

A Systematic Literature Review on the Academic and Athletic Identities of Student-Athletes

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Academic and athletic identities are related to performance and wellbeing indicators in both the educational and sport domains, respectively. This paper presents a systematic literature review examining empirical research into the academic and athletic identities of student-athletes in dual (education and sport) careers. The 42 records identified in this review suggest that research on the academic and athletic identities of student-athletes has focused on the themes of: identity development, role conflict, career development and motivation, and student-athlete stereotypes. Future research directions are considered, including the need for mixed-methods and longitudinal assessments of academic and athletic identities to assess the dynamic nature of identity development, and to ascertain how these relate to future performance and wellbeing outcomes.

Keywords: identity, education, sport, talent development, dual careers

Identity is defined as one aspect of an individual's wider self-concept, encapsulating an individual's subjective assessment of who they are, and how they fit with their social world in relation to others (Brewer & Gardner, 1996; Caza, Vough, & Purnik, 2018). Identity is tied to appraisals of self-definition, self-worth, and self-esteem, and informs values and goal-related behaviors (Brewer, Van Raalte, & Linder, 1993; Gecas, 1982). Identity salience refers to the commitment to, and subjective importance of an identity, relative to other self-identities, with highly salient identities more likely to be activated across contexts and to motivate behaviors aligned to that identity (Stets & Burke, 2000; Stryker & Burke, 2000). Salient self-identities are usually developed around key life roles, reflecting levels of commitment to, and investment in, those roles (Stryker & Burke, 2000; Thoits, 1983). Performance of behaviors aligned with specific roles will serve to further strengthen related role identities (Terry, Hogg, & White, 1999).

Globally, many elite and semi-elite athletes simultaneously participate in competitive sport and higher education (see Wylleman & Lavallee, 2004). These athletes thus participate in dual careers in sport and education and are commonly referred to as 'student-athletes' in scientific literature (Ivarsson et al., 2015; Stambulova,



Engström, Franck, Linnér, & Lindahl, 2015; Stambulova & Wylleman, 2015). Congruent with theories of relational identity-development (e.g., Stryker 1987), these student-athletes are thus predicted to develop domain-specific identities aligned with their roles as students and athletes.

Athletic identity specifically refers to the self-definition and meaning that is developed in relation to a role as an athlete and has been asserted to be central to the self-concept of athletes (Brewer et al., 1993). Athletic identity has been most commonly researched in the context of transitions that occur at times of athletic retirement (e.g., Grove, Lavalley, & Gordon, 1997; Reifsteck, Gill, & Labban, 2016; Ronkainen, Kavoura, & Ryba, 2016; Smith & Hardin, 2018), injury (e.g., Brewer, Cornelius, Stephan, & Van Raalte, 2009; Green & Weinberg, 2001), or performance set-backs (e.g., Brewer, Selby, Linder, & Petitpas, 1999; Brown & Potrac, 2009). Amongst (semi-)elite athletes, athletic identities have been found to increase in importance from childhood through to adolescence, as the demands of sport intensify (Houle, Brewer, & Kluck, 2010). Further, athletic identity is positively associated with athletic role commitment and sporting success (Horton & Mack, 2000). Therefore, a strong athletic identity is often considered desirable for aspiring and elite athletes (Williams & Krane, 1993). However, individuals with a sole commitment to their sporting identity have an increased risk of experiencing burnout and psychological distress when retiring from their sports (Anderson, 2012; Horton & Mack, 2000; Wylleman, Rosier, & De Knop, 2015). Researchers suggest that the risk of identity foreclosure, referring to an over-commitment to a specific role and avoidance of behaviors to explore other role identities, is higher in sport compared to other domains because athletic identity is generally developed at a young age before other possible role identities are explored (Brewer & Petitpas, 2017; Houle et al., 2010). From a life-span perspective, there is a high level of risk in exclusively investing in a highly specialized domain, such as sport, given that an unsuccessful or ending sporting career may leave the individual without more generalized skills to pursue alternative vocational domains (Schulz & Heckhausen, 1996). For student-athletes, the pursuit of a university degree thus represents an opportunity to establish or strengthen a self-identity that is distinct from their athletic identity and to diversify their skill base (Schulz & Heckhausen, 1996).

Academic identity refers to the self-meaning derived from one's role as a student and subsequent expectations on oneself derived from this role (Ewing & Allen, 2017; Mortimer, Lam, & Lee, 2015). The classroom environment provides a dynamic context in which the strength of an academic identity is continuously negotiated to meet role demands and the expectations of peers and teachers (DeCandia, 2014; Kaplan & Flum, 2010; Hawkins, 2005; Swanson, Spencer, Dell-Angelo, Harpalani, & Spencer, 2002). An academic identity positively predicts student motivation, goal-orientation, academic commitment, persistence, and successful performance in academic domains (Lairio, Puukari, & Kouvo, 2013; Hejazi, Lavasani, Amani, & Was, 2012; Osborne & Jones, 2011), as well as guides decisions relating to the pursuit of future career paths (Swanson et al., 2002).

A plethora of research has suggested that holistic athlete development, in which athletes are encouraged to participate in non-sporting life-domains, facilitates their wellbeing, provides them with long-term psychological and psychosocial advantages, as well as sets them up for viable alternative careers if their sporting endeavors are unsuccessful (see Henriksen, Stambulova, & Roessler, 2010; Schinke, Stambulova, Si, & Moore, 2018; Wylleman & Lavallee, 2004; Wylleman & Rosier, 2016). Yet, although there is reasonable understanding of athletic identity of athletes, and academic identity of students, how these identities co-exist and co-contribute to an overall sense of self in student-athletes is not as well understood (van Rens, Ashley, & Steele, 2019; Yukhymenko-Lescroart, 2014). Understanding the development of salient self-identities in student-athletes will better equip practitioners in supporting holistic athletic development. Although commitment across multiple key roles may result in negative consequences, such as role and identity conflict (Stryker & Burke, 2000), researchers have demonstrated that development of a multidimensional identity is positively associated with self-esteem, healthy psychological functioning, and wellbeing (Linville, 1985, Thoits, 1983). Concurrently engaging in both education and sport may enable student-athletes to remain invested in sport whilst engaging in wider self-development, including developing both specific and general knowledge and skills, exploring career options, and exploring their self-identities beyond sport (Cummins & O'Boyle, 2015). It follows that holistic talent development and seeking opportunities for multifaceted identity growth is likely beneficial to athletes' wellbeing (Ivarsson et al., 2015). Subsequently, an effective assessment of the scholarship relating to identity development in student-athletes, should consider studies that examine both academic and athletic self-identities to understand how these self-identities co-exist, as well as to explore their correlates.

This review seeks to build upon recent dual career reviews (e.g., Guidotti, Cortis, & Capranica, 2015; Stambulova & Wylleman, 2019) by expanding the scope of research beyond a European context and to focus exclusively on the academic and athletic identity development of student-athletes. Specifically, this systematic literature review aims to: (a) identify the available empirical literature simultaneously investigating both academic and athletic identities of student-athletes; (b) identify and interpret relevant themes within this literature; and (c) determine potential directions for future research.

Method

Search Strategy

Three databases (PsycINFO, SCOPUS, and SPORTDiscus) that span the disciplines of sports science and psychology, were used to identify published research articles examining both academic and athletic identities of student-athletes. Pre-defined eligibility criteria were applied to the search, namely: peer-reviewed journal articles, English language; full-text availability; and must empirically investigate both academic and athletic identity of tertiary-level, adult student-athletes. Scholarship into dual careers is a relatively recent research trend, therefore all sources were searched

from January 2000 to May 2019. Records with both quantitative and qualitative (or mixed methods) approaches were included in the search protocol, given that a wide scope of methods were deemed important to explore the nuances of identity development (Brown & Hartley, 1998). Consistent keyword and title searches were employed using search string synonyms for the three primary study concepts: ‘sport’, ‘student’, and ‘identity’. Truncation and Booleans were applied to broaden and refine the search. The specific terms that were used were: (sport OR athlet*OR student-athlete) AND (student OR scholar OR education OR school OR university OR academ* OR student-athlete OR dual career), AND (identity). Additionally, the reference lists of recent reviews (Fuller, 2014; Guidotti et al., 2015; Li & Sum, 2017; Stambulova & Wylleman, 2019) were assessed, identifying an additional 25 potentially relevant records. The flowchart of the record screening process is outlined in Figure 1 and is consistent with the PRISMA statement for the reporting of information in systematic reviews (Moher, Liberati, Tetzlaff, & Altman, 2009). After the removal of 33 duplicates, a total of 148 unique records were identified. An initial title and abstract screening was conducted on all 148 records with 39 removed for not fitting the aforementioned inclusion criteria. A full-text review was then conducted on the remaining 109 records, identifying 42 records that were deemed relevant for inclusion in this review.

Of these 42 records, 15 measured both academic and athletic identities directly. The remaining records measured one or both of these identities indirectly, such as

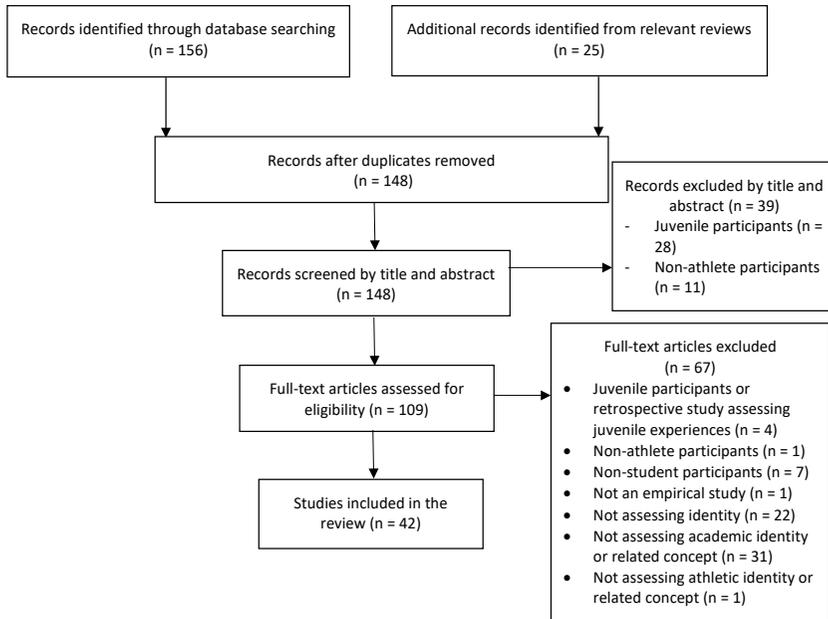


Figure 1. Flowchart of literature screening process (process adapted from Moher et al., 2009).

measuring indicators of academic experience (Huang, Chou, & Hung, 2016), academic involvement (Mignano, Brewer, Winter, & Van Raalte, 2006), or self-perceptions of academic importance (Settles, Sellers, & Damas, 2002). Given that academic and athletic self-identities are proposed to develop in reference to both intrinsic and extrinsic information, such as comparison of performance relative to others, and to be expressed through educational/performance outcomes and commitment (Skaalvik & Skaalvik, 2002), records assessing these related concepts were included in this review to holistically capture all relevant research on identity development.

Results and Discussion

Research Characteristics

In total, 15 (36%) studies employed qualitative research methods, 24 (57%) studies used a quantitative approach, and three (7%) studies employed a mixed-methods approach. Of the studies with quantitative or mixed methods approaches, nine (33%) employed the *Athletic Identity Measurement Scale* (AIMS; Brewer et al., 1993) to assess athletic identity. There was no consistency in how academic identity was measured; two studies (Antshel, VanderDrift, & Pauline, 2016; Beron & Piquero, 2016) measured the strength of the academic identity relative to the strength of the athletic identity, such that if one was reported as higher, the other would subsequently be reported as lower. Conversely, although the *Academic and Athletic Scale* (AAIS; Yukhymenko-Lescroart, 2014; 2018) measured both athletic and academic identities within the one scale, these were treated as discrete subscales, such that a high score on one identity would not necessarily preclude a high score on the other.

Of the 42 records, five (12%) were published in the years 2000 to 2004, eight (19%) from 2005 to 2009, 11 (26%) from 2010 to 2014, and 18 (43%) since 2015. Thirty-five (83%) records sampled across a variety of sports, three (7%) sampled only (or primarily) from American football, two (5%) from hockey, and the remainder from either football, swimming, or basketball. Two (5%) studies were conducted in Asia, 13 (31%) in Europe, one each in Africa (2.5%) and Australasia (2.5%), with the remaining 25 (59%) studies conducted in North America. Most of these North American studies (68%) sampled student-athletes from National Collegiate Athletic Association (NCAA) institutions. Another five of the North American studies (20%) sampled from student-athletes competing at non-NCAA intercollegiate levels, with the final three (12%) studies assessing student-athletes competing across sporting levels. Of the studies conducted outside of North America, most (70%) sampled across sporting levels (from amateur to international levels), one (6%) sampled only from semi-professional levels, and four (24%) sampled only from professional or Olympic levels.

An inductive approach was employed to identify and analyze themes. Key findings were extracted from all studies, after which an iterative process identified higher-order themes for each record (methods adapted from Hatch, 2002). Similar themes were collapsed until the researchers were satisfied that the final themes encapsulated all records. Four over-arching themes were identified: the first theme consists of

17 studies examining the ‘identity development’ of student-athletes (see Table 1). The second theme consists of 10 studies examining ‘role conflict and wellbeing’ of student-athletes (see Table 2). The third theme consists of 16 studies examining ‘career maturity and motivation’ (see Table 3). The final theme consists of nine studies examining ‘student-athlete stereotypes’ (see Table 4). Ten studies were identified as examining multiple themes, and therefore were presented across multiple tables.

Table 1

Key Characteristics of Studies Examining Academic and Athletic Identity in Student-Athletes: Theme – Identity Development (n = 17)

Reference	Location	Sample size	Sport and level	Methods	Examines academic identity	Examines athletic identity	Main finding(s)
Antshel et al. (2016)*	North America	19738 (11875 male)	Various sports, NCCA D1, DII and DIII	Quantitative, cross-sectional	Yes	Yes	On average, student-athletes identified slightly more with their athletic role than with their student role.
Beron and Piquero (2016)	North America	21000 (gender not specified)	Various sports, NCCA D1, DII and DIII	Quantitative, cross-sectional	Yes	Yes	No significant differences in athletic identity across NCAA divisions. No significant gender differences in athletic identity.
Falls and Wilson (2013)	North America	12 (all female)	Soccer, professional, semi-professional, and club levels	Qualitative, cross-sectional	Indirectly	Yes	Team sports provided a ‘temporary community’, which fostered a collective identity. Decisions to pursue tertiary studies signified an autonomous desire to develop a future non-sporting identity. Significant adjustment difficulties and athletic identity loss following tertiary education competition.
Fuches et al. (2016)*	Europe	221 (117 male)	Various sports, national or international levels	Qualitative, cross-sectional	Indirectly	Indirectly	Female student-athletes reported putting more effort into their academic studies, and reported greater efficacy in meeting academic goals, than male student-athletes.
Kimball (2007)*	North America	12 (7 male)	Various sports, NCAA DI	Qualitative, cross-sectional	Yes	Yes	Student-athletes arrived at university with strong athletic identities, and only developed academic identities later in their degrees. Developing a non-sporting identity was important for experiences of personal autonomy.
Lally (2007)	North America	6 (3 male)	Various sports, intercollegiate level	Qualitative, longitudinal	Yes	Yes	Strong athletic identities were fostered by student-athletes, especially early in sporting careers. Many student-athletes developed strategies for managing impending sporting retirement, including increasing identification with their academic identities.
Lally and Kerr (2005)*	North America	8 (4 male)	Various sports, intercollegiate level	Qualitative, longitudinal	Yes	Yes	Student-athletes reported greater investment in academic identities in later university years, and subsequent divestment in their athletic identities.
Lopez de Subijana, Barriopedro, and Sanz (2015)	Europe	63 (27 male)	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Yes	Male student-athletes reported stronger athletic identities than females. The strength of an individual’s athletic identity was unrelated to sport type.
Lupo et al. (2017a)	Europe	760 (375 male)	Various sports, various sporting levels	Quantitative, cross-sectional	Yes	Yes	Sub-elite athletes reported lower identity as a student-athlete than elite athletes. Younger participants (≤ 24

Lupo et al. (2017b)*	Europe	616 (306 male)	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Indirectly	years) reported higher identification with being a student-athlete than older participants. Validation of the Sports and Academics Questionnaire (SAMSAQ) showed female student-athletes to report greater academic motivation compared to males. Sub-elite athletes reported lower sports motivation compared to elite athletes.
Lupo et al. (2012)	Europe	314 (118 males)	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Indirectly	No difference in academic or sporting motivation between genders or between types of sport (team or individual).
Miller and Kerr (2003)*	North America	8 (4 male)	Various sports, intercollegiate level	Qualitative, cross-sectional	Yes	Yes	Student-athletes showed early over-identification as athletes. The development of academic identities was deferred to later years of university study.
Sturm et al. (2011)	North America	188 (121 male)	Various sports, NCCA D1 and DIII	Quantitative, cross-sectional	Yes	Yes	Academic identity was stable throughout university. Females reported stronger student identity. No significant differences between academic or athletic identities between NCAA DI and DII student-athletes
Tekavc, et al. (2015)*	Europe	12 (6 male); all retired from sports, 6 completed university	Swimming and basketball, professional level	Qualitative, cross-sectional	Indirectly	Indirectly	Female athletes showed more motivation than males to pursue academics and to achieve higher academic grades. Engagement in academics was related to personal satisfaction and self-confidence, particularly for females.
van Rens et al. (2019)	Australasia	Study 1: 8 (3 male) Study 2: 94 (46 male)	Various sports, various sporting levels	Mixed methods, cross-sectional	Yes	Yes	Student-athletes developed both athletic and academic identities, although no relationship was found between the strength of these two identities.
Woodruff and Schallert (2008)*	North America	9 (5 male)	Various sports, NCCA D1	Qualitative, cross-sectional	Yes	Yes	Change in domain-specific motivation was reported to precede changes to academic or athletic identity salience.
Yukhymenko-Lescroart (2014)	North America	596 (307 male)	Various sports, NCAA DI	Quantitative, cross-sectional	Yes	Yes	Student-athletes in club level sport reported higher academic identity and lower athletic identity than those in elite level sport. Student-athletes reported stronger athletic identity than academic identity across sporting levels. No gender differences found in the strength or academic or athletic identities.

Note * identifies studies that are presented in more than one table

Identity Development

A common finding amongst the 17 reviewed papers looking at identity development was that student-athletes simultaneously invested in both their academic and athletic identities (e.g., Kimball, 2007; van Rens et al., 2019; Yukhymenko-Lescroart, 2014). However, student-athletes primarily identified themselves as athletes, with their athletic identity being more central to their self-definition than their academic identity (Antshel et al., 2016; Lally & Kerr, 2005; Miller & Kerr, 2003). Students engaging in elite level sport reported stronger identification with the athletic role, compared to those competing at sub-elite levels (Lupo et al., 2017a; 2017b; Yukhymenko-Le-

schoart, 2014; van Rens et al., 2019). Student-athletes often reported showing an early over-identification with the athletic role (Kimball, 2007; Miller & Kerr, 2003), which aligns with existing research identifying the high risk of athletic identity foreclosure for elite athletes, particularly in late adolescence (Brewer & Petitpas, 2017). However, findings suggest that the importance of the athletic identity in student-athletes may weaken over time as alternative roles (e.g., student) are explored (Lally & Kerr, 2005; Miller & Kerr, 2002). The weakening of the athletic identity may also be a protective self-regulatory process to minimize the impact of impending loss of an athletic role for those approaching sporting retirement (Lally, 2007). Some student-athletes attempted to proactively manage this impending 'identity crisis' at sporting retirement by further investing in their academic (and other non-sporting) identities (Lally, 2007). Together these results affirm established theory (e.g., Stryker & Burke, 2000) that identity is both dynamic and multidimensional in structure, and that student-athletes may simultaneously develop and invest in academic and athletic identities based upon their roles in these domains. Results also suggest that for student-athletes, their athletic identity is deeply embedded, and remains central to self-definition until athletic retirement.

Eight of the 17 studies in this theme investigated the role of demographic factors, such as gender, in the identity development process, providing inconsistent results. Female student-athletes reported stronger academic identities (Sturm, Feltz, & Gilson, 2011), greater motivation towards academics (Lupo et al., 2017b; Tekavec, Wylleman, & Erpič, 2015), and greater prioritization of academic pursuits (Fuches et al., 2016) compared to their male counterparts. This gender difference was proposed to reflect greater opportunities for an ongoing professional career in sports for men compared with women, hence women may be more motivated to explore non-sporting identities (Fuches et al., 2016; Sturm et al., 2011). However, this finding was not unanimously replicated, with other research failing to show these gender differences (Lupo et al., 2017b; Lupo Tessitore, Capranica, Rauter, & Doupona-Topic, 2012; Yukhymenko-Lescroart, 2014).

Gender differences have also been observed in relation to the development of athletic identities, with male student-athletes reporting stronger athletic identities compared to females (López de Subijana, Barriopedro, & Sanz, 2015; Melendez, 2009). Mignano et al. (2006) provided context to these findings, with their work revealing that female student-athletes reported higher levels of athletic identity in same-sex campuses, compared to co-educational campuses. This finding was proposed to reflect an increased salience of the stereotypical 'feminine' role when studying with male students, which may be inconsistent with the athletic stereotype, and may subsequently influence female divestment from their athletic identities. Additionally, direct or indirect feedback from other students (see Ewing & Allen, 2017; Mortimer et al., 2015), based upon gender stereotypes, may work to legitimate the athlete role identity in males, and weaken the identity in females. Indeed, research beyond the scope of this review has identified a negative relationship between athletic identity and 'femininity' (Lantz & Schroeder, 1999). Conversely, other research found no gender differences in athletic identity in student-athletes (Beron & Pique-

ro, 2016; Yukhymenko-Lescroart, 2014). Inconsistency across these results suggests that gender may influence identity development and related behaviors (Mignano et al., 2006), but that identity development is complex, and that context may play a role in facilitating the influence of gender on identity.

Table 2

Key Characteristics of Studies Examining Academic and Athletic Identity in Student-Athletes: Theme – Role conflict and Wellbeing (n = 10)

Reference	Location	Sample size	Sport and level	Methods	Examines academic identity	Examines athletic identity	Main finding(s)
Aquilina (2013)	Europe	18 (8 male)	Various sports, Olympic or professional levels	Qualitative, cross-sectional	Indirectly	Indirectly	Balance between dual roles is required to successfully meet the demands of education and sport. Older student-athletes were more successful in achieving balance.
Brown et al. (2015)	Europe	9 (5 male); 6 current student-athletes, 3 recently graduated	Various sports, various sporting levels	Qualitative, cross-sectional	Yes	Yes	Students reported struggling to meet the demands of sport and academics. Academic flexibility assisted students in meeting academic goals, such as allowing students to change between lab groups to attend competition.
Fuches et al. (2016)*	Europe	221 (117 male)	Various sports, national or international levels	Qualitative, cross-sectional	Indirectly	Indirectly	Perceived role conflict was greater for student-athletes competing at an international level compared to national level. Social support was helpful in supporting student-athletes to balance dual careers.
Geranosova and Ronkainen (2014)*	Europe	5 (2 male)	Various sports, amateur and professional levels	Qualitative, cross-sectional	Indirectly	Indirectly	Family was identified as a key emotional and financial support. Student-athletes perceived limited structured support was available to help them balance multiple role demands.
Healy et al. (2016)	Europe	204 (103 male)	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Indirectly	Student-athletes reported moderate levels of interference between sport and academic goals. Some student-athletes reported motivational facilitation between sport and academic goals.
Killeva-Jones (2005)	North America	40 (all male)	NFL, NCCA D1	Quantitative, cross-sectional	Yes	Yes	Life satisfaction, academic satisfaction, and wellbeing of student-athletes was lower when there was a greater discrepancy in attributes between the academic identity and athletic identity.
Lupo et al. (2015)*	Europe	524 (287 male)	Various sports, international and national levels	Quantitative, cross-sectional	Indirectly	Indirectly	National Federations were effective in negotiating for academic flexibility with education institutions, including altered exam schedules and tutoring.
Miller and Kerr (2003)*	North America	8 (4 male)	Various sports, intercollegiate level	Qualitative, cross-sectional	Yes	Yes	Academic and athletic roles compete. Student-athletes reduced social interaction as a method to reduce work-life conflict and to rectify poor performance in academics.
Settles et al. (2002)	North America	200 (87 male)	Various sports, NCCA D1	Quantitative, cross-sectional	Indirectly	Yes	A negative association was found between role conflict and wellbeing in student-athletes. Compartmentalization of study and sport roles had wellbeing benefits in student-athletes.
Woodruff and Schallert (2008)*	North America	9 (5 male)	Various sports, NCCA D1	Qualitative, cross-sectional	Yes	Yes	Sporting and academic roles may represent conflicting motivations.

Identity, Role Conflict, and Wellbeing

Ten studies in this review investigated role conflict between academic and athletic identities. Role conflict may occur when the demands of one role or identity, such as sport, interfere with meeting demands of another role or identity, such as academics (van Rens, Borkoles, Farrow, Curran, & Polman, 2016). Qualitative work (e.g., Healy, Ntoumanis, & Duda, 2016; Miller & Kerr, 2003) suggests that academic roles and student roles necessarily exist in competition, and that simultaneous commitment to both roles and subsequent identities may be difficult to maintain. Role conflict has been cited as a source of psychological stress in student-athletes and is related to poorer wellbeing and life satisfaction (Killeya-Jones, 2005; Settles et al., 2002).

Findings indicate that many student-athletes have developed strategies to mitigate conflict between their academic and athletic roles, such as enhancing role convergence, role compartmentalization, time prioritization and management, expectation reassessment, and leveraging personal resources, such as social and family support (Brown et al., 2015; Geranosova & Ronkainen, 2014; Killeya-Jones 2005; Settles et al., 2002). Successful implementation of these strategies was deemed beneficial to one's wellbeing, with achieving a balance between academics and athletics becoming easier to obtain with greater life experience and age (Aquilina, 2013). However, conflicting results suggest that student-athletes were not always successful in balancing multiple role demands, with time management cited as a major barrier to successfully engaging in dual careers, often resulting in avoidance-related coping strategies, such as disengagement from study or failure to attend mandatory classes (Brown et al., 2015).

Conscious shifting of the centrality of domain-specific identities, across time, may also be an important strategy in reducing role conflict, supporting wellbeing, and to achieve goals in both sporting and academic domains (Settles et al., 2002). For instance, during athletic competition, the athletic identity is likely to be highly central to the individual's sense of self; whereas during university exams the academic identity becomes more central. Indeed, one study reported that student-athletes can rapidly shift the salience of their academic and athletic identities within the span of one experimental session, as they complete different types of tasks (Yopyk & Prentice, 2005). This self-regulatory process may facilitate responsiveness to changing role and performance demands and performance optimization (Yopyk & Prentice, 2005). These findings align with existing relational identity theories (e.g., Burke & Stets, 2009) conceptualizing role identities as fluid in structure, wherein the salience of domain-specific identities may shift over time in response to role and task demands (Ashforth, Harrison, & Corley, 2008).

Identity, Career Maturity, and Motivation

The development of a strong athletic identity and an over-commitment to the athletic role may reduce a student's propensity to explore non-sporting vocations, which may have implications for their post-sporting career development (Huang et al., 2016). Indeed, athletic identity was found to negatively relate to academic adjustment (Me-

Table 3

Key Characteristics of Studies Examining Both Academic and Athletic Identity in Student-Athletes: Theme – Identity, Career Maturity and Motivation (n = 16)

Reference	Location	Sample size	Sport and level	Methods	Examines academic identity	Examines athletic identity	Main finding(s)
Antshel et al. (2016)*	North America	19738 (60% male)	Various sports, NCCA D1, DII and DIII	Quantitative, cross-sectional	Yes	Yes	In academically struggling student-athletes, GPA predicted use of academic support services only when academic identity was prominent
Erpié et al. (2004)	Europe	85 (54 male); all retired from sports, 67.1% completed university	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Yes	Most participants reported successfully adapting to their post-sporting lives after athletic retirement. A stronger athletic identity was related to more psychological difficulties after sports. Higher educated participants reported fewer occupation difficulties (finding work, financial difficulties)
Foster and Huml (2017)	North America	546 (385 male)	Various sports, NCCA D1, DII and DIII	Quantitative, cross-sectional	Indirectly	Yes	Student-athletes with stronger athletic identities were more likely to choose a degree with less academic rigor
Harrison and Lawrence (2004)	North America	143 (79 male)	Various sports, NCCA DII	Mixed methods, cross-sectional	Indirectly	Indirectly	A future career focus was reported to facilitate successful transitions out of sport for student-athletes. Student-athletes perceived that they were active agents in shaping their future career paths.
Huang et al. (2016)	Asia	345 (224 male)	Various sports, semi-professional levels	Quantitative, cross-sectional	Indirectly	Yes	The negative relationship between enriched university experiences and career barriers was mediated by career self-efficacy. Student-athletes with higher levels of athletic identity were less likely to use university learning resources.
Kimball (2007)*	North America	12 (7 male)	Various sports, NCAA DI	Qualitative, cross-sectional	Yes	Yes	NCAA students-athletes were required to nominate their major early in their degrees, which meant that many did not have time to organically develop their interests. This resulted in many participants enrolled in courses that did not intrinsically interest them. Participants reported that developing non-sporting identities was important preparation for life after sport.
Lally and Kerr (2005)*	North America	8 (4 male)	Various sports, intercollegiate level	Qualitative, longitudinal	Yes	Yes	Non-sporting career plans were ill-defined when entering university but developed over time. By the final year of university, many student-athletes no longer viewed sport as a viable future career option.
Lupo et al. (2015)*	Europe	524 (287 male)	Various sports, International and national	Quantitative, cross-sectional	Indirectly	Indirectly	Student-athletes expected a smoother transition out of sports when their State offered dual-

			levels				
Lupo et al. (2017b)*	Europe	616 (306 male)	Various sports, various sporting levels	Quantitative, cross-sectional	Indirectly	Indirectly	Validation of the Sports and Academics Questionnaire (SAMSAQ) showed sub-elite athletes reported lower career motivation than elite athletes.
Melendez (2009)	North America	101 (63 male)	Various sports, NCCA D1	Quantitative, cross-sectional	Indirectly	Yes	A strong athletic identity was associated with lower academic adjustment and personal-emotional adjustment in student-athletes
Stoltenburg et al. (2011)	North America	7 (5 males); former athletes who had experienced career ending injury	Various sports, NCCA D1 and DII	Qualitative, cross-sectional	Indirectly	Yes	Students were able to prioritize academics after career ending sport injuries. Holding a strong athletic identity made the transition out of sports more difficult.
Sum et al. (2017)	Asia	8 (4 males)	Various sports, various sporting levels	Qualitative, cross-sectional	Indirectly	Indirectly	The influence of parents and coaches on the career development of student-athletes reduced as they progressed through university.
Tekave, et al. (2015)*	Europe	12 (6 male); all retired from sports, 6 completed university	Swimming and basketball, elite level	Qualitative, cross-sectional	Indirectly	Yes	Female athletes reported investing more time into considering their future career paths, than males. Females were also more likely than their male counterparts to choose a post-sporting career path outside of sports
Torregrosa et al. (2015)	Europe	15 (10 men); all retired from sports	Various sports, Olympic level	Qualitative, longitudinal	Yes	Yes	A unidimensional self-identity focused on sport was related to poorer career planning and transitions. Some student-athletes reported studying degrees related to sports (e.g., sports science) to facilitate future sport-related employment and career transition
Tshube and Feltz (2015)	Africa	17 (12 males); all retired from sports, 10 participated in university	Various sports, Olympic or international levels	Mixed methods, cross-sectional	Indirectly	Indirectly	Athletes use education to prepare for sporting retirement and a post-sporting career. An exclusive focus on sports was related to a more difficult transition out of sports.
Yukhymenko-Lescroart (2018)	North America	1151 (55.8% male)	Various sports, NCCA D1	Quantitative, cross-sectional	Yes	Yes	Athletic identity negatively predicted ethical sporting conduct, academic mastery and academic performance goals. Academic identity positively predicted ethical sporting conduct, academic mastery, and academic performance goals.

Note * identifies studies that are presented in more than one table

lendez, 2009), academic mastery goals, and academic performance goals (Yukhymenko-Lescroart, 2018), and the success of post-sporting career transitions (Erpič, Wylleman, & Zupančič, 2004; Stoltenburg, Kamphoff, & Bremer, 2011; Torregrosa, Ramis, Pallarés, Azócar, & Selva, 2015; Tshube & Feltz, 2015). Student-athletes reporting a strong athletic identity were also less likely to utilize academic learning resources and support services (Antshel et al., 2016; Huang et al., 2016), and were more likely to choose an ‘easier’ degree, thus may have prioritized short-term sporting goals over longer-term career goals (Foster & Huml, 2017).

Compared to athletic identity, the development of an academic identity was found to relate to positive career outcomes and career readiness (Lally & Kerr, 2005).

A longitudinal study reported that student-athletes often had ill-defined non-sporting career plans when starting university, but as they reached the later years of their education they began to invest more in non-sporting identities and in their academic roles and develop more tangible and autonomous career plans (Lally & Kerr, 2005; Sum et al., 2017). Indeed, approaching graduation, many student-athletes reported no longer perceiving athletics as a viable future career plan (Lally & Kerr, 2005). Alternatively, many student-athletes reported seeking future employment in sports-related industries and some subsequently sought out relevant degrees (e.g., sports science) to facilitate employment in these roles (Torregrosa et al., 2015). This divestment in sport and focus on developing a broader skill base aligns with Heckhausen's life span model of aging (Schulz & Heckhausen, 1996), highlighting that re-training and skill diversification may be required for athletes who have overinvested in highly specialized elite sports. In this vein, engaging in education acts as a compensatory behavior to foster the development of new broader academic and professional skills required to attain future non-sporting vocational goals. Given these findings, and that studies beyond the scope of this review (e.g., Anderson, 2012; Stambulova, Stephan, & Japhag, 2007) have identified career planning as related to emotional wellbeing and coping during sporting retirement, the development of a strong academic identity is proposed to be important in facilitating successful career transitions and the development of post-sporting careers across genders.

Identity and Student-Athlete Stereotypes

In total, nine studies examined stereotypes related to student-athletes, with eight of those studies conducted in North America. These stereotypes were primarily based in perceptions that student-athletes were attending university solely on sporting merit, citing the 'dumb jock' stereotype (e.g., Bimper, 2014; Stone, Harrison, & Mottley, 2012; Yopyk & Prentice, 2005). African-American student-athletes were found to be most vulnerable to negative stereotype threat (Bimper, 2014; Stone et al., 2012), and research beyond this review (e.g., Cooper, 2012) has suggested that this may be particularly pervasive in predominately white institutions. Researchers have conjectured that compared to African-American student-athletes, white student-athletes may explicitly and/or implicitly receive greater on-campus support, which fosters positive associations with the academic role and buffers them from stereotype threat (Stone et al., 2012). One further study, conducted in Europe, found that negative stereotypes of students-athletes pervaded beyond North America, with student-athletes perceiving that university staff had lower academic expectations of them, compared to non-athlete students (Geraniosova & Ronkainen, 2014). In investigating the pervasiveness of student-athlete stereotypes, three studies consistently reported that artificially priming the athletic identity, by presenting samples of student-athletes with a test paper titled 'student-athlete' or asking them to write about a recent athletic event, caused a decline in academic task performance (Riciputi & Erdal, 2017; Stone et al., 2012; Yopyk & Prentice, 2005), and in academic self-regard (Yopyk & Prentice, 2005). These findings affirm concerns that student-athletes are vulnerable to negative stereotyping (Simon, Bosworth, Fujita, & Jensen, 2007). Student-athletes

Table 4

Key Characteristics of Studies Examining Academic Identity and Athletic Identity in Student-Athletes: Theme - Student-athlete Stereotypes (n = 9)

Reference	Location	Sample size	Sport and level	Methods	Examines academic identity	Examines athletic identity	Main finding(s)
Bimper (2014)	North America	255 (all male)	NFL, NCCA DI	Quantitative, cross-sectional	Indirectly	Yes	Athletic identity negatively predicted academic outcomes in African American student-athletes. No link was found between racial identity and academic outcomes.
Blodgett and Schinke (2015)	North America	13 (8 male), 4 at university	Hockey, various sporting levels	Qualitative, cross-sectional	Indirectly	Yes	Native Canadian student-athletes experienced backlash from their own communities for pursuing Euro-Canadian career pathways. Pursuing a dual career may be a way for minority groups to reduce cultural stereotyping
Feltz et al. (2013)	North America	318 (111 male)	Various sports, NCCA DI, DII and DIII	Quantitative, cross-sectional	Indirectly	Yes	Athletic identity positively predicted susceptibility to stereotype threat. Athletic identity tended to be higher in student-athletes when they perceived their coaches had lower belief in their academic ability
Geraniosova and Ronkainen (2014)*	Europe	5 (2 male)	Various sports, amateur and professional levels	Qualitative, cross-sectional	Indirectly	Indirectly	Student-athletes perceived that university staff perceived them as less academically able, compared with non-athlete students.
Hawley et al. (2014)	North America	245 (150 male); 71 student-athletes and 174 non student-athletes	Primarily NFL, intercollegiate level	Quantitative, experimental, cross-sectional	Indirectly	Indirectly	Student-athletes were judged more harshly by other students for deviant behaviors.
Mignano et al. (2006)	North America	145 (all female)	Various sports, NCAA DIII	Quantitative, cross-sectional	Indirectly	Yes	Athletic identity and student involvement were higher in females attending same-sex universities compared to those at coeducational universities
Riciputi and Erdal (2017)	North America	60 (33 male)	Various sports, NCAA DIII	Quantitative, experimental, cross-sectional	Indirectly	Indirectly	Priming with the athletic stereotype resulted in a decrease in effort and performance in a mathematics assessment. No effect of gender
Stone et al. (2012)	North America	151 (gender not listed)	Various sports, various sporting levels	Quantitative, experimental, cross-sectional	Indirectly	Indirectly	Priming with the 'scholar-athlete' identity related to poorer verbal reasoning test results. African American student-athletes were more susceptible to negative stereotyping
Yopyk and Prentice (2005)	North America	67 (all male) 37 athletes and 30 singing group members	Ice hockey, intercollegiate level	Quantitative, experimental, cross-sectional	Indirectly	Indirectly	Student-athletes had significantly lower GPA than non-athletes. Priming student-athletes with their athletic identity decreased academic self-regard, and academic task performance compared to non-athletes

Note * identifies studies that are presented in more than one table

may internalize these stereotypes, which may have subsequent negative implications for their academic performance (see Bimper, 2014).

Directions for Future Research

Methodological recommendations. Firstly, all but three of the studies in this review were conducted cross-sectionally; subsequently, there is not yet a clear picture of the causal relationship between the development of academic and athletic identities and their relationships with wellbeing and performance outcomes. Future investigations of academic and athletic identities are encouraged to use within-person longitudinal modelling to explore the dynamic nature of self-identities, and how the relative importance of key self-identities change over time in response to changing task and role demands.

Secondly, there appears to be no gold standard for measuring academic and athletic identities (see Guidotti et al., 2015). Despite recent concern as to psychometric validity of the AIMS, relating to discrepancies in item factor loadings (Burns, Jasinski, Dunn, & Fletcher, 2012), one third of the quantitative studies in this review used this measure of athletic identity. Findings of this review suggesting that student-athletes may simultaneously develop salient academic and athletic identities, indicates that the measurement of these identities on a sliding scale (per Antshel et al., 2016), may not have an empirical basis as they fail to align with our theoretical understanding of relational identities as linked to key (often multiple) life roles (Stets & Burke, 2000). Additionally, a single item is unlikely to be sufficient when measuring the complexities of self-definition (Rafaeli-Mor, Gotlib, & Revelle, 1998). Yukhymenko-Lescroart (2014) has addressed these concerns by developing the AAIS, which has promising psychometric properties. We encourage future research to examine the cross-cultural psychometric validity of the AAIS as it could become a gold standard in dual career research.

This review narrowly focused on the academic and athletic identities of student-athletes. Although these identities are proposed to represent salient identities for this sample, future researchers are encouraged to consider the wider context and intersectionality of other important identities, such as identities as a female, atheist, and heterosexual, and roles beyond the university context such as employee, spouse, and parent (Caza et al., 2018).

Finally, research investigating academic and athletic identities has, perhaps logically, used samples of student-athletes who are currently engaged in dual careers. However, this methodology may inherently cause a survivor bias (Smith, 2014), where characteristics of those remaining in dual careers are interpreted as their reasons for pursuing dual careers. We would recommend researchers investigate the academic and athletic identities of not only those retained in dual careers, but also those who decide to drop out of education to focus on sport or vice versa, investigating reasons leading to departure decisions.

Context recommendations. This review has revealed that 52% of the contemporary literature on the identities of student-athletes has been conducted in the North American collegiate context, primarily in NCAA colleges. We may expect that the

structural differences between the NCAA and systems existing beyond North America, may have a significant influence on student-athletes' identity development, role conflict and wellbeing, and career development (Ryba, Stambulova, Ronkainen, Bundgaard, & Selänne, 2015). For instance, in contexts where elite sports are not integrated within the formal university systems, decisions to pursue an education are likely to be made autonomously, based on a genuine interest in furthering one's education. Hence student-athletes operating outside of the NCAA may be more intrinsically motivated to pursue education and in exploring self-identities beyond sport. Subsequently, it is proposed that academic and athletic identities may be more intertwined among NCAA student-athletes, while greater separation of the athletic and academic identities may be prevalent among student-athletes in non-NCAA systems. Subsequently, we recommend future research targets student-athletes outside of the NCAA system, so that these contextual differences can be explored.

We also encourage future research to explore how context may influence negative stereotyping of student-athletes. The degree to which negative athlete stereotyping occurs in academic settings outside of North America is largely unknown and is a matter for further investigation. Further, researchers are encouraged to expand upon the work of Chen and colleagues (2010) and explore positive self-perceptions and positive stereotypes associated with student-athletic roles, and whether cross-cultural differences exist in these perceptions.

Implications

Understanding identity development in student-athletes will better equip universities and sports practitioners in supporting athletic development initiatives. NCAA institutions have greater authority than other universities to make sporting participation contingent upon student-athlete class attendance and achievement of minimum GPAs, as well as increased ability to reduce scheduling conflicts between sporting and academic events (Ridpath, 2008). However, there are several ways that all universities may assist student-athletes in reducing role demands. Because attending mandatory classes was identified as an obstacle for student-athletes especially during times of sporting competition, providing flexibility to change between allocated class times or offering external or online courses may increase academic engagement (see Brown et al., 2015). Student-athletes may also benefit from flexibility regarding minimum course duration (Brown et al., 2015; Fuches et al., 2016). University athlete assistance programs may be useful in helping student-athletes develop strategies for better managing their time, and for liaising between the university and the student for seeking academic flexibility. Given that this review has also identified career planning as important for facilitating successful career transitions out of sport, access to career planning resources is likely to be important in fostering student-athletes to develop professional self-identities beyond sport.

Conclusion

In conclusion, in surveying available literature relating to the academic and athletic identities of student-athletes, this review identified and interpreted 42 studies simultaneously exploring these identities. Results revealed that contemporary research on the self-identities of student-athletes has focused on: the development of academic and athletic identities through university, role conflict between dual careers and the influence on wellbeing, career motivation and maturity, and stereotype threats to student-athletes. The findings suggest that student-athletes develop academic identities, albeit these are likely to be less important to their self-definition compared to their athletic identities, particularly in earlier university years. Many student-athletes report awareness of the limited timeframe of participation in elite sports and pursue academics to foster their post-sporting careers and to facilitate a successful transition out of sports.

Considerations for future research were examined, and importantly it was proposed that future research consider the influence of differences in national talent development systems on the development of academic and athletic identities. It is important that dual career research is better able to delineate how academic and athletic identities develop in student-athletes, and how these processes affect psychological wellbeing and performance outcomes. A better understanding of these processes will inform policy and practice among sporting organizations, universities, and sports psychologists to facilitate the performance and wellbeing of student-athletes in education and sport.

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Note: * indicates references included in the review