This has been seen in previous research where individual athletes report more training and coach related stressors compared to team athletes who identify more stressors related to the selection process and making mistakes (Nicholls et al., 2007). In addition, team sport performers report greater frequency, intensity and duration of logistics and operations organisational stressors (e.g., travel to/from training, organisation of competitions, funding allocation) than those performing individual sports (Arnold et al.,

2016). Although researchers have shown differences in mental health symptoms and organisational stressors by sport type, none have investigated how well-being, the coach-athlete relationship, and social support is influenced by student-athletes from team or individual sports.

The Current Study

Previous researchers have investigated the relationships between the coach-athlete relationship and social support with domain specific components of well-being such as burnout. To our knowledge, no study has examined the impact of these variables on the global construct of sport-related well-being. Existing literature is also mainly focussed on understanding differences between sport types and mental health concerns such as depression and anxiety, therefore there is no research on the potential differences in coach-athlete relationship, social support, and sport-related well-being between individual and team sport athletes. To address these gaps in the literature, the aims of this study were three-fold. Firstly, this study aimed to identify the relationship between the coach-athlete relationship and sport-related well-being. Secondly, this research sought to understand the relationship between social support and sport-related well-being. Thirdly, this investigation attempted to examine the impact of sport type on the coach-athlete relationship, social support, and sport-related well-being. Hypotheses were made based on the existing research evidence. It was hypothesised that better quality coach-athlete relationships and greater social support would both be positively related to sport-related well-being. The final hypothesis was exploratory, due to the limited research evidence, expecting levels of social support, coach-athlete relationship, and well-being to differ between sport types.

Methods

Participants

The sample included 153 (females, $n = 115$; males, $n = 38$) student-athletes from NCAA Division I institutions. Participants reported a mean age of 19.46 years ($SD = 1.49$) and represented all four years of study (see Table 1 for full demographic information). Participants identified as: White ($n = 94$); Black/African American ($n = 31$); Hispanic/Latino ($n = 11$); Multi-ethnic ($n = 8$); Asian or Asian American ($n = 4$); Other ($n = 3$); Indian American/Native American/Indigenous Person or Alaska Native ($n = 1$); and Native Hawaiian or Pacific Islander ($n = 1$). The sample represented a range of both team ($n = 96$) and individual ($n = 57$) sports including: volleyball ($n = 36$); baseball ($n = 27$); swimming and diving ($n = 27$); golf ($n = 17$); softball ($n = 10$); track and field ($n = 9$); soccer ($n = 8$); field hockey ($n = 7$); lacrosse ($n = 6$); tennis ($n = 4$); ice hockey ($n = 2$). Participants reported playing their sport for an average of 11.25 years ($SD = 3.64$) and had represented their current team for 2.03 years ($SD = 1.38$). A total of 21 participants (14%) stated that they were currently receiving treatment from one or more mental health professionals and 60 participants (39%) had previously received help.

Measures

Demographic Information

A short demographic questionnaire was used to gather data about participants' age, gender, ethnicity, year in college, sport, number of years playing their sport, and the number of years on their current team. Data related to any previous (Have you previously received treatment from a mental health professional?) and current (Are you currently receiving treatment from a mental health professional?) access to mental health support and the professionals who provided this (i.e., Counselor, Psychologist, Psychiatrist, Social Worker, or Sport Psychologist), were also collected.

Psychological Well-being

The Sport Mental Health Continuum - Short Form (Sport MHC-SF; Foster & Chow, 2019) was used to assess sport-related psychological well-being. This 14 item measure is split across three subscales: three items measure subjective well-being (e.g., “during the past month, how often did sport participation make you feel happy”), five items measure social well-being (e.g., “during the past month, how often did you feel you had something to contribute to your team/sport community”) and six items measure psychological well-being (e.g., “during the past month, how often have you felt that you have a sense of direction/meaning within your sport”). All items are measured on a 6-point scale ranging from 0 (*never*) to 5 (*every day*), with total scores ranging from 0 to 70, where higher scores represent greater well-being. The three subscales display high internal consistency reliability exhibiting Cronbach’s α coefficients of .88, .88 and .90 respectively, in a sample of student-athletes (Foster & Chow, 2019). Internal consistency coefficients for the current study displayed high levels of reliability for all subscales (subjective well-being, $\alpha = .85$; social well-being, $\alpha = .83$; psychological well-being, $\alpha = .87$).

Perceived Social Support

The Perceived Available Support in Sport Questionnaire (PASS-Q; Freeman et al., 2011) was used to assess perceived social support. This 16 item measure is split over four subscales: four items measure emotional support (e.g., “If needed, to what extent would someone show concern for you”), four items measure esteem support (e.g., “If needed, to what extent would someone reinforce the positives”), four items measure informational support (e.g., “If needed, to what extent would someone give you constructive criticism”) and four items measure tangible support (e.g., “If needed to what extent would someone help with travel to training and/or competitions”). Each item is measured on a 5-point scale from 0 (*not at all*) to 4 (*extremely so*). The four dimensions demonstrate moderate to high internal consistency reliability ($\alpha = .68$ to $.87$), as well as high test-retest reliability ($r = .73$ to $.84$) in a

sample of student athletes (Freeman et al., 2011). Internal consistency coefficients for the current study indicated high levels of reliability for each subscale (emotional support, $\alpha = .86$; esteem support, $\alpha = .81$; informational support, $\alpha = .81$; tangible support, $\alpha = .79$).

Coach-Athlete Relationship

The coach-athlete relationship questionnaire (CART-Q; Jowett & Ntoumanis, 2004) was used to assess the participants' coach-athlete relationship. The 11 item scale consists of three subscales: four items measure closeness (e.g., "I trust my coach"), three items measure commitment (e.g., "I feel committed to my coach") and four items measure complementarity (e.g., "When I am coached by my coach, I feel ready to do my best"). Each item is measured on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). All items display high convergent validity ($r = .68$ to $.90$) and the subscales demonstrate high internal consistency reliability (closeness, $\alpha = .87$; commitment, $\alpha = .82$; complementarity, $\alpha = .88$) in a sample of coaches and athletes from a range of sports and ability levels (Jowett & Ntoumanis, 2004). Internal consistency coefficients for the current study indicated high levels of reliability for each subscale (closeness, $\alpha = .91$; commitment, $\alpha = .85$; complementarity, $\alpha = .88$).

Procedure

Following ethical approval from the University research ethics committee, student-athletes were recruited via emails (gathered from athletic department websites) sent to all head coaches of NCAA baseball; field hockey; golf; ice hockey; lacrosse; softball; swimming and diving; tennis; track and field; and volleyball Division I teams. An initial email was sent to head coaches asking them to forward the survey link to their athletes, with one reminder email sent a week later. Participants were asked to complete the online questionnaire using Qualtrics. Informed consent was gained before participants completed the demographic questions followed by all study measures (presented in a random order), which took

approximately 15 minutes to complete. After completion, participants were thanked for their time and provided with details of help-seeking resources.

Data Analysis

Data were analysed using SPSS (version 26.0; IBM Corp., Armonk, NY). Descriptive statistics, including means and standard deviations, were calculated for all outcome variables. A Shapiro-Wilk test of normality was performed on each psychological measure. Spearman's rank order correlations were used to investigate the relationships between social support and sport-related well-being, and coach-athlete relationship and sport-related well-being. Three one-way MANOVAs were conducted to investigate any differences in these variables between team and individual sport athletes.

Results

Descriptive statistics, results of normality tests and correlation coefficients for all outcome variables are presented in Table 2. Significant results from the Shapiro-Wilk test of normality suggested reported scores on all variables were not normally distributed. A Spearman's rank-order correlation was used to determine the relationship between the coach-athlete relationship and psychological well-being, and the relationship between social support and psychological well-being. The first hypothesis was supported. Significant, weak to moderate, positive correlations were found between all subscales of coach-athlete relationship and sport-related well-being (see Table 2). The strongest correlation was found between coach-athlete relationship (total) and well-being (total), $r_s(151) = .55, p < .001$. The weakest correlation was found between commitment and subjective well-being, $r_s(151) = .37, p < .001$. The second hypothesis was also supported. Significant, weak to moderate, positive correlations were found between all subscales of social support and sport-related well-being (see Table 2). The strongest correlation was found between esteem support and psychological

well-being, $r_s(151) = .40, p < .001$. The weakest correlation was found between emotional support and subjective well-being, $r_s(153) = .23, p < .001$.

Three separate one-way MANOVAs were run to determine whether levels of sport-related well-being, coach-athlete relationship, and social support were different between team and individual sports. Mean scores and univariate effects for all outcome variables (e.g., total score and subscales) are presented in Table 3. The differences between sport types on the well-being variables were not statistically significant, $F(3, 148) = 1.30, p = .28$; Wilks' $\Lambda = .97$; partial $\eta^2 = .03$. Suggesting no differences on any of the well-being variables between team and individual sports. The differences between sport types on the coach-athlete relationship variables were not statistically significant, $F(3, 147) = .37, p = .78$; Wilks' $\Lambda = .99$; partial $\eta^2 = .01$. Results show no differences between team and individual sport on any of the coach-athlete relationship variables. The differences between sport types on the social support variables were not statistically significant, $F(4, 147) = .91, p = .46$; Wilks' $\Lambda = .98$; partial $\eta^2 = .02$. These results indicate no differences between team and individual sports on any of the social support variables.

Discussion

Components of the coach-athlete relationship and social support have been identified as key stressors experienced by athletes (Woodman & Hardy, 2001). However, no study has investigated the relationship between these variables and student-athlete sport-related well-being. Differences in stressors which may impact the well-being of athletes have been identified between team and individual sport athletes (Arnold et al., 2016; Nicholls et al., 2007). No study has looked at how the coach-athlete relationship and social support differs between co-active and interactive teams. This study aimed to examine the relationships between the coach-athlete relationship, social support and sport-related well-being, and any differences in these variables across sport type.

The first purpose of the current study was to examine the relationship between coach-athlete relationship and well-being in a sample of student-athletes. Correlation analysis showed a significant association exists between the two variables. Specifically, significant positive correlations were shown between all three coach-athlete relationship subscales and all three well-being subscales (see Table 2). Similar relationships between the coach-athlete relationship and the construct of burnout have been evidenced in previous research (e.g., Cresswell & Eklund, 2007; McGee & DeFrese, 2019). For example, Isoard-Gauthier et al. (2016) found high quality coach-athlete relationship to be inversely related to burnout in a sample of 359 athletes. Furthermore, the coach-athlete relationship is said to influence athlete well-being over time (Jowett, 2017). One proposed explanation for this relationship is basic psychological needs theory (Deci & Ryan, 2000). This theory suggests the satisfaction of an individual's three basic needs – autonomy, competence, and relatedness – ensures “ongoing psychological growth, integrity, and well-being” (Deci & Ryan, 2000, p. 229). As the coach-athlete relationship is reported to be positively associated with basic need satisfaction (Riley & Smith, 2011; Felton & Jowett, 2013), it might be unsurprising to see positive correlations with well-being. Additionally, athletes who report greater levels of closeness with their coach are likely to feel more competent and skilled in their sport (Jowett & Shanmugam, 2016). The increased competence not only aligns with one of the basic psychological needs but also this elevated sense of accomplishment may elicit greater enjoyment from their sport participation and in turn increase their well-being.

The findings of a positive association between quality of the coach-athlete relationship and sport-related well-being may influence NCAA guidelines in relation to coaches' best practice in supporting mental wellbeing (e.g., Brown et al., 2014; NCAA, 2016). Coaching practices should aim to foster high quality relationships with their athletes, as determined by the 3C's (closeness, commitment, and complementarity; Jowett & Meek,

2000). Specifically, the use of controlling and autonomy-supportive coaching behaviours have been shown to enhance athletes experience of need satisfaction (Felton & Jowett, 2013).

The second purpose of this study was to assess the relationship between social support and sport-related well-being. Correlation analysis showed significant association between the two variables. Significant positive correlations exist between all four social support subscales and all three well-being subscales (see Table 2). These findings are consistent with research assessing social support in relation to athlete burnout (Cresswell & Eklund, 2004, 2007; Goodger et al., 2007). For example, DeFrese and Smith (2013) found perceived levels of social support to be inversely associated with burnout, in a sample of student-athletes. In line with the transactional model of stress and coping (Lazarus & Folkman, 1984), it has been suggested that the additional available resources perceived by the athlete act as a strategy to cope with stressful situations (Crocker, 1992). Another explanation is the stress-buffering hypothesis. This proposes that social support can buffer the effects of stress in two ways, either by preventing the stress appraisal or increasing the individuals' coping resources (Cohen & Willis, 1985). Both would improve an athletes' experience of stress and in turn enhance their well-being. To maintain or enhance well-being among the student-athlete population, this group should be mindful of the types of supporters they surround themselves with. Identifying friends, family, teammates, and coaches who can provide them with different dimensions of social support (e.g., esteem support from a teammate, informational support from a coach) might be beneficial. Additionally, educating coaches and teammates about social support can improve student-athletes' anxiety (Fogaca, 2021).

The final objective of this study was to investigate whether levels of sport-related well-being, coach-athlete relationship, and social support differed between sport types. Although no formal hypothesis was made on the directions of differences for the coach-athlete relationship between sport types, it might be suggested that individual sport athletes

would report greater quality coach-athlete relationships as a result of the more frequent one-on-one interactions between coaches and athletes (Rhind et al., 2012). In addition, it may be intuitively appealing to think that team sport athletes would perceive greater levels of social support, compared to individual sport athletes, due to the team environment and striving towards a mutual goal (Pluhar et al., 2019). As the coach-athlete relationship and social support has been reported as higher in team sports, it could be assumed that this may influence the overall well-being experienced by athletes. Separate one-way MANOVAs revealed that no significant differences exist between team and individual sports for all three variables.

The finding that well-being did not differ between sport types is contrary to existing research (Nixdorf et al., 2016; Pluhar et al., 2019) suggesting individual sport athletes report greater levels of depression and anxiety. The absence of differences in levels of well-being between sports may be explained given the results of the correlation and difference testing for coach-athlete relationship and social support. As our results show that both coach-athlete relationship and social support are positively associated with well-being, we might only expect well-being to differ if quality of coach-athlete relationship and/or social support were also different between sport types. Another explanation for the lack of significant differences between outcome variables due to sport type could be due to the collegiate environment, where individual sport athletes interact more like a team. Qualitative research in university swimmers reported athletes felt like members of a team despite competing as individuals (Raabe et al., 2016). Ultimately, collegiate athletes are performing for their institution and even co-active sports like golf or tennis practice and compete as teams.

Limitations and Future Directions

Results from this study present some initial evidence on the associations of the coach-athlete relationship and social support with sport-related well-being in student-athletes, as

well as the impact of sport type on these variables. This study it is not without its limitations which should be considered when interpreting the findings and in future research. First, the cross-sectional, correlational study design prevents causation from being determined. Future research should be conducted longitudinally to allow researchers to further understand the causal relationships between the coach-athlete relationship, social support, and well-being. Secondly, despite data being collected from student-athletes from multiple institutions and representing a wide number of sports the sample remains small in comparison to the potential eligible participants. Furthermore, the sample had a greater proportion of females and was potentially subject to self-selection bias due to the topic area (e.g., those experiencing higher levels of well-being). Future studies could include all teams across the NCAA Division I level or attempt to recruit participants across Divisions II and III. Other avenues of exploration include those student-athletes participating at National Association of Intercollegiate Athletics (NAIA) and National Junior College Athletic Association (NJCAA) affiliated institutions. Thirdly, limitations might be aimed toward the wording of the coach-athlete relationship and social support measures. As the coach-athlete relationship questionnaire asked participants to provide responses regarding their 'coach' it becomes difficult to know if answers were influenced by their perceptions of the head coach, an assistant coach, or other coaches they regularly interact with. Moreover, the social support scale measured social support in general and not that specifically perceived to be provided by a coach. Future research in this area, therefore, could adopt measures adapted to the specific population of interest (e.g., head coaches). Finally, the generalisability of findings is limited by the sport-specific measure of well-being. Student-athletes' global well-being (i.e., a general evaluation of a persons' well-being) is largely influenced by sport-related well-being due to the perceived importance of sport in their lives (Lundqvist, 2011), but a more general

measure would allow for an understand of the impact of the coach-athlete relationship and social support on their day-to-day lives.

Conclusion

Student-athletes are exposed to both the stressors of elite sport performance and academics because of their dual roles as students and athletes. Thus, it is important to understand the stressors they face may impact their well-being. Both the coach-athlete relationship and social support were found to be significantly positively associated with sport-related well-being, but no differences in outcome variables were found between sport types. Conclusions based on the results of this study may suggest coaches, and those who find themselves in positions to support student-athletes, play an important role influencing the sport specific well-being of this group. Coaches for both team and individual sports can aim to foster high quality coach-athlete relationships and socially supportive training environments for the benefit of those they work with. To do this, coaches should follow evidenced-based strategies which have been shown to be effective. For example, strategies outlined in the COMPASS model (conflict management – e.g., clarifying expectations, openness – e.g., discussing any topic, motivation – e.g., displaying the skills needed to help athletes, positivity – e.g., being adaptable, fair, and dealing with external pressures, advice – e.g., giving opinions and received feedback in a positive way, support – e.g., demonstrating you are committed to the relationship by showing support, social networks – e.g., socializing and sharing networks away from the athletic environment) have been proposed as a way in which coaches may be able to enhance and maintain quality relationships with athletes (Rhind & Jowett, 2010). In addition, researchers have recently shown how training coaches to provide emotional, esteem, and tangible social support can influence anxiety experienced by student-athletes (Fogaca, 2021). Furthermore, enhancing well-being of student-athletes could be achieved by helping student-athletes identify individuals who can potentially provide them

with different types of social support (e.g., emotional, esteem, informational, and tangible). The athlete's coach may be in the best position to provide many types of support, but it is important to acknowledge that student-athletes may have multiple others (e.g., family members, teachers, sport psychologists) who are considered part of their support network and can play differing roles in delivering the most appropriate type of support when needed (Knight et al., 2018).

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Table 1. Demographic characteristics by gender and total

Characteristic	Male (n = 38)	Female (n = 115)	Total (n = 153)
Age in years, mean (<i>SD</i>)	19.79 (1.66)	19.35 (1.42)	19.46 (1.49)
Year of Study			
1 st year	11 (28.9%)	36 (31.3%)	47 (30.7%)
2 nd year	13 (34.2%)	29 (25.2%)	42 (27.5%)
3 rd year	2 (5.3%)	19 (16.5%)	21 (13.7%)
4 th year	8 (21.1%)	25 (21.7%)	33 (21.6%)
Other	4 (10.5%)	6 (5.2%)	10 (6.5%)
Ethnicity			
Indian American/Native American/Indigenous Person/Alaska Native	1 (2.6%)	-	1 (0.7%)
Asian or Asian American	-	4 (3.5%)	4 (2.6%)
Black/African American	18 (47.4%)	13 (11.3%)	31 (20.3%)
Hispanic/Latino	2 (5.3%)	9 (7.8%)	11 (7.2%)
Multi-ethnic	3 (7.9%)	5 (4.3%)	8 (5.2%)
Native Hawaiian or Pacific Islander	-	1 (0.9%)	1 (0.7%)
White	13 (34.2%)	81 (70.4%)	94 (61.4%)
Other	1 (2.6%)	2 (1.7%)	3 (2.0%)
Sport			
Baseball	27 (71.1%)	-	27 (17.6%)
Golf	1 (2.6%)	16 (13.9%)	17 (11.1%)
Lacrosse	2 (5.3%)	4 (3.5%)	6 (3.9%)
Soccer	-	8 (7.0%)	8 (5.2%)
Softball	-	10 (8.7%)	10 (6.5%)
Swimming and Diving	6 (15.8%)	21 (18.3%)	27 (17.6%)
Tennis	2 (5.3%)	2 (1.7%)	4 (2.6%)
Track and Field	-	9 (7.8%)	9 (5.9%)
Field Hockey	-	7 (6.1%)	7 (4.6%)
Ice Hockey	-	2 (1.7%)	2 (1.3%)
Volleyball	-	36 (31.3%)	36 (23.5%)
Total no. years playing sport, mean (<i>SD</i>)	13.78 (3.34)	10.41 (3.34)	11.25 (3.64)
No. years on current team, mean (<i>SD</i>)	2.08 (1.67)	2.01 (1.27)	2.03 (1.38)
Current mental health support			
Psychologist	-	7 (6.1%)	7 (4.6%)
Psychiatrist	1 (2.6%)	2 (1.7%)	3 (2.0%)
Sport Psychologist	1 (2.6%)	4 (3.5%)	5 (3.3%)
Counsellor	2 (5.3%)	5 (4.3%)	7 (4.6%)
Other	-	1 (0.9%)	1 (0.7%)
Previous mental health support			
Psychologist	5 (13.2%)	17 (14.8%)	22 (14.4%)
Social worker	-	1 (0.9%)	1 (0.7%)
Psychiatrist	-	6 (5.2%)	6 (3.9%)
Sport Psychologist	7 (18.4%)	18 (15.7%)	25 (16.3%)
Counsellor	4 (10.5%)	24 (20.9%)	28 (18.3%)
Other	2 (5.3%)	2 (1.7%)	4 (2.6%)

Table 2. Descriptive statistics, tests of normality, and spearman's rank-order correlation coefficients

Variable	Potential range	Mean	SD	Shapiro-wilk ρ	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Well-being (total)	0-70	54.23	12.59	<.001	-												
2. Psychological well-being	0-30	24.08	5.58	<.001	.88*	-											
3. Subjective well-being	0-15	10.86	3.41	<.001	.80*	.63*	-										
4. Social well-being	0-25	19.29	5.28	<.001	.88*	.63*	.59*	-									
5. Coach-relationship (total)	1-77	64.58	13.13	<.001	.55*	.46*	.44*	.51*	-								
6. Closeness	1-28	24.57	5.04	<.001	.52*	.41*	.40*	.51*	.92*	-							
7. Commitment	1-21	16.46	3.98	<.001	.49*	.42*	.37*	.46*	.92*	.82*	-						
8. Complementarity	1-28	23.55	4.78	<.001	.49*	.42*	.40*	.44*	.94*	.82*	.77*	-					
9. Social support (total)	0-64	48.94	11.04	<.001	.36*	.35*	.26*	.35*	.37*	.40*	.35*	.29*	-				
10. Tangible support	0-16	11.57	3.31	<.001	.34*	.31*	.27*	.34*	.29*	.31*	.26*	.25*	.87*	-			
11. Emotional support	0-16	12.73	3.26	<.001	.28*	.27*	.23*	.28*	.35*	.38*	.37*	.25*	.90*	.66*	-		
12. Informational support	0-16	12.68	2.84	<.001	.30*	.28*	.25*	.30*	.33*	.37*	.27*	.30*	.87*	.75*	.73*	-	
13. Esteem support	0-16	11.97	3.04	<.001	.36*	.40*	.24*	.32*	.30*	.34*	.32*	.20*	.89*	.68*	.83*	.67*	-

Note. * $p < .01$

Table 3. Descriptive statistics by sport type and univariate effects

Dependent variable	Sport Type	Descriptive Statistics		F	Univariate effects		Sig
		Means	SD		df	Error df	
Well-being (total)	Team	55.50	12.01	3.24	1	150	.07
	Individual	51.71	13.32				
Psychological well-being	Team	24.55	5.48	2.40	1	150	.12
	Individual	23.11	5.67				
Subjective well-being	Team	11.06	3.28	1.22	1	150	.27
	Individual	10.43	3.64				
Social well-being	Team	19.89	4.86	3.77	1	150	.05
	Individual	18.18	5.81				
Coach-athlete relationship (total)	Team	65.57	13.08	.01	1	149	.94
	Individual	64.73	13.25				
Closeness	Team	24.51	5.29	.07	1	149	.79
	Individual	24.73	4.60				
Commitment	Team	16.56	3.74	.11	1	149	.75
	Individual	16.34	4.37				
Complementarity	Team	23.51	4.72	.04	1	149	.85
	Individual	23.66	4.89				
Social support (total)	Team	49.21	10.93	.26	1	150	.61
	Individual	48.25	11.39				
Tangible support	Team	11.70	3.23	.55	1	150	.46
	Individual	11.29	3.46				
Emotional support	Team	12.79	3.25	.16	1	150	.69
	Individual	12.57	3.31				
Informational support	Team	12.59	2.87	.13	1	150	.72
	Individual	12.77	2.83				
Esteem support	Team	12.13	2.83	.96	1	150	.33
	Individual	11.63	3.38				