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Review

Collegiate athletes' mental health services utilization: A systematic review of conceptualizations, operationalizations, facilitators, and barriers

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Abstract

Background: While mental health among collegiate athletes is receiving increased attention, research on factors surrounding collegiate athletes' decision to seek mental health services is limited. The goal of the present review was to analyze and synthesize the current literature concerning collegiate athletes' utilization of mental health services, including the facilitators of and barriers to use of these services.

Methods: The analysis was guided and organized using a socio-ecological framework, which considered the unique context in which collegiate athletes study and perform. A total of 21 articles, published between 2005 and 2016, which concern U.S. collegiate athletes' mental health services utilization (MHSU) were selected and included for the final analysis. Conceptualizations and operationalizations of MHSU were compared and contrasted. Facilitators of and barriers to athletes MHSU were examined and summarized while appropriately considering the proximity of each factor (facilitator or barrier) to the athletes.

Results: Results showed variations in conceptualizations and operationalizations of MHSU in the articles analyzed, which made interpretation and cross comparison difficult. Collegiate athletes are willing to utilize mental health services, but gender, perceived stigma, peer norms—for athletes and coaches—plus service availability impact their MHSU.

Conclusion: Key stakeholders, administrators, and public health officials should partner to eliminate MHSU barriers, support facilitators, and generally empower collegiate athletes to actively manage their mental health.

Keywords: College athlete; Mental health; Mental health services; NCAA; Psychology; Sport psychology; Systematic review

1. Introduction

Collegiate student-athletes represent a unique population of young adults. Distinct from their non-athlete peers, collegiate student athletes must manage the challenges of college academics while maintaining a peak physical fitness level and the responsibilities associated with sports team membership.[1] Such strenuous demands put male and female collegiate student-athletes at potential risk for various mental health concerns.[2] According to data from the National College Health Assessment surveys, about 31% of male and 48% of female National Collegiate Athletic Association (NCAA) student-athletes reported either depression or anxiety symptoms each year of the 2008 and 2012 academic years.[3] Evidence also shows that collegiate athletes are at risk for clinical or subclinical eating disorders,[4,5] substance abuse,[6] gambling addictions,[7] sleep disturbances, mood disorders, and even suicide.[3] To address increasing concern regarding athletes' mental health, the Association for Applied Sports Psychology (AASP) and the NCAA Sports Science Institute both called for more research studies focused on improving collegiate athletes' mental health and overall well-being. In March 2016, the NCAA outlined *Mental Health Best Practices* that athletic departments must enact to raise awareness of mental health services availability, employ various types of mental health care providers, create referral systems, and utilize "pre-participation mental health screening".[8]

Prior research demonstrates the utility of examining athletics participation and athletes' health through a socio-ecological lens.[9,10] Per the socio-ecological framework, individuals make health decisions and enact health behaviors inside a complex

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social environment; the social environment influences these individuals and they, in turn, affect their social environment.[11] Athletes hold and act on their own attitudes, beliefs, and opinions regarding mental health. Additionally, the attitudes and perceptions of people close to these athletes impact their health-oriented opinions and actions. Those affecting the athletes' health decision-making are considered stakeholders and include the athletes' social groups and the cultural environment around the athlete.[12,13] In the case of the collegiate student athlete, the sociocultural views on mental health held by teammates, friends, family members, athletic trainers, coaches, as well as the local, regional, and national athletics administrative environment, impact how the athlete will respond to mental health-related challenges.[2,3] Likewise, more athletes utilizing mental health services, in turn, should impact the stakeholders' cultural views and responses to collegiate athletes' mental health service needs.

Student athletes, unlike their non-athlete collegiate peers, must balance the simultaneous rigors of academic and athletic life and transition to the independence of adulthood while maintaining family, friend, and peer networks. The pressure to perform well in all facets of life impacts collegiate athletes academic and on-field performances.[14,15] Research demonstrates college students often do not recognize or admit personal mental illness symptoms or are unaware of available mental health services (i.e., counseling, psychotherapy, comprehensive treatment plans).[16,17] The social stigma associated with seeking mental health treatment can be an overwhelming barrier.[18] While collegiate athletes did report being more willing to seek help for a future mental health concern than their non-athlete counterparts, collegiate athletes were less likely to report receipt of mental health care.[3] The perceptions and norms of the athletic team (e.g., teammates, coaches, and athletic trainers), and the social and cultural environment (e.g., athletic department, university) around the athletes impact how athletes view mental health care and those who seek mental health services.[19–23] Institutionally and environmentally, some college athletic facilities may lack appropriate resources tailored to the student athlete in terms of confidentiality, convenience, and cultural sensitivity. Likewise, even if an athletic department or student services center provides student athletes mental health-care resources, the care provider charged with caring for the athletes may be underqualified[24] or stretched too thin.

Researchers, university officials, athletics programs, and policy makers are dedicating more time and resources to addressing the prevalence and care of collegiate athletes' mental health concerns.[25–28] Recent research showed athletic administrators were willing to hire sport psychology professionals to aide collegiate athletes enhance on-field performance, as well as career and personal development.[29] Athletic administrators' knowledge and personal preferences can directly impact the type of mental health professional hired or contracted to counsel athletes.[30,31] It is important to note that mental health services offered to collegiate athletes may be performed by a variety of professionals including sport psychologists, sport psychology consultants, licensed clinical social workers, psychiatrists, psychiatric mental health nurses, licensed mental health counselors, mental skills trainers, mental resilience specialists, and even primary care physicians trained specifically to manage mental health disorders. Such professionals possess varied educational and training backgrounds and may provide highly individualized support and treatment or more generalized team support. For instance, sport psychologists usually hold a doctoral degree accredited by the American Psychological Association and are trained to work with collegiate athletes on mental health related issues, including depression, anxiety, or substance abuse. On the other hand, sport psychology consultants often hold a master's degree, are certified in sport psychology, and are trained to work with collegiate athletes on athletic performance related issues (AASP).[8,32,33]

A systematic look at how key stakeholders in athletes' lives affect mental health services utilization (MHSU) is missing from this area of research. Likewise, the literature is incomplete regarding the beliefs collegiate student-athletes hold regarding using mental health services and how these views shape their behaviors. Together, the personal characteristics, attitudes, and beliefs of the athletes and stakeholders may ultimately influence mental health service utilization and, subsequently, improved mental health outcomes in the collegiate athlete population. The aims of this systematic review were to (1) analyze existing literature concerning collegiate athletes' use of mental health services by summarizing conceptualizations and operationalizations of mental health services in current literature and (2) understand the facilitators of and barriers to use of mental health services by collegiate athletes through a socio-ecological lens.

2. Methods

2.1. Search strategy

The current systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies were identified through the use of 5 databases: Academic Search Complete; ERIC; Health Source: Nursing/Academic Addition; PubMed; and PsychINFO.[34,35] The literature search was limited to English-language, peer-reviewed journal articles published between January 2005 and December 2016 concerning U.S. collegiate athletes. The 11-year timeframe studied was selected because a historical picture of athletes' MHSU was not the focus of current study and not until 2013 did the NCAA host its first-ever Mental Health Task Force.[36] Non-U.S. collegiate and university athletes may interpret mental health treatment differently compared to U.S. collegiate and university athletes. World Health Organization statistics demonstrate the U.S. carries a higher depression burden than Australia, the UK, and parts of Asia[37] and, not until 2012 were private U.S. health insurers required to cover patients' mental health services.[38] Searches were constrained to the following key terms: *college athlete*, *collegiate athlete*, *college student athlete*, and *collegiate student athlete* paired (using the Boolean "AND" function) with *counseling*, *counseling assistance*, *counseling services*, *counselor treatment*, *mental health assistance*, *mental health care*, *mental health services*, *mental health treatment*, *psychological*

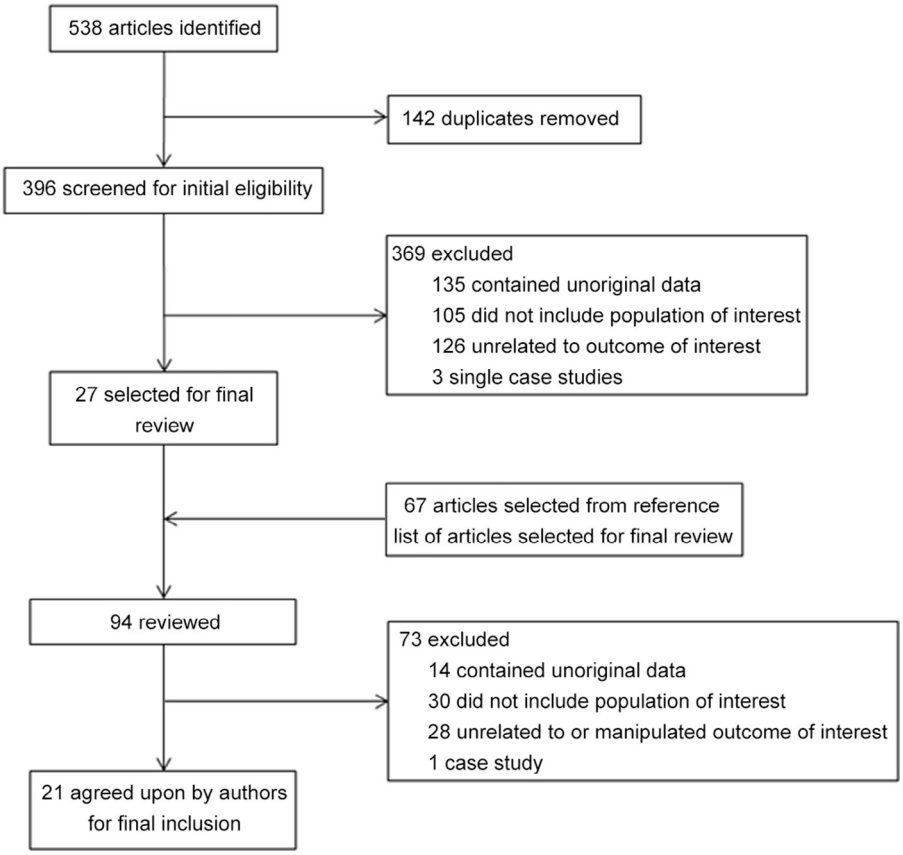

Fig. 1. Flow of article assessment from initial selection to final inclusion.

health assistance, *psychological care*, *psychological health services*, and *psychological treatment*. Searching the 5 databases rendered 538 articles and 142 duplicates were removed.

2.2. Selection process

The following inclusion criterion were used for article selection: (a) published between January 2005 and December 2016, (b) contained an analysis of original data (i.e., did not pertain to a systematic review, meta-analysis, or secondary data analysis), (c) included the study population of interest (i.e., U.S. collegiate athletes and key stakeholders in the athletes' lives), and (d) addressed some form of a conceptualization and operationalization of MHSU (e.g., use of or a referral made to a mental health services provider). The authors chose to include studies with samples of individuals who work with or support the collegiate athletes and are known to influence the health decision-making of collegiate athletes, such as coaches, parents, athletic trainers, and sports administrators to reflect components of the socio-ecological framework.[23,39] Following the elimination of duplicates, 396 articles were first screened to ensure they contained original data; 135 were eliminated. Studies not pertaining to U.S. collegiate athletes were excluded ($n = 105$). Next, 126 articles without a conceptualization or operationalization of collegiate athletes' MHSU and 3 single case studies were eliminated, which resulted in 27 articles for consideration for the final sample.

Next, a "hand search" was conducted on the references of the 27 articles pulled to ensure thorough coverage. Sixty-seven articles were obtained through the hand literature search and were reviewed. Subsequently, 94 articles were reviewed by the authors and 73 were eliminated using the same criterion mentioned above (Fig. 1). Thus, 21 articles were included for the final analysis, as agreed upon by all authors.

3. Results

3.1. Article analysis

The first and second authors analyzed 5 randomly selected articles from the final pool of 21 articles to obtain agreement on the manner in which articles were categorized and analyzed. The remaining articles were divided between the first and second authors for initial analysis. All authors reviewed and agreed upon the contents included in the 2 extraction tables. As recorded in Table 1, the authors reviewed and discussed each study's objectives, methods, results, and discussion points, as well as each study's conceptualization and operationalization of MHSU. For the purpose of this systematic review, past, current, or intended use of MHSU; referrals made to mental health and/or sport psychology services; and any use of measurement tools were analyzed and recorded.

To mirror the socio-ecological framework, facilitators and barriers to athletes' MHSU were assessed (Table 2). Factors that promoted collegiate athletes' positive attitudes toward, willingness to seek, and willingness to utilize mental health services were considered facilitators to MHSU. Likewise,

Table 1
Description of studies included in the review.

Author (year)	Sample characteristics	Methodology	Conceptualization of MHSU	Operationalization of MHSU/related instrumentation
Arthur-Cameselle and Baltzell (2012)[41]	*n* = 16: (former or current) athletes, NCAA, female only; Age: 20.7 ± 2.4 years; 88% Caucasian; Sports: track or cross country, swimming, tennis, crew	Qualitative; cross-sectional interview	Athlete receiving professional care provided by a physician, psychologist, or nutritionist to address issues	Authors developed structured interview questions and athletes reported referring themselves or receiving a referral from a coach or parent
Barnard (2016)[58]	*n* = 127: 77 athletes (NCAA D-1 and D-III) and 50 non-athlete college students; Age: 19.4 ± 1.3 years (athletes) and 19.4 ± 2.5 years (non-athletes); 42% male (athletes) and 26% male (non-athletes); 84% Caucasian (athletes) and 80% Caucasian (non-athletes)	Quantitative; cross-sectional survey	Athletes seeking help for "mental health" from mental health professionals; Barnard intentionally broadened this conceptualization to probe athletes' opinions	Devaluation-Discrimination Scale,[65,66] Social Distance Scale,[67] Attitudes Toward Seeking Professional Psychological Help Scale, Athletic Identity Measurement Scale[68]
Lopez and Levy (2013)[47]	*n* = 165: athletes, NCAA D-I; Age: 20.07 ± 1.48 years; 32.7% male; 80.6% Caucasian; Sports: 19% track and field, 13% lacrosse, 9% cross-country or rowing	Quantitative; cross-sectional survey	Athletes working with sport psychology professionals to help them with the psychological aspects of sport, physical activity, and exercise through education and training	Barriers to Help-Seeking Checklist,[69] Counseling and Psychotherapy Preferences Questionnaire[70]
Lubker et al. (2012)[48,a]	*n* = 464: athletes, NCAA D-I and D-II; Age: 18–24 years; 54.5% male; 72.6% Caucasian	Quantitative; cross-sectional survey	Athletes seeking help from a sport psychologist	Authors designed the Attributes of Sport Psychology Practitioners Questionnaire
Martin (2005)[42]	*n* = 793: 431 NCAA D-I athletes and 362 high school athletes; Age: 14–27 years (overall sample); 57.3% male (college athletes) and 43.9% male (high school athletes); 62.5% Caucasian (overall sample); Sports: men's and women's track and cross-country, basketball, men's football, women's volleyball, *etc*.	Quantitative; cross-sectional survey	Athletes seeking help from a sport psychologist	Sport Psychology Attitudes–Revised Form[59]
O'Connor et al. (2010)[53]	*n* = 104: football athletes, NCAA D-I, all male; Age: 19.83 ± 1.31 years; 35.1% freshman; 42.3% Caucasian	Mixed methods; cross-sectional survey with open-ended comments	Athletes receiving mental health care, specifically depression help, by an athletic trainer	Gender Comfort with Athletic Trainer Questionnaire[71]
Steinfeldt et al. (2009)[56]	*n* = 211: football athletes, NCAA D-III and NAIA; all male; Age: 19.47 ± 1.11 years; 70% Caucasian	Quantitative; cross-sectional survey	Athletes seeking and obtaining professional psychological help (type unspecified)	Gender Role Conflict Scale,[72] Athletic Identity Measurement Scale,[68] Stigma Scale for Receiving Psychological Help[73]
Steinfeldt and Steinfeldt (2012)[55]	*n* = 245: football athletes, NCAA D-II and D-III; all male; Age: 19.35 ± 1.63 years; 42.9% freshman; 68% Caucasian	Quantitative; cross-sectional survey	Athletes seeking professional psychological assistance (type unspecified)	Conformity to Masculine Norms Inventory,[74] Self-Stigma of Seeking-Help Scale[75]
Watson (2005)[57,b]	*n* = 267: 135 athletes, NCAA D-I (59.3% freshman) and 132 non-athlete college students (14.4% freshman); Mean age: 19.1 years (athlete) and 20.7 years (non-athletes); 56% male (athletes) and 48% male (non-athletes); 78.5% Caucasian (athletes) and 55.3% Caucasian (non-athletes); Sports: soccer, tennis, basketball, *etc*.	Quantitative; cross-sectional survey	Athletes seeking counseling for psychological distress (type unspecified)	Expectations About Counseling–Brief Form,[61] Attitudes Toward Seeking Professional Psychological Help Scale[60]
Watson (2006)[43,b]		Mixed methods; cross-sectional survey with open-ended comments	Athletes seeking services from counselors, support service personnel, and sport psychologists for personal concerns	Authors developed questionnaire to uncover participants' reasons for avoiding counseling
Wrisberg et al. (2009)[49,a]	*n* = 2440: athletes, NCAA D-I; 24.3% male; 83.5% Caucasian; Sports: baseball, basketball, cross country, field hockey, golf, tennis, volleyball, track, rowing, *etc*.	Quantitative; cross-sectional survey	Athletes using mental skills training or assistance from a sports psychology consultant able to help athletes develop emotional skills for peak performance	Authors developed questionnaire on athletes' perceptions of and willingness to seek mental skills training

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Table 1 (*continued*)

Author (year)	Sample characteristics	Methodology	Conceptualization of MHSU	Operationalization of MHSU/related instrumentation
Zakrajsek and Zizzi (2007)[52]	$n = 374$: coaches of NCAA D-I, D-II, and D-III (73.5%) and junior college, NSCAA, NAIA, NJCAA, club, and high school teams; Age: 38.5% ≥50 years; 74.3% male; 76.6% Caucasian; Experience: 17.94 ± 11.62 years; Sports: track and swimming	Quantitative; cross-sectional survey	Coaches' attitudes toward seeking and using the assistance of a sports psychology professional for themselves and their team	Sports Psychology Attitude–Revised Form,[59] Expectations About Sport Psychology,[76] authors modified items designed to measure coaches' exposure and intentions to use sport psychology services[77]
Sherman et al. (2005)[54]	$n = 894$: coaches of NCAA D-I, D-II, and D-III teams; 43.3% male; Experience: 73.6% >5 years; Sports: basketball, softball, soccer, *etc*.	Quantitative; cross-sectional survey	Coaches referring a symptomatic athlete to a professional (i.e., sport medicine professional, dietician, general therapist, or eating disorder specialist) for treatment	Authors developed the 2003 NCAA Questionnaire for Collegiate Coaches of Female Student-Athletes
Wrisberg et al. (2010)[50]	$n = 815$: NCAA D-I coaches; 45.2% male; 87.1% Caucasian; Experience: 56.3% possessed a Bachelor's degree; Sports: soccer, golf, volleyball, basketball, *etc*.	Quantitative; cross-sectional survey	Coaches' willingness to encourage athletes to see sport psychology consultants that provide mental training services to athletes	Authors developed questionnaire for coaches to report on past interactions with a sport psychology consultant and their willingness to refer athletes to and perceptions of athletes utilizing sports psychology consultant services
Zakrajsek et al. (2013)[51,a]	$n = 8$: NCAA D-I coaches; 62.5% male; 100% Caucasian; Experience: 16.50 ± 10.46 years; Sports: each coach represented a different sport (e.g., crew, basketball, *etc*.)	Qualitative; cross-sectional interview	Coaches reported their perceptions of who sports psychology consultants are, what we do	Authors developed questionnaire for coaches to report their perceptions of sport psychology services and sport psychology professionals
Clement et al. (2013)[44]	$n = 215$: athletic trainers employed with either a high school, college (41.4%), or professional team; 40% male; Age: 30.85 ± 6.85 (male) and 33.60 ± 8.41 years (female); Experience: 67.9% possessed a master's degree	Mixed methods; cross-sectional survey including open-ended items	Services provided by sport psychology consultants to athletes to help them manage the emotional and mental demands of college athletics and their personal lives	Athletic Training and Sport Psychology Questionnaire[78,79]
Zakrajsek et al. (2015)[46b]	$n = 659$: athletic trainers, NCAA D-1; 51.7% male; 85.1% Caucasian; Experience: 10.42 ± 9.42 years (8.46 ± 8.33 at NCAA D-I level)	Mixed methods; cross-sectional survey including open-ended items	Athletic trainers referring sport psychology consulting services, including psychological preparation, managing emotional demands, and mental skills training	Authors developed a survey for athletic trainers to assess their perceptions of sport psychology consultants in performance settings and in the athletic department
Zakrajsek et al. (2016)[45b]		Quantitative; cross-sectional survey	Athletic trainers reported their willingness to encourage athletes to seek sport psychology services and how beneficial they perceive these services to be	Authors developed a questionnaire for athletic trainers to assess their willingness to encourage athletes to seek sport psychology services and perceived benefit of these services
Connole et al. (2014)[29,a]	$n = 478$: NCAA D-I, D-II, D-III athletic administrators; 55.6% male; Experience: 30.5% were head athletic directors	Quantitative; cross-sectional survey	Athletes seeking services from sport psychology professionals to learn various mental skills, overcome stress, *etc*.	Authors developed questionnaire for athletic administrators to describe their preferences regarding the sport psychology professional working with their teams
Wilson et al. (2009)[30,a]	$n = 72$: athletic directors, NCAA D-I; 86.1% male; 93.1% Caucasian	Quantitative; cross-sectional survey	Sport psychology consulting services, including mental training for athletes	Authors developed questionnaire using the Sport Psychology Attitudes–Revised Form,[59] the Attitudes Toward Seeking Sport Psychology Consultation Questionnaire,[80] and items on previous experience with sport psychology
Wrisberg et al. (2012)[31,a]	$n = 256$: athletic directors (77.3%) and university presidents (22.7%); NCAA D-I; 74.6% male; 79.7% Caucasian	Quantitative; cross-sectional survey	Mental training provided by sport psychology consultants including mental skills to help athletes manage anxiety, deal with pressure, build confidence, *etc*.	Authors developed questionnaire for administrators to report sport psychology professionals' presence on their staff, support for sport psychology consultant roles, and perceptions of sports psychology program benefits

Note: Table 1 was arranged alphabetically by author clustered within each stakeholder (see Table 2) per the socio-ecological framework.

[a, b] Same datasets used in respective articles.

Abbreviations: D-I = Division 1; D-II = Division 2; D-III = Division 3; MHSU = mental health services utilization; NAIA = National Association of Intercollegiate Athletics; NCAA = National Collegiate Athletic Association; NJCAA = National Junior College Athletic Association; NSCAA = National Soccer Coaches Association of America.

Table 2
Stakeholders assessed as facilitators of or barriers to athletes' mental health services utilization, or both.

Stakeholders and attribute	Facilitator	Barrier
Athlete		
Personal characteristics		
Gender	✓ (female)[49,58]	✓ (male)[47,49,56]
Adherence to traditional masculine gender role and sport identity	✓	✓[55,56]
Sport type	✓ (team sport)[49]	✓ (contact sport),[42,56] (individual sport)[49]
Attitudes and opinions		
Preferences for mental health providers' or sport psychologists' personal characteristics (e.g., gender, age, race, *etc*.)	✓ (preference met)[47,48]	✓ (preference unmet)[44,47,48]
Attitudes toward seeking psychological assistance	✓ (no stigma)[58]	✓ (stigma)[44,47,48,56,58]
Perception of need for professional psychological assistance		✓ (no perceived need)[43]
Expectations regarding receiving sports psychological help	✓ (if positive)	✓ (if negative)[57]
Perceived time for obtaining services	✓	✓ (lack of time)[43,47]
Presence of a sports psychology consultant in various roles at the institution	✓	✓ (unsupportive)[49]
Willingness to seek sport psychology assistance	✓ (willing)[49,58]	✓ (if unwilling)[43,49]
Behavior		
Prior experience with mental health services	✓ (if services received and were positive)[49]	✓ (if services not received or past experiences were negative)[49]
Parent		
Behavior		
Referral of athlete to a mental health professional	✓ (active, non-forceful role)[41]	✓
Teammate		
Behavior		
Referral of athlete to a mental health professional	✓	✓[41]
Coach		
Personal characteristic		
Gender	✓ (female)[52]	✓ (male)[50,52]
Attitudes and opinions		
Preferences for sports psychologists' personal characteristics (e.g., gender, age, race, *etc*.)	✓ (preference met)	✓ (preference unmet)[51]
Awareness of mental health services and providers, process, and standards of counseling services	✓[51]	✓ (no awareness)[51]
Awareness of the mental health concerns of athletes	✓[54]	✓ (no awareness)[54]
Attitudes toward and support for seeking psychological help	✓ (lack of stigma and supportive)	✓ (stigma)[50]
Willingness to seek out sport psychology services	✓[52]	
Willingness to refer athletes to sport psychology service	✓[50]	✓ (unwilling)[41,50]
Awareness of other similar coaches or programs using sport psychology services	✓[50]	✓[50]
Desire for control over team dynamics and need for athletes to be self-reliant	–	✓[51,54]
Perceptions of the effectiveness of sport psychologists and services	✓ (confident)[52]	✓ (not confident),[52] (if poor perception)[50]
Expectations of athletes' receiving sports psychological help	✓ (realistic expectations)[52]	✓ (unrealistic expectations)[52]
Behavior		
Prior, current, or seeking use of sport psychology	✓ (if prior use),[50,52] (if currently using)[51,52]	✓ (if no prior use or negative prior experience)[51,52]
Referral of athlete to a mental healthcare or medical professional	✓[41]	✓ (if no referral)[41,54]
Preparation for integrating sport psychology consulting into coaching	–	✓ (if unprepared)[51]
Turning to athletes' teammates to assist a struggling athlete in lieu of a professional	–	✓[54]
Athletic trainer		
Personal characteristics		
Gender	–	✓ (male)[46,53]
Attitudes and opinions		
Favoring a sport psychology consultant as a staff member of the athletic department	✓[46]	–
Willingness to refer athletes to sport psychology service	✓[44,46]	–
Behavior		
Prior use of sport psychology consulting	✓ (if positive prior experience)[46]	–
Referral of athlete to a professional for mental healthcare and use of referral policy	✓[44,46]	✓ (if no referral or policy use)[44]
Administrators (i.e., assistant and head athletic directors)		
Attitudes and opinions		
Recognition of the need for and awareness of sport psychology services	✓[30]	–

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Table 2 (*continued*)

Stakeholders and attribute	Facilitator	Barrier
Perception of sports psychology and athletes who use mental health services	✓ (if favorable perception)[31]	✓ (if unfavorable perception)[31]
Willingness to encourage athletes and coaches use of sport psychology services	✓	✓ (unwilling)[47,48]
Belief that community or general counseling services (unrelated to sports) availability is enough	–	✓[30]
Perception of ability to afford sport psychology services	–	✓ (if perception is inability)[47,48]
Intention to include sports psychology in their program (if not currently integrated)	–	✓[29]
Behavior		
Inclusion of sports psychology in their program	✓[29,31]	✓[29,31]
Organization or environment		
Characteristics		
Athlete ease of access to services	✓[53]	–
NCAA D-I program	✓[29]	–
Coaches' access to sports mental health professionals	✓	✓ (no or limited access)[50,52]
Athletic trainers' access to sport psychology consultants	✓[44,45]	✓ (limited or no access)[44]
Athletic administrators' access to sport psychology consultants	–	✓[29]

Note: "✓" and "–" indicate presence and non-presence of the barrier or facilitator, respectively.
Abbreviations: D-I = Division 1; NCAA = National Collegiate Athletic Association.

factors that impeded collegiate athletes' MHSU by discouraging the athlete, for instance, through negative attitudes or beliefs by coaches that athletes should remain "tough", were considered barriers. Facilitators and barriers were arranged in order of the stakeholders' proximity to the athlete.[40] In other words, individuals and groups who directly affect the athlete were placed closer to the athlete and those with more diffuse influence placed further from the athlete. Parents, teammates, and coaches were conceptually placed nearer the athlete, as they interact with the athlete regularly. Subsequently, athletes' facilitators of and barriers to MHSU were analyzed followed by the parents', team(mates)', coaches', athletic trainers', and administrators' influence and organizational or environmental factors (Table 2).

Contrastingly, athletic administrators influence the collegiate athlete through policy, but less so via interpersonal interaction. Facilitators and barriers were further sorted per stakeholders' personal characteristics; attitudes and opinions; and past behaviors. Characteristics of the organization environment surrounding the athlete were also analyzed and listed either as a facilitator or barrier. Analyses and creation of tables were completed through an iterative process with all authors engaged in multiple rounds of analysis through discussion, refining, and critiquing, before consensus was reached.

3.2. Study characteristics

A total of 21 published manuscripts describing results of 19 unique studies were originally published in 12 different journals. All 19 studies were cross-sectional in nature. Fifteen studies were conducted using quantitative survey methodology, 2 studies involved qualitative interview analysis, and 4 studies employed mixed methods (Table 1).

The populations of primary interest in these studies were collegiate athletes ($n = 11$); coaches at all levels (i.e., head, associate, assistant) ($n = 4$); athletic trainers ($n = 3$); and athletic administrators at all levels (i.e., director, associate, assistant) ($n = 3$). Eight studies included NCAA D-I athlete participants, 2 included NCAA D-II athlete participants, 2 included D-III athletes (where D-I, D-II, and D-III indicate Division 1, 2, and 3 respectively), and only 1 study included National Association of Intercollegiate Athletics (NAIA) athlete participants. Four studies examined athlete participants from a combination of NCAA or NAIA programs and authors of just 1 study did not further classify athlete participants beyond "former or current" NCAA female athletes.[41] Authors of 1 paper did not provide more information on their athlete participants other than general NCAA athletics participation.[41] One study included high school athletes as a comparison group[42] and another compared collegiate athletes with non-athlete college students.[43] Athlete and coach participants represented a wide array of sports including basketball, crew, football, soccer, tennis, track and field, *etc*. Athletic trainers were the subjects of 3 studies in this review and primarily represented NCAA D-I athletic program athletic trainers.[44–46] Importantly, none of the studies included simultaneously examined collegiate athletes and members of a related population (e.g., coaches or athletic trainers) (Table 1).

3.3. Conceptualization and operationalization of MHSU

Authors of the 21 papers included in this review conceptualized collegiate athlete MHSU with considerable variability (Table 1). Most articles conceptualized athletes' MHSU as the athlete receiving services from a sport psychology professional or consultant.[29–31,42–52] Four of this subgroup of papers clearly delineated sport psychologists from other sport psychology professionals in conceptualizing MHSU.[42,45–47] However, authors of other articles conceptualized collegiate athlete MHSU as services received from wide range of providers including a general counseling services provider or a professional other than a traditional mental health services provider, such as an athletic trainer, physician, sports medicine personnel, nutritionist and dietician, or eating disorder specialist.[53–55] Three research papers viewed athletes' MHSU very generally as counseling and/or professional psychological assistance.[55–57] Four papers further specified sport psychology consulting or

care as "mental skills training" or "mental training".[29–31,50] The author of only 1 study in this review chose to explore how athlete participants themselves "conceptualize mental illness when not given any cues" (p. 164).[58]

Of 21 articles reviewed, MHSU was operationalized as (1) athletes' and stakeholders' past, current, or intended MHSU and (2) stakeholders' referral of athletes to mental health services. For example, some authors asked athlete respondents if they used sports psychology services in the past and if so, whether or not they found services to be helpful[42] or intended to use these services in the future.[48] O'Connor and colleagues[53] reported on athletes' comfort with seeking mental health assistance from athletic trainers. Seven studies operationalized MHSU as a coach or athletic trainer encouraging use of or referring symptomatic athletes to mental health care providers in the past.[44–46,50–52,54] Zakrajsek and colleagues' studies[51,52] explored whether or not coaches would be willing to refer one of their athletes to a mental health services provider. Athletic administrators and directors were not asked to report on their referral of athletes to mental health services, likely due to the distal nature of administrators and directors to athletes.[29–31]

Over half ($n = 11$) of the studies reviewed employed previously validated measurement tools to assess athletes' perceptions of, attitudes toward, and preferences concerning MHSU, as well as relevant psychosocial phenomenon. To examine athletes' and stakeholders' views of counseling or sport psychology, the Sport Psychology Attitudes–Revised Form,[59] Attitudes Toward Seeking Professional Psychological Help Scale,[58,60] or the Expectations About Counseling–Brief Form were used.[61] Some researchers also examined the concepts related to MHSU and their associations with actual behaviors of MHSU, such as personality identity, athletic identity, or gender role conflict (Table 1).

3.4. *Facilitators of and barriers to mental health services*

A number of attributes emerged as facilitators of and barriers to collegiate athletes' MHSU at the individual level (Table 2). Athletes possess personal characteristics, attitudes, and opinions toward MHSU, and have enacted past behaviors that further describe the facilitator and barriers. Overall, athletes reported a number of attitudes toward and opinions potentially facilitating or barring their MHSU, but only a few personal characteristics (i.e., gender, gender role or identity adherence, and sport type) and 1 behavior (i.e., prior experience with mental health services[49]) that could influence MHSU intentions. More specifically, males over females,[42,47,49,56] and males with a strong adherence to masculine ideas,[55,56] were less likely to report a willingness to seek mental health or sports psychology services. Collegiate athletes' desire to work with a sport psychologist or mental health services provider with particular personal characteristics;[47,48] perceptions of personal need for and expectations around receiving mental health services;[26,51] and (un)willingness to seek services[49,57] were examined.

Study results showed stakeholders such as athletes' parents, coaches, teammates, athletic trainers, administrators, and the collegiate sporting environment facilitate or inhibit these athletes' attitudes and opinions and behavior toward MHSU (Table 2). For example, coaches and administrators hold expectations of what mental health or sport psychology consulting can do for athletes and some reported negative perceptions of athletes who utilized mental health services. Two studies found coaches' desire to maintain control over team dynamics seemed to override their willingness to employ sport psychology or mental health services with their team.[51,54] However, a few studies demonstrated a lack of stigma or supportive attitude toward team or individual athletes' MHSU could facilitate MHSU. Some coaches discussed in these studies reported utilizing mental health services for their team, which likely exposed athletes to the practice and benefits of MHSU.

The influence of parents and teammates and how their role can influence the athlete by referring him or her to the appropriate mental health service provider was mentioned in only 1 article.[41] Likewise, athletic trainers, the focus of 3 studies in this review,[44–46] were willing overall to refer athletes to sport psychology services, made service referrals, and many believed the presence of a sport psychology consultant on staff in an athletic department to be helpful to the athletes. Unfortunately, some athletic trainers surveyed in the study by Clement et al.[44] reported they lacked a formal referral process inside their athletic department. Athletic administrators and directors wield considerable control over access to and type of mental health services provided to their student athletes. Yet, some administrators report an inability—whether real or imagined—to provide collegiate athletes with dedicated mental health services geared toward the athlete. Some administrators believe community or general counseling, already offered at the university, is sufficient for sport-related mental health concerns. However, some administrators report support for and a willingness to refer athletes to a sport psychology professional. Overall, the organizational structure of the athletic program and the characteristics, attitudes, opinions, and behaviors of those close to the athlete will impact whether an athlete chooses to utilize mental health services.

Analyses demonstrate a number of facilitators and barriers (1) crosscut athlete status and stakeholder type and (2) functioned as facilitators in some cases, but as barriers in others. Females were, overall, more in favor of and acted positively toward use of mental health services. Specifically, female athletes were found to be more willing to seek help from a mental health services professional and female coaches and athletic trainers were more likely to refer the athlete for assistance. Male gender and stronger male gender identity was associated with less willingness to seek or refer mental health care assistance. Interestingly, however, Barnard's recent research showed collegiate athletes were more accepting of others with mental illness compared to their non-athlete counterparts.[58] Athletes' and coaches' past experience with mental health or sport psychology consulting facilitated their willingness to use such services in the future, granted the experience was positive; negative past experiences functioned as barriers. Attitudes toward referring athletes to mental health or sports psychology services emerged as a prominent facilitator and barrier for coaches, athletic trainers, and administrators. While some athletes and stakeholders were less favorable toward sports

psychology or mental health counseling, several papers described parents', teammates', coaches', and athletic trainers' past referral to a mental health professional. Such referrals facilitated the athletes' MHSU.

4. Discussion

For as much as is known regarding the existence of mental health issues among collegiate student athletes, the literature currently lacks a complete picture of collegiate athletes' utilization of mental health services. The goals of the present review were to document the literature in the over the past 11 years concerning collegiate athletes' utilization of mental health services and to summarize the facilitators and barriers associated with the use of mental health services by members of this population. Assessments were situated within a socio-ecological framework to consider the unique context in which collegiate athletes study and perform and to obtain a comprehensive view of how individuals' attitudes, beliefs, and behaviors influence and are influenced by external circumstances.[19,62] The findings from this systematic review show athletes are at least somewhat willing to seek professional counseling or therapeutic care for mental health concerns, but face numerous personal barriers, as well as interpersonal and environmental barriers in doing so.

Articles in this study demonstrate the variability of conceptualizations and operationalizations of MHSU, which makes comparing the results across studies difficult. Some authors conceptualized MHSU as athletes seeking and then choosing care primarily from mental health counselors or sport psychology consultants.[41,43,47,48,55,57] However, other authors defined athletes' MHSU as a stakeholders' referral or willingness to make a mental health services referral.[44–46,54] Such variability demonstrates a lack of conceptual clarity regarding the definition of athletes' MHSU, which should include the type of service provider, format, and financer (e.g., student health insurance, athletic department, *etc*.). Operationalizing athletes' MHSU is likely difficult due to the diversity and lack of knowledge of the fields of counseling and psychology with regard to professionals' educational backgrounds and expertise. As mentioned, members of several professions can and do treat or support collegiate athletes for mental health-related concerns, but their services should not be considered equal. Extant literature demonstrates that athletic administrators may be aware that their athletes need deepened sport psychology-type services, but be unclear as to which sport psychology professionals to hire to fulfill the needs of their collegiate athletes. Unfortunately, some administrators continue to hire and create earning structures for sport psychologists based on their personal philosophies surrounding MHSU.[3,18]

Measurement of MHSU in recent literature is also inconsistent with authors utilizing previously validated tools, creating their own tools (either not validated or validated inside their article), or using a combination of both. Subsequently, it is simultaneously challenging to assess when, where, how, and why collegiate athletes seek and use mental health services and compare advances in this research area. Future studies should seek to create and validate more measurement tools to study college athletes' MHSU. Likewise, more research is needed into the strength of a potential relationship between willingness to use and actual use of sports psychology or mental health consulting services. Use willingness or intentions are not measurement proxies for athletes' actual MHSU.

While athletes could potentially alter their own attitudes toward and expectations of seeking and receiving sports psychology or mental health services counseling, some facilitators and barriers are beyond the student athletes' control. First, a large body of research demonstrates the attitudes and opinions of leaders often become cultural norms influencing the actions of those within their sphere of influence. Subsequently, to further encourage athletes to seek the assistance of sports psychologists or counselors, the norms surrounding MHSU need to be changed. Second, institutionally, athletic administrators should seek to (re)allocate funds to support the development or furthering of sports psychology consulting programs and staffing. While athletic administrators are more distal stakeholders in the lives of athletes, they assert profound influence over athletic programmatic structure. Athletic administrators should reassess metrics of success for the sport psychologist beyond athletes performing better on the field. On-field performance improvement is certainly key, but the overall betterment of athletes' mental health status and well-being is of utmost importance.

Lopez and Levy[47] and Lubker et al.[48] both found collegiate athletes prefer counselors with a sports background and report being more likely to utilize mental health services when their preference can be or is met. While it is important to aim for patient–counselor concordance (i.e., with regard to gender, race, background, *etc*.) on as many dimensions as possible, perhaps stakeholders should more often consider the acuity of an athlete's mental health concern. Likewise, stakeholders surrounding the athlete should encourage the athlete willing to utilize mental health service to be open to various counseling approaches and formats, given availability of athletic department or team resources.

Review of the current literature on collegiate athletes and MHSU suggests the need for further analysis concerning the influence various stakeholders have—formally or informally—on collegiate athletes. None of the studies included in this systematic review examined sport psychologists' or mental health counselors' perspectives on their encounters with collegiate athletes and what specific practices enable successful treatment of their clients. Only 3 studies in the current review specifically studied the perceptions of athletic trainers who care for only college athletes.[44–46] Athletic trainers are known to influence athletes with regard to health behavior decision-making[63] and thus warrant further research attention. Likewise, recent research shows teammates can provide social support to injured teammates and aid them in their recovery process.[64]

Subsequently, future research should seek to examine facilitators of and barriers to collegiate athletes' MHSU using a more dyadic approach, such that athletes and stakeholder perceptions and behaviors are measured in tandem. In other words, while it is helpful to explore stakeholders' opinions on various mental

health services useful for athletes, athletes may be better served by understanding how various implicit and explicit messages communicated by stakeholders impact athletes actual MHSU. Future studies may also consider developing and evaluating effective intervention strategies to increase MHSU among college athletes.

The systematic review presented here poses a few noteworthy limitations. First, the literature search was limited mostly to published articles pertaining to U.S. collegiate athletes and approaches to mental health care vary widely from country to country. Secondly, this systematic review, while conducted in a rigorous manner, is not a meta-analysis. A relatively small number of studies were assessed and, due to the variant nature of how study researchers defined and measured MHSU, the effect of an individual facilitator or barrier in predicting MHSU could not be quantified. The studies included in this systematic review were all cross-sectional in nature, further limiting causal analysis related to MHSU. Finally, only studies concerning collegiate athletes, as well as key stakeholders who influence these athletes were included in this review. A more liberal inclusion criterion concerning study sample characteristics was employed: studies pertaining to all levels of collegiate athletics play, from D-I to junior college were included. However, comparisons across these various NCAA groups with regard to MHSU could not be made due to a small number of studies in each group.

5. Conclusion

Twenty-one articles concerning 19 unique studies on collegiate athletes' MHSU were systematically reviewed and analyzed. Study findings shed light on the need for further resources dedicated to awareness and expansion of mental health services geared toward serving the collegiate athlete. NCAA athletes not only face difficulties surrounding the transition to adulthood and college studies, but the pressure to remain in peak physical and mental condition to their athletic performance. This review demonstrates the necessity for further, more rigorous research into collegiate athletes' MHSU that employs consistent conceptualizations of mental health services utilization, valid and reliable measurement tools, and improved sample quality. Both the athlete and the culture surrounding the athlete could facilitate or hamper an athlete's use of sport psychology and related mental health services. Socio-ecologically, the norms surrounding MHSU must evolve and stakeholders, specifically coaches and administrators called on to view "success" of sport psychology more dynamically. Continued research efforts are needed through deepened partnerships with the NCAA, athletic administrators, coaches, and other stakeholders to further change the norms surrounding collegiate athletes' MHSU, and ultimately, to improve mental health and well-being of the 460,000+ athletes engaged in NCAA athletics.

Authors' contributions

JY conceived of the study; JJM derived article summary tables, collected and analyzed the articles, and drafted the initial manuscript; KAC collected and analyzed the articles. All authors provided manuscript draft content and completed numerous revisions. All authors read and approved the final version of the manuscript, and agree with the order of presentation of the authors.

Competing interests

The authors declare that they have no competing interests.

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