


Midlife health crisis of former competitive athletes: dissecting their experiences via qualitative study

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ABSTRACT

Sports participation confers many health benefits yet greatly increases injury risk. Long-term health outcomes in former athletes and transition to life after competitive sports are understudied. Ending a sport may pose physical and psychosocial challenges. The purpose was to determine the lived experiences of former competitive athletes and how their sports participation impacted their long-term health and well-being. Former college varsity athletes participated in semistructured interviews focusing on their experiences, including past and current health, the impact of injuries, activity, exercise, diet and transition to life after competitive sport. Thematic analysis was completed using a collaborative, iterative process. Thirty-one (16 female, 15 male) former college athletes aged 51.3±7.4 years were interviewed. Six themes emerged: (1) lifelong athlete identity; (2) structure, support and challenges of the college athlete experience; (3) a big transition to life beyond competitive sport; (4) impact of competitive sport on long-term health; (5) facilitators and barriers to long-term health after sport and (6) transferable life skills. Continuing sports eased the transition for many but often delayed their postathlete void. Challenges included managing pain and prior injury (eg, *If I didn't have my knee injury, I would definitely be more active*), reducing energy needs and intake (eg, *When I was an athlete, I could eat anything; and unfortunately, that's carried into my regular life*), lack of accountability, changed identity and lost resources and social support. Participants suggested a programme, toolkit, mentoring or exit course to facilitate the transition. While former athletes benefit from transferrable life skills and often continue sports and exercise, they face unique challenges such as managing pain and prior injury, staying active, reducing energy intake and changing identity. Future research should develop and evaluate a toolkit, programme and other resources to facilitate life after ending competitive sports under 'normal' conditions (eg, retirement) and after a career-ending injury.

BACKGROUND

Former elite athletes live longer than non-athletes^{1 2} yet also have higher rates of musculoskeletal injury,^{3–8} osteoarthritis^{2 9} and joint replacement.^{2 10} Limited evidence to date presents an unclear picture of long-term implications of sports participation on

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Former elite athletes live longer than non-athletes yet also have high rates of musculoskeletal injury, osteoarthritis and joint replacement. Limited evidence presents an unclear picture of the long-term implications of sports participation on cardiometabolic health, body composition, function and overall wellness in ageing former athletes. In short, participating in high-level sports does not make athletes immune to health challenges as they age. Former athletes may face unique challenges as they age that could be targeted in potential future intervention studies.

WHAT THIS STUDY ADDS

⇒ While midlife former competitive athletes experienced many benefits from sport (eg, transferrable life skills and social connections), they also faced unique challenges transitioning to life after sport that impacted their long-term health and well-being. Physical challenges included managing prior injuries, modifying diet to accommodate lower energy needs and finding new or different exercise(s) and activities. Psychosocial challenges included a changed identity, losing the scheduled and structured team environment, lack of accountability and no longer having such strong social support. While many continued to participate in sports as athletes and/or coaches, which eased the transition and delayed the postathlete void, others made clean breaks.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Midlife former competitive athletes suggested a programme, toolkit, mentoring or exit course to help facilitate the transition to life after sport for current competitive athletes. Future research should design and evaluate these resources to address athletes' unique physical and psychosocial challenges as they age. These resources may ultimately facilitate long-term health and wellness in current and former athletes.

cardiometabolic health, body composition, function and overall wellness in ageing former athletes.^{11 12} Studies on mid-twentieth century

former elite athletes suggest that they have better health and function as they age^{13–16} despite high osteoarthritis prevalence,¹⁴ but sports have changed dramatically in recent decades.⁸ More contemporary data indicate that midlife former collegiate athletes have poorer physical fitness and health outcomes than recreationally active controls.¹⁷ Several factors are associated with worse physical and mental health outcomes, including collision/high-contact sport, multiple concussions, higher body mass index (BMI), persistent musculoskeletal problems, low levels of current exercise or activity and involuntary retirement from sport.^{17–20} In short, participating in high-level sports does not make athletes immune to health challenges as they age, and many athletes have long periods of reduced health and function.^{11 17 18}

Despite the common knowledge of struggles athletes face after competitive sports,²¹ limited research has examined former athletes' challenges as they transition to life after competitive sports.^{22 23} Athletes who suffer a career-ending injury often experience loss of identity, lack of external support and/or mental health decline.²⁴ Athletes after injury²⁴ and those who recently retired from sport²⁵ often struggle with engaging in sufficient physical activity, a well-known contributor to overall health.^{26 27} To our knowledge, no research has investigated the health experiences of midlife former athletes who have a unique perspective on how sports participation impacts their ageing and long-term health.

Determining the impact of competitive sports participation on long-term health may guide how healthcare providers and coaches counsel athletes and elucidate areas for future research. Our purpose was to determine the lived experiences of midlife former competitive athletes and how their sports participation impacted their long-term health and well-being. Specifically, we interviewed midlife former college athletes to characterise their lived experiences, including their previous and current physical, mental and emotional health; the impact of sports participation on current health and function; activity, exercise and dietary patterns; and transition to life after competitive sport.

METHODS

Study design

The current study is part of an ongoing mixed-methods clinical study investigating determinants of the impact of injury history and sports participation on health outcomes and physical activity patterns in former collegiate athletes (NCT05344001). We used a qualitative description methodology, an interpretive methodology yielding results with a low level of abstraction that characterise phenomena experienced by participants.²⁸

Participants

Participants were former collegiate athletes 40–64 years old interviewed between May 2022 and February 2023. Participants were required to have participated

in a collision, contact and/or jumping, cutting or pivoting sport (eg, basketball, football, soccer, softball, volleyball) at the collegiate varsity level. Collegiate varsity sports in the USA are the highest level of competition excluding professional sports for many types of sports. Collegiate varsity athletes often train and compete for approximately 20 hours (or more) per week at high intensity and have many additional team obligations including travel, team meals, film sessions and other activities. Individuals were excluded for the following reasons: neurologic (eg, stroke, Parkinson's) and/or degenerative disease that impairs function, pregnancy and lower extremity joint replacement. Participants provided written informed consent to participate in this IRB-approved study (Marquette University IRB Protocol #3967). They signed an additional section on the informed consent document explaining the qualitative study and their willingness to participate. Every former athlete from the parent study (DP5-OD031833) was invited to participate during the in-person informed consent process until the targeted sample size for each gender was met. No participants dropped out.

Data collection

Former college athletes participated in semistructured interviews (online supplemental appendix 1). Interviews were conducted by the first (JJC) and last (LBP) authors. JJC is an assistant professor of physical therapy who has been a physical therapist for 9 years and is a clinician-scientist and former college athlete (National Collegiate Athletic Association (NCAA) Division I and III basketball); he received training in qualitative study methodology from the last author (LBP). LBP is an associate professor and nurse practitioner with over 10 years of qualitative research experience. The interviewer(s) interacted briefly with participants during the in-person assessments at a state-of-the-art athletic research facility where the interviews were conducted. Participants were informed of the overarching purpose of the study and the general types of questions they would be asked. Open-ended questions probed previous and current physical, mental and emotional health; the impact of injuries; activity, exercise and diet; and transition to life after college sport (figure 1). Interviews were conducted in a private conference room by the first and/or last authors; occasionally, another research team member (eg, student research assistant) observed. Demographic data and sports participation history (ie, collegiate sport[s], competition level) were collected. Anthropometrics were measured, including height, weight and BMI. Addendums were added when participants thought of other ideas to share, but no other repeat interviews were conducted. Interviews were audio recorded. Interviewers recorded field notes immediately following each interview.

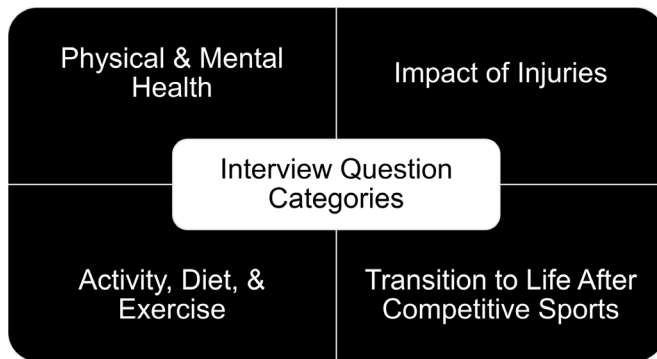


Figure 1 General interview categories (see online supplemental appendix 1 for the full interview questions and prompts list).

Data analysis

Audio recordings were transcribed verbatim using an online speech-to-text application (otter.ai) and checked for accuracy. Identifying information was redacted; transcripts were not returned to participants. Coding and thematic analysis were completed online (Dedoose)²⁹ using a collaborative, iterative process. Three research team members (JJC, TLW and LBP) coded transcripts separately and met frequently to review coded transcripts and create a comprehensive list of codes. Themes were identified from the codes until all experiences were represented. Conflicts between team members were resolved via discussion. Interviews were conducted until additional data did not add new topics or insights.

Study rigour was ensured through multiple methods, including independent coding and collaborative development of final codes and themes via consensus. Bias was limited by having transcripts reviewed by multiple researchers from differing disciplines (ie, recent elite collegiate athlete, physical therapist researcher and nurse practitioner-researcher) and frequent discussions. Credibility was ensured through establishing rapport with participants.²⁸ Intercoder reliability was ensured through frequent coding meetings and had substantial to excellent agreement (Kappa=0.76–0.90).^{30 31} Direct participant quotes in the study findings support the themes and allow the readers to consider the validity and transferability of the data.

FINDINGS

Thirty-one midlife former college athletes representing nine sports across all NCAA Divisions and the National Association of Intercollegiate Athletics competition were interviewed (table 1). Interviews lasted an average of 34 min (range 17–69 min). Six major themes emerged (figure 2).

Theme 1: lifelong athlete identity

Participants expressed a strong identity as athletes who permeated their lives and were integral to how

Table 1 Demographics

Variable	Mean±SD or number (%)
Age	51.3±7.4 years
Sex	16 (51.6%) female, 15 (48.4%) male
Body mass index (BMI)	27.9±6.1 kg/m ²
Race/Ethnicity	White (not Hispanic/Latino), n=24 (77.4%) Black (not Hispanic/Latino), n=6 (19.4%) Other (Hispanic/Latino), n=1 (3.2%)
Primary college sport	Basketball n=10 (32.3%) Football n=5 (16.1%) Baseball n=4 (12.9%) Volleyball n=4 (12.9%) Soccer n=3 (9.7%) Field Hockey n=2 (6.5%) Tennis n=1 (3.2%) Track and Field n=1 (3.2%) Cheerleading n=1 (3.2%)
Highest level of college sport	NCAA Division I n=13 (41.9%) NCAA Division II n=1 (3.2%) NCAA Division III n=12 (38.7%) NAIA n=2 (6.5%) Other n=3 (9.7%)

n, number; NAIA, National Association of Intercollegiate Athletics; NCAA, National Collegiate Athletic Association.

others perceived them. Athlete identity transcended time: *What are you? What do you get up and do every day? You go to school, or you play sports. That's all you do... My entire youth through my college years was all about athletics (57-year-old man).* Another said, *It was all sports, sports, sports (42-year-old man).*

Competitive nature

A strong subcomponent of athlete identity was competitive nature, which remained in participants long after they retired from college sports and affected interpersonal interactions. Channelling or redirecting their competitive nature was often challenging and could become problematic, as *competitiveness goes into something else, whether it's gambling, whether it's eating—anything that's a vice for you—it can turn bad because your friend has one drink, you have to have three (41-year-old man).*

Lost identity and postathlete void

Participants sensed lost identity or a postathlete void after their sport ended: *It's in your soul.... And then that's just gone, that competition's gone (52-year-old woman).* Another noted that sport *becomes your identity. You spend so much time thinking about it and doing it... It takes a while to get that out of your brain. It took me years (60-year-old man).*

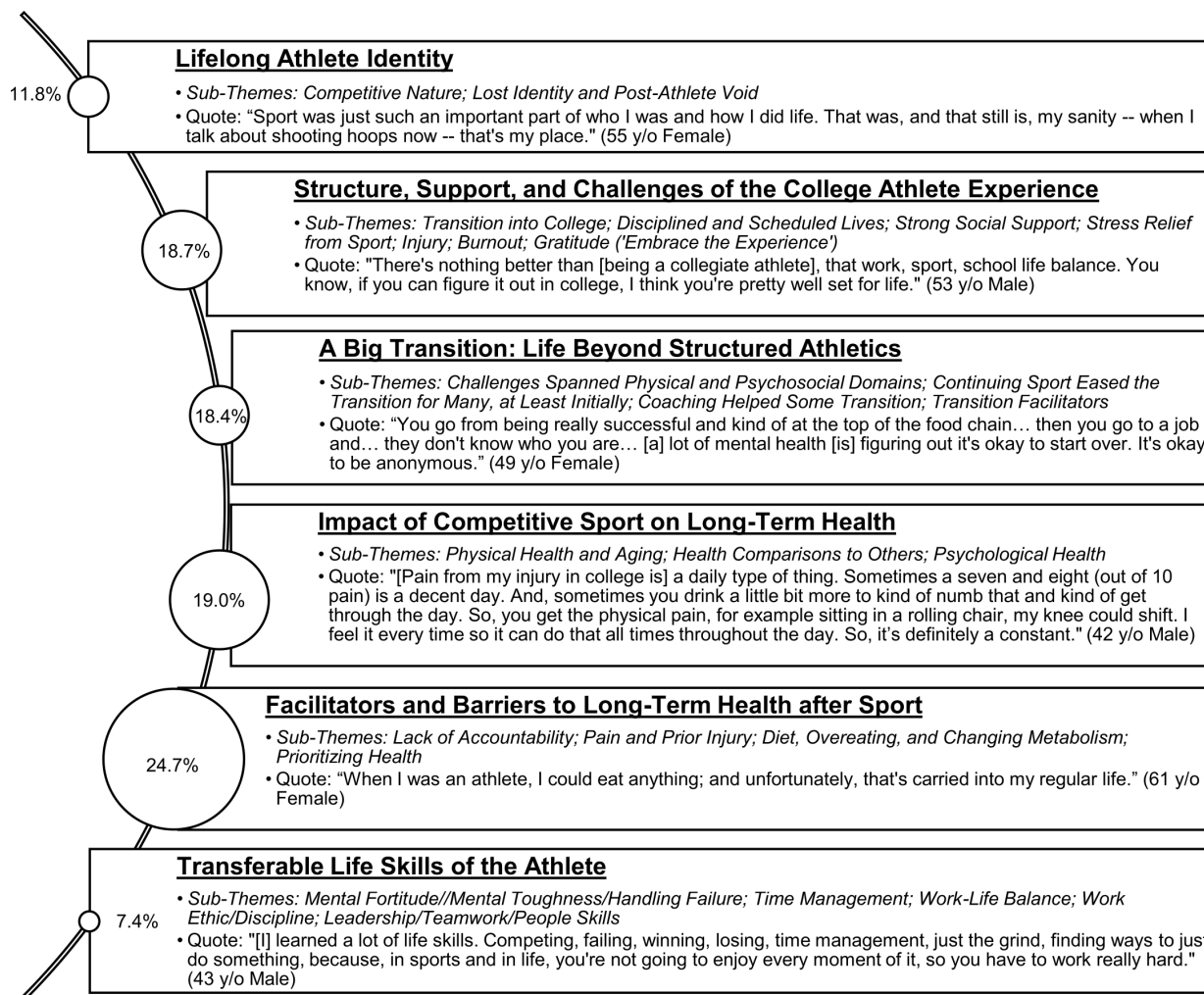


Figure 2 Six major themes, sub-themes and representative quotes (the percentages listed for each theme represent the proportion of the number of times any codes within that theme were coded out of the total number of coded quotes).

Theme 2: structure, support and challenges of the college athlete experience

Disciplined and scheduled lives

Many participants noted their college experiences differed substantially from those of their non-athlete peers, especially in season. One major difference was their disciplined and scheduled lives: *I was waking up at five o'clock in the morning and going to 6 A.M. practice, but it made me very disciplined in my academics... when I had an hour to study, I got great grades, so it kept me disciplined* (49-year-old woman).

Strong social support

Participants enjoyed immediate strong social support with *great camaraderie and teammates* (59-year-old woman) that often started during recruitment before coming to campus. These relationships often remained decades later: *You make lifelong friends, and it's not about winning or losing. It is the camaraderie and learning to work together and overcoming obstacles together as a team* (52-year-old man).

Stress relief from sport

Participants noted significant stress-relieving benefits from sport: *You had an outlet to go and exercise and sort of get rid of the stress and anything that was bothering you. And you had these breaks where for three or four hours, you're so engrossed in whatever you're doing as a college athlete, that the rest of the world goes away* (52-year-old woman). Another noted, *Sports is your sanctuary* (55-year-old woman).

Injury

The benefits also came with some risks. Sport-related physical injuries negatively impacted experiences, challenging how participants viewed their identities and managed their schedules. Following a major time-loss injury, one shared, *Academics was very difficult during that time. I must admit that was probably the hardest semester that I'd ever had... I couldn't handle it. I just I had too much time on my hands* (55 year-old woman). Another noted, *I put so much time into basketball. That was my identity. That's how I was seen. That's how I was defined. When I got hurt, you got to reinvent yourself and figure out how you want to define yourself*

(44-year-old woman). Others expressed injury leading to concerns with psychological health. One participant's injury caused *a depression within itself... because I went from an All-American to last guy on the bench, then potentially being kicked off the team... because they needed my scholarship* (41-year-old man).

Burnout

Burnout was another component of psychological health discussed by at least one-third of the participants. One summarised it as, *At the end of my playing career, I hated basketball. I hated the situation. I didn't like the team. There was a lot of very bad emotions. And I walked away from the sport and never played again* (49-year-old woman).

Gratitude ('embrace the experience')

Despite the strong negative emotions that some participants experienced, many expressed gratitude for participating in college sports and discussed the perks like travel, good food and graduating debt-free. One participant noted: *I chose to be a college athlete. I'm so lucky. I get to be a college athlete... playing college athletics was life-changing for me* (52 year-old woman).

Theme 3: a big transition to life beyond competitive sport

Transitioning from being a competitive athlete to the next phase of life was challenging. Participants described experiences of leaving sports, including why they stopped competing (eg, abrupt end due to injury, team folding or quitting vs graduating as planned) and the impacts on their career, family and social networks. Two major transitions occurred in former college athletes: (1) transition from college to postcollege life and (2) transition from sport to life after sport. These transitions coincided in some participants and occurred years or decades apart in others, as some continued sport long after college.

Challenges spanned physical and psychosocial domains

Challenges in transitioning from sports spanned physical and psychosocial domains (figure 2). Several participants expressed making a clean mental break from sport: *When I got done with college, I boycotted working out. I just shut it down* (60-year-old man). Another said: *After college, I didn't do anything (sports) for maybe a few years* (59-year-old woman).

Ending college sports was often linked to strong emotions that varied greatly among participants, ranging from sadness to gratitude to burnout. One said: *I don't think I watched a basketball game for probably eight or 10 years... it's hard for me to come to an alumni event because I just really hate the game* (49-year-old woman). In contrast, another said, *It seemed very final. Having played grade school, high school, college, and then all of a sudden, nothing. I think that was difficult... (I felt) pretty lost. I think that somewhat contributed to my depression* (61-year-old woman). Another said, *I remember my last game: it was terrible. We were crying on the sideline... I remember it was just kind of miserable; watching it end, because it just becomes your identity* (60-year-old man). However, for others, the transition after college sports

seemed natural and logical: *I pretty much just flipped from being an athlete-student to a wife and entered (my) career ... And it was like this is what I was supposed to do* (55-year-old woman).

Continuing sport eased the transition for many, at least initially

In contrast to those who quit sports after college, some participants continued to compete in their same sport recreationally, competitively or professionally. However, not all sports can be continued: *American football is not a lifelong sport. And once you're done playing in college, there are no opportunities to play again. I mean, you can play flag football, but that's not the same, not even close* (42-year-old man). Many others changed to different sports like running, triathlon or slow-pitch softball. Those who continued participating in sports often expressed fewer challenges, at least initially. For example, one participant who continued to compete into her fifties said she *transitioned just fine. I didn't have any withdrawals from college athletics, only because I continued to compete* (61-year-old woman). However, she had a very difficult transition after she stopped playing sports later in life because that was her activity and social life.

Coaching helped others transition

Some participants who did not continue playing sports after college transitioned into coaching. Coaching provided not only a consistent schedule but also meaning and purpose: *Coaching is obviously a job. I got paid for it. But it was so much more than that. It was teaching young minds; it was helping them through the experiences that I had to experience* (44-year-old woman). Another expressed, *When they (young athletes) realize you put the time and effort into anything, that's a life lesson, natural sports lesson, and I love watching these kids realize that. So that's why I like coaching* (53-year-old man). Coaching, however, did not satisfy all participants: *So then I went back to finish competing, just because it [coaching] didn't satisfy the void'* (42-year-old man).

Factors facilitating the transition

Several participants suggested methods for facilitating the impending transition from college sports. Recommendations included a programme, toolkit or course to help facilitate the transition to life after competitive sport would be helpful, addressing *sleep, nutrition and hydration, exercise, mental* (45-year-old man) and financial literacy, among others. However, another expressed that, while communication and education were very important, she doubted anything could fully prepare college athletes: *It's just like, how do you get prepared to have a baby? ... But... I think communication and education are just so important* (44-year-old woman). Participants also discussed positive role models or mentors as extremely beneficial to facilitate transition: *For me, the transition to regular life was observing his [my coach's] life, listening to his wisdom. Knowing how sports can serve as an example, in how to move through life effectively, and how to handle obstacles* (56-year-old man).

Theme 4: impact of competitive sport on long-term health

Participants discussed their health after competitive sport, noticing immediate changes after ending sport. One participant highlighted these changes, *After discontinuing college athletics, I think that's when my weight and physical health and strength was at its worst* (40-year-old man). Participants often asserted that their health was worse than in college: *Oh, there's no comparison. I don't think I can ever work at that level again. It's exhausting* (46-year-old woman).

Physical health and ageing

Many participants mentioned the effects ageing had on their ability to exercise at their desired levels. *I can't do near what I did as a college kid... I'm not even running anymore* (59-year-old woman). Regarding ageing, *Body wise—just aches and pains. You go running one day, and suddenly, your hamstring hurts, and it lasts for three months* (49-year-old woman) and *Can I still go at the same rate? No. My knees hurt daily* (52-year-old woman).

Many noted the effects of sport-related physical stressors and injury on top of normal ageing. One participant injured her shoulder in practice and told the coach she was fine. In retrospect, *I wish I would have addressed it sooner because now I could be sleeping, and my shoulders will pop out in and out and I wake up and my shoulders are sore* (41-year-old woman). At times, participants expressed changes from injury as bothersome, but they did not let it stop them: *I really don't perceive my injuries as anything other than a nuisance. I still keep moving* (59-year-old woman).

Some participants thought they were better in some aspects of health presently than in college. One former athlete felt she was physically fit with more endurance in college from playing soccer, *but overall, just with the diet, things that are different, that I'm healthier in that respect now than I was back then* (47-year-old woman). A former volleyball player mentioned she ran in college to stay in shape. Still, her workouts are now more well-rounded, with her lifting weights and participating in balance exercises like yoga.

Participants also commented on their health compared with that of their former teammates. *There's probably only 5 or 10 of us and I'm one of them, that looks like they could still play. Everybody else is kind of either really limping, big and fat* (62-year-old man). Contrastingly, *None of us want to be the one that's not staying in shape, right? And so, I look at them, and I'm like, 'wow, you inspire me.' Most of us are in better shape ('body type wise') now* (52-year-old woman).

Psychological health was positively and negatively affected by sport

Several participants discussed how sports helped them manage stress, depression or anxiety, whereas others had contrasting experiences. One participant noted, *I think what I realized late in life is I had a lot of anxiety that was masked as a younger person because I had an outlet of athletics* (52-year-old woman). Transitioning out of competitive sport (theme 3) and managing a changing athlete

identity (theme 1) presented psychological health challenges to many (see above).

Theme 5: facilitators and barriers to long-term health after sport

Participants discussed barriers and facilitators of continuing good health after college. The most common barriers included lack of accountability, pain, prior injury and changing energy (dietary) needs. Facilitators included engaging in continued physical activity and competition, often through team or endurance sports and prioritising health, sometimes through wellness challenges or social networks. Several factors, like families and work, were considered barriers by some and facilitators by others.

Lack of accountability

One barrier was a lack of external accountability as a coach no longer *tells you what to do* (52-year-old woman). As described by one participant, *I don't know if I can push myself to that level of exercise because, to me, it was insane. I'm grateful for it (college sport). But when it's gone, it's really hard to stay active at that level* (46-year-old woman).

Pain and prior injury

A major barrier to exercise was dealing with pain and injury postsports. One participant noted:

If I didn't have my knee injury, I would definitely be more active. I try to be active. I try to swim and get exercise that way. But I would definitely be up and around more, I think if my knee wasn't bothering me (61-year-old woman).

Another noted that his constant knee pain due to a prior traumatic knee injury led to daily physical limitations and that he used alcohol to 'numb' the pain (figure 2). Even participants who did not have a prior traumatic injury experienced pain that limited their activity (see theme 4).

Overeating and changing metabolism were struggles for many former athletes

Overeating was another common concern often mentioned by participants that was a barrier to good health. Many needed and were often instructed to eat large quantities of food during competitive sports, and these patterns often continued after they finished competing. Participants mentioned needing to trim down as their activity levels fell and metabolisms slowed with ageing. Others noted exercise was driven by wanting to prevent weight gain while continuing to enjoy eating as they had as athletes. A football player noted, *When you stop participating, your metabolism changes, and I didn't modify my eating habits when my metabolism started slowing down. I started gaining a lot of weight* (53-year-old man).

Prioritising health

Many participants recognised exercise's positive physical and mental health benefits, which facilitated their continued exercise. One participant summed it up: *athleticism helped me to endure many things in my life. It made*

me feel stronger, physically and mentally (61-year-old man). Others noted that they intentionally tried to learn about and improve their health. Notably, several participants acknowledged that nutrition was not a focus in college, and their nutrition improved as they learnt more about healthy eating: *Our bodies, I think, look better now. We are leaner; we eat better. You know, nutrition was not a thing... I can remember eating pizzas—a whole one to myself!* (52-year-old woman). Social support groups and wellness challenges sometimes offered through work or through maintained social networks with prior teammates, helped facilitate health.

Theme 6: transferrable life skills of the athlete

Participants discussed many skills developed as collegiate athletes that were transferable to success in life, including organisational skills (ie, time management, punctuality, dependability) and workforce skills (ie, strong work ethic, team membership, leadership abilities). Participants had strong relationship abilities and felt skilled at interacting with *other people from different worlds* (55-year-old woman) and *being with and around people all the time improved my interpersonal skills* (52-year-old woman).

Beyond the organisation and relationship skills, participants often described mental fortitude or toughness: *There's a certain mentality for sure, you know, there is... a warrior mentality... a certain like, 'kick butt' kind of attitude that you have, and it doesn't just go away* (60-year-old man). This mental toughness came with an ability to handle failure: *Sport teaches you how to work hard, how to be part of a team, how to deal with failures... Sports are a microcosm of life... great laboratories to learn about yourself and learn about how you are pursuing life* (45-year-old man). Some related that employers were particularly interested in hiring former athletes because of their work ethic and determination. Not until much later in life did some participants realise *the benefit and positive impact it [sport] would have on me in the future... from developing your character, developing different skill sets, and the network that you will have* (43-year-old woman).

DISCUSSION

While midlife former college athletes experienced many benefits from college sports, they also faced unique challenges transitioning to life after sport. Challenges spanned physical and psychosocial elements. Physical challenges included managing prior injuries, modifying diet to accommodate lower energy needs and finding new or different exercise(s) and activities. Psychosocial challenges included changed identity, loss of the scheduled and structured team environment, lack of accountability and no longer having such strong social support. While many continued to participate in sports as athletes and/or coaches, which eased the transition and delayed the postathlete void, others made clean breaks. Participants suggested a programme, toolkit, mentoring or exit course to help facilitate the transition to life after sport for current competitive athletes.

Strong athletic identities, including their competitive nature, often persisted decades after individuals stopped participating in college sports. These traits were viewed as both a benefit to many professional and personal settings yet also something that needed to be managed and channelled appropriately, particularly in some work or social environments. Strong athlete identity has been identified in other qualitative^{32 33} and mixed-methods³⁴ research and is positively associated quantitatively with postretirement depression and anxiety in former college varsity athletes.³⁵ These and other research studies^{36–38} suggest that retiring from sport is complex and often challenging as athletes' identities are tested or changed. Further research is warranted, including how to equip athletes better to prepare for this transition.

Pain may be a major barrier for many former competitive athletes to continue participating in sports and exercise. Several studies have noted that physical activity patterns may reduce dramatically and be insufficient after sports-related injury, especially ACL injuries,^{32 33} but activity patterns among former athletes are not as well documented. Ekhtiari and colleagues found that nearly one-third of former professional basketball players have moderate to severe problems with mobility, and almost half have moderate to extreme pain/discomfort.¹⁸ Additionally, opioid use is high among athletes.³⁹ In the present study, most individuals expressed changing their exercise or activity patterns after competitive sport, often in reaction to prior injuries and/or current pain. Many former athletes exercised less or completely stopped sports for some time after college; however, a few felt their workouts were more well-rounded after college. Turning to other sports, including recreational leagues like slow-pitch softball or endurance sports like running or triathlon, helped athletes stay active and engaged socially. Future research should investigate optimal management strategies for prior injuries and why some athletes continue to participate in sports and exercise, and others do not.

There are several limitations to consider when interpreting the results of the study. First, the sample was heterogeneous (ie, different sports, levels of college sport, roles on the team (star player and captain vs end-of-the-bench role player), etc); this heterogeneity, however, may make the findings more translatable to a broader range of former athletes. Second, the study relied on qualitative measures, and objective quantifications of corresponding outcomes (eg, dietary intake and activity levels) were not presented. Finally, the participants were college athletes approximately two to four decades ago. Thus, the applicability to present college athletes is unknown. We chose to focus on midlife because these individuals have experienced the transition to life after competitive sport and more fully understand the long-term implications of their sports participation on their overall health. Future research should also explore transitional experiences of recent former college athletes as many factors, including training expectations and

resources (eg, nutrition, psychological counselling, etc) are ever changing.

CLINICAL IMPLICATIONS

The off-ramp from competitive sport needs to be managed. While former college athletes benefit from transferrable life skills and often continue sports and exercise, they face unique challenges transitioning to life after sport. Health challenges included managing pain and prior injury, maintaining physical activity, reducing energy intake and changing identity. Future research should develop and evaluate a toolkit, programme and other resources to facilitate life after ending competitive sports under 'normal' conditions (eg, retirement) and after a career-ending injury.

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