

Impact of Early Sport Specialization on Interscholastic Athletes and Programs

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Over the past two decades, youth sport participation has evolved from child-driven recreational pursuits to structured, adult-driven practice sessions focused on skill development (Feeley et al., 2015). This evolution, in combination with the perceived social value of athletic competition, emphasizes high-level accomplishments in a single sport at a young age (Feeley et al., 2015). While aspiring to obtain athletic excellence is not a new phenomenon, intense training in one sport from an early age, known as early sport specialization, has gained popularity. For young athletes, early specialization boasts enhanced skill development as an advantage, which could lead to college scholarships or

professional contacts. Yet, statistics indicate only 7 percent of nearly 8 million high school athletes will play a varsity sport in college (NCAA, 2019), with approximately 2 percent awarded some form of athletic scholarship (NCAA, 2018). Fewer than 2 percent of athletes playing in the National Collegiate Athletic Association (NCAA) will continue their careers at the professional level (Brenner, 2016; NCAA, 2018). Despite the potential skill benefits, there are concerns about the physical (e.g., overuse injuries) and psychological (e.g., burnout and social isolation) repercussions of excessive training at a young age (Coakley et al., 2010; DiFiori et al., 2014; DiSanti & Erickson, 2019; Ferguson & Stern, 2014; Jayanthi et al., 2013).

As early sport specialization becomes more prominent, young athletes are at an impasse debating whether to play multiple sports or focus on one (Wright, 2015). The shift toward a single sport model has also created conflicting schedules between club and high school sport seasons, leading some interscholastic coaches to suggest their programs are affected by athletes prioritizing their club sport commitments (Athletic Business, 2014a, 2014b; Terlep, 2014; Voigt, 2016). Considering the popularity of sport specialization and its potential impacts on interscholastic athletics, the purpose of this investigation was to gain an in-depth understanding of early specialization as it relates to interscholastic athletes and programs. More specifically, this study focused on the perspectives of coaches as this population is integral to athlete development but is currently underrepresented in early sport specialization literature (DiSanti & Erickson, 2019).

Elite Athlete Development

Various talent development models and orientations have been established to study elite athlete development. Comprehensive models, such as long-term athlete development (Balyi & Hamilton, 2010), establish relationships between developmental, motivational, and psychosocial aspects of athletic participation. However, Goodway and Robinson (2015) identified the mountain of motor development framework (Clark & Metcalfe, 2002), the developmental model of sport participation (DMSP; Côté et al., 2007), and the spirals of engagement trajectory

(Stodden et al., 2008) as relevant models for understanding early specialization. Of these, the DMSP focuses on different developmental trajectories within youth sport and can serve as a framework to study single sport versus multi-sport athletes (Goodway & Robinson, 2015). The DMSP describes three distinct trajectories of sport participation: (a) elite performance through specialization, (b) elite performance through sampling, and (c) recreational participation through sampling. Through these different entries into sport, the DMSP implies elite performance can be obtained via early specialization or sampling (Côté et al., 2007). These trajectories will be described in greater detail in the following sections to describe how they are initiated and their potential outcomes.

Early Sport Specialization

As described by the DMSP, the early specialization pathway involves adolescents engaging in a single sport of choice as young as 6 years old and committing to extensive hours of deliberate practice with minimal engagement in other sports (Côté et al., 2007). Deliberate practice is characterized by activities that seek to enhance performance and develop expertise as the primary goal. Such activities are often designed to monitor performance and provide feedback, and they are distinguished from activities that indirectly result in learning, known as deliberate play (Ericsson et al., 1993). Ericsson and colleagues graphed performance as a function of chronological age based on observations of talent development in

musicians and suggested that beginning an activity at a younger age allows for the accumulation of more deliberate practice. This additional practice translates into performance advantages that ultimately cannot be surpassed by individuals that engage at any later age. Thus, expert performance and skill acquisition are thought to be largely mediated by deliberate practice (Ericsson et al., 1993). Early sport specialization is also grounded by the robustly supported relationship wherein time spent practicing is positively related to level of achievement (e.g., Bloom, 1985; Simon & Chase, 1973).

For young athletes looking to obtain elite status, early specialization is appealing due to its potential implications for skill acquisition and motor development. Skill acquisition is accomplished through the motor learning process (Ericsson, 2003), during which an athlete progresses through cognitive, associative, and autonomous phases (Coker & Fischman, 2010). In the cognitive phase, athletes comprehend the movements required to perform a skill which transitions into the associative phase where feedback is incorporated to modify the movement and increase competence. Finally, in the autonomous phase, athletes can perform the skill at maximal proficiency while concentrating on situational stimuli (Coker & Fischman, 2010). Specializing early could allow an athlete to enter the cognitive stage of skill acquisition at a younger age by accumulating hours of deliberate practice, subsequently reaching the autonomous phase earlier (Gould, 2010).

Despite enhanced skill acquisition, early sport specialization is criticized for its potential connection with negative consequences. The American Orthopaedic Society for Sport Medicine recognizes that early specialization can be detrimental to youth athletic development and overall health, citing “insufficient sleep, increased overuse injury rates, overtraining, burnout, and eating disorders” among the physical and mental health concerns (LaPrade et al., 2016, p. 3). To illustrate these concerns, Post et al. (2017) found highly specialized athletes had greater odds of reporting previous injuries and overuse injuries comparatively to less specialized athletes. Overall, an estimated 45.9% to 54% of sport injuries in athletes aged 6 to 17 years result from overuse (DiFiori et al., 2014). Despite the growing mental and physical health concerns attributed to early specialization (DiFiori et al., 2014; Goodway & Robinson, 2015; Jayanthi et al., 2013; LaPrade et al., 2016), there are indications that early specialization continues to increase. A study on elite junior tennis players reported participants initially engaged in tennis at the average age of 6.3 years, and 69.6% of the athletes were competing exclusively in tennis at the average age of 10.4 years (Jayanthi et al., 2011). Similarly, competitive travel leagues that are typically unaffiliated with school-sponsored programs start as early as 7 years of age (Brenner, 2016). Since early sport specialization is rooted in the assumption that deliberate practice is superior to deliberate play for elite development (Côté et al., 2009), these travel teams and

year-round sport programs provide easily accessible supplemental and specialized training for young athletes.

Early Sampling

Early sport sampling is presented as a viable alternate to early sport specialization that can still result in elite development while mitigating adverse consequences associated with early specialization (Côté et al., 2007). The sampling pathway in the DMSP is characterized by movement through three distinct developmental phases (i.e., sampling, specializing, and investment years; Côté et al., 2007). Engaging in sport sampling during adolescence is thought to offer benefits such as prolonged engagement in physical activity, decreased sport attrition and injury rates, and positive psychosocial outcomes (Côté et al., 2009). After conducting a review on early specialization literature, Jayanthi et al. (2013) concluded that while some degree of specialization is necessary for elite-level skill development, in most sports, there is insufficient evidence to support that specializing before puberty is necessary to achieve elite success. The authors further posited that diversifying early sport endeavors might be more likely to lead to success based on the reviewed studies.

While athletes with diversified sport backgrounds are capable of reaching elite levels (Baker et al., 2005; Hayman et al., 2014), differences in performance improvements in a target sport can occur more rapidly in specialized athletes (Fransen et al., 2012). Fransen et al. also suggested that although performance

improvements in diversified athletes may develop more slowly, their capabilities can eventually equal or surpass the performance of specialized athletes. However, this delayed skill development could translate into a disadvantage for athletes wishing to sample sports. Since specialized athletes improve more quickly in the early stages of development and display higher levels of sport-specific skills, they may have greater chances of being selected for club teams early in their athletic careers. In a sport culture where club experience is prominent and an avenue for supplemental skill development, the choice to sample sports may result in athletes being cut from an interscholastic or club team before reaching their potential.

Influences on Specialization

As the debate over early specialization versus early sampling continues, research has centered on athletes and various aspects of their development with less consideration for other stakeholders involved in athletic participation, such as parents or coaches. Ecological system theory (Bronfenbrenner, 1994) posits the ecological environment is a nested structure with five layers, all of which continually impact individual development. Similarly, the socioecological model is a broad conceptual model that analyzes physical, social, and cultural influences affecting an individual (Stokols, 1996). Multiple adaptations have been developed, one of which begins with the individual and moves outward through interpersonal, organizational, community,

and public policy levels (Lee et al., 2017). These ecological models highlight the importance of external factors on development and are a framework to assess the interactions between individuals and their sociocultural and physical environment. The focus of this study was on the interpersonal level which includes families, friends, and social networks (Lee et al., 2017).

Parents, peers, and coaches have been identified as social agents that influence an athlete's motivational climate and behavior (Atkins et al., 2015) and are all situated at the interpersonal level of the socioecological model (Lee et al., 2017). However, coaches are uniquely positioned to affect contextual factors related to motivational outcomes (Amorose & Anderson-Butcher, 2007). According to self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), the decision to participate and persist in an activity exists along a continuum that varies based upon the extent to which behavioral regulation is external or autonomous (Ryan & Deci, 2000). Rewards, feedback, deadlines, competition, and surveillance are examples of social and contextual factors that are linked to extrinsically motivated regulation. Coaches are responsible for actions such as providing rewards, determining competition decisions, and involving athletes in decision-making processes which can, in turn, influence motivation (Amorose & Anderson-Butcher, 2007). Additionally, coaches impact athlete motivation based on the manner of their instruction and assessment (Atkins et al., 2015), under-

scoring the importance of coaching roles and behaviors.

The coach-athlete relationship is inherently interpersonal and interactive as coaches can develop sport skills (Chan et al., 2011), positively encourage academic performance (Hicks et al., 2016), and serve as a platform for athletes to seek advice and guidance (Miller et al., 2002). The implications of connections between coaches and athletes were described by Jowett (2017) as “instrumental because [these connections] can activate important processes of coaching such as influencing, supporting, helping, guiding, instructing, as well as listening, willing, following, accepting, and so on in order for both coaches and athletes to develop, grow, achieve, and succeed” (p. 11).

Even though coaches are integral components of an athlete's development and social support system, there is scarce research determining how coaches perceive, understand, and address early sport specialization. To date, few studies have focused specifically on coaches. Furthermore, the landscape of youth athletics has experienced drastic changes since Hill (1987) conducted some of the first empirical studies on early specialization. For example, interscholastic administrators point to decreasing numbers of two- and three-sport athletes accompanied by a rise in single-sport athletes (Haddix, 2015). Travel teams are available to youth athletes as young as 6- and 7-years old (Brenner, 2016), and there is a greater focus on competitive success comparatively to when youth sport was a more youth-led enterprise (Coakley, 2015; Popkin et

al., 2019). Considering the role of coaches in an athlete's interpersonal social network and minimal empirical investigation from the coaches' perspective, it is necessary to establish a greater understanding of early specialization from a coaching standpoint. This purpose was achieved through the following research questions:

RQ1: What are interscholastic coaches' perspectives towards early sport specialization?

RQ2: What are coaches' perceptions of the implications of early sport specialization on interscholastic athletic programs?

Method

Research Design

To gain a detailed understanding of early sport specialization as it pertains to interscholastic athletics, the study utilized a constructivist phenomenological approach. This provided an opportunity to assess how coaches at the interscholastic level are experiencing the sport specialization phenomenon. Creswell (2007) suggests that exploring the lived experiences of several individuals can help to "develop a deeper understanding about the features of a phenomenon" (p. 60). Therefore, this study relied on the viewpoints of interscholastic coaches to describe early specialization and interpret these perspectives. Qualitative interviews were conducted with head coaches of girls' volleyball and basketball teams from high schools in a Midwestern state of the United States. Interviews employed a semi-structured format allowing

for follow-up questions to probe unique topics for each participant (Merriam, 2009).

Several strategies were implemented to enhance the trustworthiness of the study. First, credibility of the study was increased through member checks (Shenton, 2004). Transferability was facilitated through rich, thick descriptions that were acquired by providing interviewees with adequate time to discuss their perspectives (Merriam, 2009). Finally, Moustakas (1994) highlights the importance of researchers identifying and setting aside their personal experiences – known as bracketing. This is particularly important within transcendental phenomenology where there is more focus on providing a description of participant experiences. While it can be challenging to truly bracket the researcher's experiences, a positionality statement for the first author who was responsible for data collection and analysis is included. Identification and expression of this positionality also allowed these biases to be monitored through peer debriefing with other members of the research team and personal reflections (Merriam, 2009).

Researcher Positionality

The first author was a multi-sport athlete that participated in three sports during all four years of high school, leading to an inherently biased position toward a sport sampling model due to her personal sport experiences. She attended a small high school where it was typical for most athletes to diversify throughout their athletic careers. Furthermore, her

hometown was in a relatively isolated location which made supplemental training or club teams less accessible, so the sampling trajectory was the cultural norm and expectation. In addition to these experiences, when she started studying early sport specialization, she focused largely on adverse outcomes that are potentially associated with early specialization and began to view it negatively. As such, it was important and necessary to allow space for multiple perspectives on early specialization during the interviews.

Research Context and Participants

Early specialization can impact a variety of sports, but this investigation focused on girls' basketball and volleyball. There have been speculations that dominant club volleyball programs put pressure on interscholastic girls' basketball participation due, in part, to significant overlap in club volleyball and high school basketball seasons (Athletic Business, 2014a; 2014b). According to the high school sport schedules where this study was conducted, the practices for girls' basketball commenced on October 19 with the state finals held on February 27. Meanwhile, tryouts for the area club volleyball team ran from the end of October to the end of November for girls aged 14 to 18. Practices and weekend tournaments for the club volleyball season are typically conducted until national championship tournaments in June or July. Therefore, coaches were selected from girls' volleyball or basketball to focus on the interaction between these two teams.

Participants were selected from a region where club volleyball participation is prominent. While there are multiple volleyball clubs throughout the Midwest, interviewees were within a 50-mile radius of one of the nation's elite junior clubs. The prominence and availability of such an elite club has contributed to the success of area interscholastic teams and created a unique environment for volleyball specialization.

To be considered for the study, interviewees fulfilled the following selection criteria: (a) 18 years of age or older, (b) held a position as an interscholastic varsity head coach for girls' basketball or volleyball, and (c) completed at least one season with their athletic program. The final sample had a total of 13 coaches and included nine men and four women. Five participants coached girls' volleyball and eight coached girls' basketball (see Table 1). Team classifications were also considered to promote diversity in the sample. At the location and time of the study, volleyball and basketball teams were placed into one of four classifications with 'A' teams the lowest classification and '4A' teams the highest classification. The state considered school enrollment and competitive success when determining team classifications. Each classification was represented in the sample by at least one coach.

Research Tool

An interview guide was constructed based on a structure described by Henriksen and colleagues (2010). In their study on the development and

Table 1
List of Participants

	<i>Participant</i>	<i>Gender</i>	<i>Position</i>	<i>School Classification</i>
1	Rebecca	Female	Girls' Basketball	4A
2	Heidi	Female	Girls' Volleyball	3A
3	Brandon	Male	Girls' Basketball	4A
4	Ethan	Male	Girls' Basketball	4A
5	Nick	Male	Girls' Basketball	4A
6	Stephen	Male	Girls' Basketball	2A
7	Cory	Male	Girls' Volleyball	2A
8	Aaron	Male	Girls' Volleyball	2A
9	Katie	Female	Girls' Basketball	3A
10	Daniel	Male	Girls' Basketball	A
11	Jonathon	Male	Girls' Basketball	4A
12	William	Male	Girls' Volleyball	4A
13	Leslie	Female	Girls' Volleyball	4A

discovery of athletic talent, Henriksen et al. designed an interview guide with introductory, descriptive, explanatory, and conclusive components. During the introductory part of the interview guide for this study, participants were asked to share their personal background, general understanding of early specialization, and immediate impressions of specialization. For the descriptive component,

interviewees were asked to describe their experiences with specialized versus diversified athletes. In the explanatory portion, coaches and athletic directors were asked to provide insight into the factors that contributed to their beliefs on early specialization and explain how they felt specialization is affecting interscholastic sport in a broader context. Finally, in the conclusive component, participants were

asked to share their perspectives on the future of early sport specialization and its interaction with interscholastic athletics.

Suggestions from Galletta and Cross (2013) were also incorporated to ensure the formulated questions clearly connected to the research purpose and could elicit in-depth information. After developing an initial guide, the tool was reviewed by three experts in sport management and one expert in athletic training, and revisions were made based upon the review. The final interview guide was comprised of eight questions that included the following sample questions: (a) Describe your background in coaching and how you came to be in your current position. (b) How do you think specialization has affected the athletic department at your school as a whole? and (c) Describe specific examples, if any, of the effects early sport specialization has had on your current high school team.

Procedure and Data Analysis

Participants were recruited using a purposive sampling method. First, a list of high schools within the 50-mile target radius was created, and the athletic directors at these schools were contacted via publicly listed email to acquire support for the project and permission to contact their coaches. Athletic directors that supported the study were asked to provide email addresses for eligible coaches. Each coach was subsequently emailed an approved recruitment letter describing the study and inviting the coaches to participate. Face-to-face interviews were arranged for all coaches that were inter-

ested in participating, and their informed consent was obtained prior to the interview. The interviews were expected to last 30-45 minutes. Upon completion of the data collection, the shortest interview was 17 minutes, the longest was 53 minutes, and the average length was 35 minutes. Each interview was audio recorded with participant permission and transcribed verbatim. Pseudonyms were used to protect participant confidentiality. As part of the member checking process, encrypted copies of the transcriptions were sent to interviewees via e-mail to correct any misinterpretations and increase accuracy of the data (Gall et al., 2007). Only one participant requested minor changes be performed to the transcript.

A constant comparison method was utilized (Creswell, 2013; Merriam, 2009), wherein the data was simultaneously coded and analyzed through multiple stages of data collection (Kolb, 2012). Maintaining systematic rigor throughout the data collection and analysis process was accomplished by following a standard format of coding with three levels of analysis (i.e., open, axial, and selective coding; Kolb, 2012). Each transcript was initially reviewed to become familiar with the data and establish general topics. Transcripts were then analyzed line-by-line and coded. Through axial and selective coding phases, topics were rearranged, combined, and eliminated to generate categories and identify emergent themes. Data collection and analysis continued until saturation was reached (Fusch & Ness, 2015).

Findings

Analysis of the interviews provided insight into how interscholastic coaches define and perceive early sport specialization, resulting in three themes: (a) participant definitions and opinions, (b) factors influencing specialization, and (c) impact of specialization on interscholastic programs.

Participant Definitions and Opinions

To encourage participants to convey a personal definition of specialization, they were simply asked to describe what came to mind when they heard the term early sport specialization. These responses also established the foundation for participants to describe their own thoughts and opinions. Interviewees did not provide a single, consistent definition for early specialization. Instead, there were two commonalities that existed in the participants' descriptions. The first – discussed by twelve of the thirteen participants – was that early specialization involved the exclusion of all other sports. Brandon's quote highlights this sentiment, "In the truest sense, to me I would say the definition would have been somebody that gives up all other sports to truly focus in on the one." Meanwhile, Daniel described a similar definition but associated early sport specialization with a negative connotation, saying it was "railroading a kid into one sport and, basically, rather than diversifying, focusing on one sport and one sport only." Although the interviewees almost unanimously considered being active in only one sport as early specialization, Stephen noted, "[if] she

plays volleyball year-round, but she plays one season of basketball, yes she's specialized because she chooses one sport year-round and the other sport for three months." This highlights a discrepancy regarding whether the exclusion of all other sports is a necessary component of early specialization.

Six interviewees identified choosing a sport at a young age as an important factor in defining early specialization, but there was minimal elaboration by participants on defining the term *young age*. Only Brandon associated a specific age range (i.e., middle school) with early specialization. Although there was an obvious lack of explanation on what is considered a young age for selecting a sport, some coaches were clear in their opinions about when specialization should ideally occur. Six interviewees noted that athletes should delay the decision to specialize until their sophomore or junior year of high school. It was generally believed that by this stage, athletes would have taken the time to "dabble" in other sports or activities and realize their strengths and ambitions. More importantly, interviewees suggested this sampling time would allow the athlete to determine a specialization autonomously.

Despite subtle differences in how participants defined early specialization, nearly all participants expressed being personally against specializing, particularly at a young age. While most of the coaches were not proponents of early specialization, some were vehemently against it. Leslie noted that she had been on a national panel saying, "I think it's

[specialization] wrong, I think we are abusing our kids. I think our kids need a break.” Others emphasized a preference for encouraging athletes to play multiple sports due to the perceived benefits of holistic development and repeatedly described athletics as a vehicle for providing diverse experiences that are applicable to aspects of life outside of sports.

Participants generally agreed the greatest concern with specializing young children is that many of these individuals have not acquired enough experiences to know with certainty how their passions and talents will manifest. Ethan stated, “I just think it is a rare person that can figure out by the time they are twelve, thirteen, fourteen years old that this is what is going to be best, and I am going to completely buy into it.” Daniel also shared that he coached a youth team and was unable to distinguish the best skill sets of his players at the age of ten. He acknowledged distinctions were emerging by the following year, however, fundamental skills were still very developmental. Another coach indicated it might be difficult for some athletes to project how their overall development will progress and, for younger athletes, how they will compete in settings where there is a larger age gap between players (e.g., freshmen and seniors in high school).

Participants also felt that diversity in coaches, teammates, and learning atmospheres are essential to an athlete’s career. Several coaches implied that participating in multiple sports would facilitate this diversity better than associating with different coaches or teams in

the same sport. Consistently playing on the same club and interscholastic teams can cultivate fulfilling relationships with those teammates but simultaneously limit exposure to peers and coaches outside of their chosen sport. Participants believed experiencing various coaching styles and philosophies across different sports might enhance coping skills and an ability to manage adversity. Similarly, coaches felt athletic talent and ability should not come at the expense of social interactions that contribute to overall adolescent development. Leslie voiced concern that some of her players had become part of a “spandex world” due to intense time commitments with club teams. She stated, “I don’t want my kids growing up in a spandex world where all their friends are volleyball. In fact, I had a kid that’s really, really good say I don’t have any friends here.”

Factors Influencing Specialization

Interviewees identified a plethora of factors they believe are driving early specialization. These themes were organized according to the socioecological model, starting with factors that are closer to the athletes (e.g., social relationships) and moving outward to more indirect factors (e.g., recruitment policies).

Social Pressures

Coaches perceived social pressure from parents, peers, and coaches to be influential factors in an athlete’s decision to specialize early in a single sport. Given the integral role parents have in their child’s development, it is expected they

would be identified as instrumental to the decision-making processes of their children. The interesting facet of parental influence is that some participants felt the desires of parents might trump the desires of their child. William said he felt like “a lot of [specializing] is driven by the adults in situations, not the kids and that bugs me.” Specifically, if parents desire a scholarship or elite status for their child, it may be difficult to distinguish whether an athlete is specializing early due to intrinsic motivations or to reach goals their parents have established. Interviewees felt that being over-bearing and preventing athletes from autonomously deciding their sport pursuits was a disservice to young athletes. Cory explained, “I think sport specialization negatively affects a kid if it forced or pushed by the parent. If a kid chooses it on their own, I think they are positively affected by sport specialization.” Many coaches agreed the decision to specialize early needs to come from the athlete, with parents supporting their child’s endeavors and not exerting excessive pressure on them to succeed.

Coaches also observed that parents are willing to expend considerable amounts of money to provide their children with resources and training to chase the dream of a career in athletics. Jonathan described the following scenario:

If I’ve got a player that has invested all this time and money and everything into it, they expect they are going to make the team... and I think the pressure and the investment that parents are putting

into it increases the expectation of where they’ll be in the end.

At the same time, these lofty investments in an athletic future may lead to the development of inflated expectations about the chances of playing at the next level or receiving a scholarship. As Ethan said, “I think everybody has an unrealistic expectation as freshman and sophomores about what they are able to do and where they can be. So, that’s something we really need to work on at the high school level.”

Another major source of social pressure is derived from peers. Participants implied that peers are not directly exerting pressure to conform to a certain behavior or gain acceptance. Instead, peer-induced social pressure originates from parents and adolescent athletes using other successful athletes as benchmarks for success, a point that was highlighted by Stephen saying, “I think parents are starting to say, well this kid went to [a Division I school], he played for this travel team. This person’s going to [a Division I school], she played for the club team.” Athletes and parents then feel it is necessary to follow a similar pathway to attain the next level of success or establish a competitive edge which creates an environment that is characterized by a fear of falling behind. John highlighted this thought process, “[Specialization] has become so common, it has become so ready that you almost feel pressured into it because you feel like you are missing out on something.”

Parents and peers were most frequently identified as the primary sources

of pressure, but interviewees also noted that coaches can contribute to this pressure. This might be especially true if multiple coaches from different platforms (i.e., college, club, and high school) are exerting their influence simultaneously on the same athlete. For example, a coach might discourage an athlete from participating on other sport teams which Jason discussed in an anecdote of a volleyball player that went to a club tryout and was told, “if you play another sport, you can’t be on this travel team.”

College Recruitment and Scholarship

The coaches almost unanimously agreed the lure of collegiate athletics is a primary driving force behind an athlete’s decision to specialize. Nick noted that scholarships drive specialization because “whatever they think they can play college in first or wherever they can get a scholarship, they want to go after that. So, they specialize for that reason.” Many of the coaches were convinced the rising cost of education makes obtaining an athletic scholarship an enticing incentive for athletes, as well as parents. Stephen’s comment highlights this assumption:

I think parents are realizing that college is going to continue to get more expensive, and I feel like they think the chances of my son or daughter getting a scholarship for soccer is not going to be as high if my son or daughter is playing another sport, or two other sports, besides soccer.

In fact, parents seem willing to view the occasionally exorbitant price tags for club

team memberships as an investment. William stated:

Like I said, a lot of it is geared towards getting a college scholarship because the price of college is ridiculous, you know it’s astronomical...I had this discussion with a player’s mom. She said if they spend \$3,000 or \$5,000 on club volleyball, this was an investment in her college.

While the rising cost of college tuition was viewed as a contributor to the desire to obtain scholarships, participants expressed concern that focusing on this aspect of athletics might cause disillusionment given the minimal number of available collegiate scholarships.

In the race to secure scholarships, exposure to college coaches is also vital. Interviewees explained that, historically, recruiting was accomplished through interscholastic circuits, but state-mandated regulations have allowed club sports to surpass high schools in facilitating exposure. Club players can travel to more tournaments across various geographic locations. Nick explained how this flexibility may be beneficial to some players:

We have two players that leave tomorrow morning to fly to Georgia to play in a four-day AAU tournament where they are going to be exposed to a lot of coaches. If they weren’t playing in that tournament, they obviously wouldn’t get that exposure.

In addition to allowing athletes to exhibit their abilities in front of a wider range of coaches, recruiting for some sports may

occur more commonly at club tournaments than high school games. William noted, “When you start doing club volleyball, the travel softball, AAU basketball, they [athletes] realize that’s often where recruiting is done now.” Only two interviewees did not allude to the influence of college athletics in terms of either scholarship attainment or recruiting exposure.

Impact of Specialization on Interscholastic Programs

Participants perceived that early specialization has affected interscholastic programs and athletic departments in two major ways: participation rates and program success. Since these two factors are inextricably linked, they are discussed in tandem.

In some situations, an athlete choosing to pursue only one sport could consequently influence participation numbers of other sports. While there was no consensus among the coaches regarding which sports experienced the greatest increases or decreases in participation numbers, there were general trends. Half of the participants identified basketball, baseball, softball, soccer, and volleyball as sports they believed were prone to early specialization due to the young age at which travel teams start, as well as the rapidly expanding club scene for these sports. Respondents also perceived that specialization is occurring more frequently among girls’ sports as demonstrated by Aaron’s comment, “I think participation numbers are down as a whole. I don’t have any concrete evidence of that, but it just seems like we don’t have as many

girls playing multiple sports or as many girls playing.” Chris discussed how significant changes in participation rates can also affect the number of teams a school can support, “We are seeing it here, but I know it’s worse in area schools by the amount of JV teams that don’t exist.”

Participation numbers play an obvious role in the success of a program. Interscholastic teams that attract more athletes have a larger pool of participants from which to select talent. In turn, more successful programs are more enticing. Many of the basketball coaches suggested their girls’ teams were being adversely impacted by volleyball. Jonathon specifically noted that his teams were losing athletes, “We are losing some athletes to soccer. We are definitely losing size and athleticism to volleyball.” With a highly visible and prestigious club program in the immediate vicinity, some participants speculated this club’s reputation fostered a volleyball-centered culture that encouraged early specialization and drew athletes away from other sports. Katie said:

In a school like ours it hurts. We don’t have very many athletes, and so performance wise there’s obviously a culture here, a volleyball culture, that doesn’t allow kids – or how I interpret it – that doesn’t really allow for kids to be flexible playing other sports. So, it impacts us competitively basketball wise.

At another school, sport administrators were considering ways to accommodate increased interest in volleyball, such as adding a freshman team to the schedule. Meanwhile, the same school’s basketball participation numbers remained steady

but were not high enough to support freshman teams. Early specialization likely has a greater impact on smaller schools whose success is dependent on sharing athletes. Daniel stated:

At the small school level, it's especially bad because we only have so many athletes here, and if kids one way or another decide that they are only going to specialize in one sport, that hurts several other sports. And I have experienced that with volleyball and basketball a couple times.

Although basketball is not exclusively influenced by volleyball, it seems to bear the brunt of the trend in this particular region due to the overlap in seasons and physical characteristics sought by both sports (e.g., height). Furthermore, successful and dominant interscholastic programs are more enticing to athletes as Leslie stated, "If you have a really great program, the athletes are going to go there. And if you don't have a program, the athletes aren't going to go to it." In an area where volleyball is popular and promoted by club circuits, interscholastic volleyball teams are becoming increasingly competitive and desirable. Meanwhile, basketball may struggle to retain athletes or support junior varsity teams, resulting in a competitive decline of programs. Essentially, early sport specialization may facilitate success in one sport while creating challenges for other programs at the same school.

Finally, a few coaches noted that their interscholastic programs are becoming the only outlet for some athletes to par-

ticipate and improve their skills. William discussed this situation, saying:

Now people are going and paying money to get this training when some people can't afford to go to a high-level club. Some of them can't even afford to go to lower-tier clubs, so they are kinda left out as far as getting better.

For families with athletes wishing to specialize, engaging in training beyond the traditional interscholastic seasons may present a financial burden. Unfortunately, not all families can absorb these expenditures. While this might not appear to impact interscholastic programs, coaches are noticing a differences between the skill levels of athletes that participate in additional training opportunities. Leslie stated:

We are in a socioeconomic area enough that kids with the means go do it [club sport], and kids that don't have the means just kinda get left back and try to do the best they can during their high school season and learn from their high school coach. But you can see the difference in skill level, and you know who has played a club sport and who hasn't.

As such, interscholastic coaches may face situations where they cannot keep these athletes on the team or, on the other hand, are the only resource some athletes have for training and improvement.

Discussion

With early sport specialization being a popular trend in youth sport, this

study provided unique perspectives from the viewpoint of interscholastic coaches. To date, most empirical studies on sport specialization are conducted on the athlete experience and perspective, while few studies have focused specifically on coaches. Through semi-structured interviews, this study examined how interscholastic coaches perceive current specialization trends among adolescent athletes and how those trends are subsequently influencing interscholastic athletic programming.

Coaches' definitions of early sport specialization were important to contextualizing their understanding of early specialization. This also provided information on whether practitioners and researchers are conceptualizing early specialization similarly. While there were consistencies across the participant definitions, there was enough variation among participant responses to suggest that categorizing athletes as specialized is still quite subjective for practitioners. This could result from differences in how scholarly articles define early specialization. As research on sport specialization has expanded and gained attention, scholars have acknowledged the need for a more consistent, evidence-based definition and approach to categorizing athlete specialization (Jayanthi et al., 2020). Consensus statements (e.g., LaPrade et al., 2016) and studies developing specialization measures (e.g., Jayanthi et al., 2015) have contributed to standardizing the definition of specialization. However, there are other scholarly works (e.g., Ferguson & Stern, 2014) that use a different

set of constructs to define early specialization. Therefore, inconsistencies in the conceptualization of early specialization may arise among practitioners depending on whether they are drawing on their own experiences, conferring with other practitioners, or utilizing published research to define specialization. Ultimately, these inconsistencies could create challenges for effectively training, coaching, and mentoring athletes. To make the specialization phenomenon more manageable to study, specific characteristics of specialized athletes need to be demarcated, particularly, the age at which the exclusion of all other sports occurs.

Approximately half the coaches felt that athletes should wait to specialize in a single sport until they enter high school. Delaying specialization has been suggested in the literature (Jayanthi et al., 2013; Valovich McLeod et al., 2011). However, an ideal age for specialization has not been agreed upon, although some organizations such as the National Association of Sport and Physical Education have specifically indicated that athletes should diversify their experiences until the age of 15 (Coakley et al., 2010). Sports have also been classified as *early specialization* or *late specialization sports* based on the idea that artistic and acrobatic activities (e.g., gymnastics, diving, figure skating) require sport-specific training at an earlier age since some complex skills cannot be fully mastered if taught after maturation (Balyi & Hamilton, 2010). Differences between early and late specialization sports suggest that the age of specialization should be determined on a sport-specific basis.

One of the most striking findings of this study was that interscholastic coaches were almost exclusively against early sport specialization, but this does not seem to deter athletes from selecting an early specialization pathway. Coaches are a major component of an athlete's social support system; however, these findings suggest that interscholastic coaches may not considerably impact an athlete's decision to specialize. This may be a function of coaches having more impact during later stages of athlete development. Knight (2017) explained that parents are critical to athletes starting a sport as they choose which sports children are exposed to and are responsible for selecting how many athletic endeavors to support. Meanwhile, coaches become more critical in phases where athletes excel in a sport because they drive athlete development and become prominent sources of leadership (Knight, 2017).

Baxter-Jones and Maffulli (2003) purported that belief systems of parents also contribute significantly to children's physical activity participation and found athletes who are highly active in sport have parents with a sport background. Since parents serve as providers, interpreters, and role models during the early stages of their child's sport experiences (Harwood & Knight, 2015), they are likely more critical influences in terms of early specialization comparatively to interscholastic coaches that become involved later in the athlete's career. This same mechanism may also explain why coaches felt strongly that parents were primary sources of social pressure for

athletes.

While the coaches were personally averse to early specialization, they were not necessarily actively opposing the trend. In fact, many of these participants were coaching successful teams comprised of multiple specialized athletes that the coaches admitted were highly skilled players and major contributors to their teams. Winning and competitive pressure are now staples of the sport culture and philosophy (Elendu & Dennis, 2017), and athletes are driven by the perceived importance of achieving athletic distinction and excellence (Coakley, 2015). Thus, coaches must navigate a paradox in that they may believe there are advantages associated with being a multi-sport athlete, but the current sport scene encourages – and possibly advocates for – specializing to be successful. Similar to athletes feeling like they are falling behind if they do not specialize, coaches may contend with feelings of falling behind in terms of competitive success. Therefore, they may contribute to the movement toward early specialization, even if their personal beliefs align with a sport sampling pathway.

Coaches also believed that participation in collegiate athletics and obtaining scholarships are prominent drivers of early sport specialization. Researchers have often cited scholarships as a factor in the decision to specialize in a single sport (Ferguson & Stern, 2014; Hill & Simons, 1989; Malina, 2010), but the coaches pushed this notion further by connecting scholarship and recruitment to the role of club sports in the sport delivery system. In 2010, the NCAA

prohibited colleges from providing written scholarships until August 1st of a prospective athlete's senior year in high school. While this was intended to slow the recruiting process, universities began extending unregulated verbal scholarship offers to high school students considerably earlier (Stanmyre, 2015). These early recruiting practices, combined with technology and social media, have made recruiting an around-the-clock activity. Consequently, athletes are driven to find the most effective means of catching the attention of recruiting coaches. Club sport teams are vehicles for skill development and improvement, but they simultaneously facilitate exposure during the recruitment process. Until recently, finding athletes was accomplished through high schools, but these circuits have limitations. State high school athletic associations can regulate the numbers of games played in a season, opposing competitors, or the distance a team can travel to compete (see NFHS, 2018). Club sports are not restricted by such rules, so players can travel to more tournaments across geographic locations.

Additionally, the availability of large national tournaments helps ease the recruiting burden for collegiate coaches. For instance, in volleyball, the high school season runs concurrently to the college season, so it becomes more convenient for college coaches to recruit outside of their own season. Large club tournaments or showcases also allow recruiters to scout more athletes in a short period of time compared to viewing individual interscholastic matches (Feiner,

2015). Essentially, club sports provide a more expedient method of recruiting for college coaches, and young athletes have noticed this trend.

In terms of early specialization's impact on interscholastic athletic programs, there appear to be positives and negatives. Early specialization can cultivate talent and sport-specific skills due to the high amount of deliberate practice an athlete experiences (Ericsson et al., 1993), increasing the competitiveness of interscholastic programs. However, as participants noted, athletes are drawn to successful programs which can diminish interest and participation in other programs at the same school. The magnitude of this impact seems to vary across programs and may be dependent on a variety of environmental factors related to the interscholastic athletic department.

Scheduling conflicts were, first and foremost, a major factor. In this case, club volleyball runs concurrently to the interscholastic basketball season. Athletes might struggle to compete at a high level in both settings simultaneously due to the practice and traveling expectations associated with each team. As such, while some basketball coaches noted competing with other sports for athletes (e.g., soccer), the availability of a prestigious volleyball club was perceived to draw away more athletes from basketball comparatively to other sports. This also highlights how characteristics (e.g., type of sport, size of the club) and success of the club offerings might dictate which interscholastic sports are impacted as the sport culture of a specific geographic re-

gion can develop around dominant club teams.

School size was another prevalent factor since smaller schools have a limited talent pool and are reliant on sharing athletes among several sports. If several of these typically multi-sport athletes decide to specialize, it may be detrimental to another interscholastic team that cannot absorb the loss in athleticism. Conversely, high schools with larger athlete populations can sustain more single-sport athletes without sacrificing competitiveness among any of the interscholastic teams since multiple sports are not dependent on the same athletes. School location is another important factor as athletes from urban school districts may have easier access to club programs and options for training outside of the interscholastic seasons. Meanwhile, athletes at rural schools might be more limited or have greater logistical challenges to overcome for club participation (e.g., commuting distance).

The mentality and cooperation of coaches in the athletic department is another environmental factor that may contribute to the impact of early specialization on athletic departments. For some states, the interscholastic volleyball championships overlap with the first few weeks of when girls' basketball practices commence for the season (Terlep, 2014). In these cases, it is necessary to have collaborative and understanding relationships among coaches to accommodate athletes that want to play both sports. If coaches are willing to accommodate conflicting practice or workout schedules,

particularly during the off-season, an environment may be facilitated that is more accepting of playing multiple sports. Some interviewees perceived a lack of unity within their athletic departments, making it challenging to share athletes. Thus, athletes might be forced to choose between two sports early in their careers, possibly before determining which sport they prefer. Coaches and athletic directors across various states have observed similar trends and voiced concerns (Athletic Business, 2014a; Erickson, 2018; FitzGerald, 2013).

Lastly, early specialization can create a challenging dynamic for interscholastic coaches as their programs remain one of the only opportunities for students from lower socioeconomic backgrounds to partake in extracurricular activities for minimal costs. Killian (2013) noted that as the youth sport industry expands, parents are willing to invest large sums of money into a child's athletic career, with costs in the thousands of dollars depending on club level and geographic location. For example, in the San Francisco Bay Area, dues for elite soccer clubs can surpass \$4,000 per year – for a sport that is typically associated with lower costs of entry (Killian, 2013). Athletes that cannot compete in club sport offerings are limited to improving via their interscholastic teams and coaches. Depending on roster limitations, interscholastic coaches may be confronted with seeing some adolescents “pushed-out” of interscholastic sports by athletes whose families can finance extra coaching and preparation to develop their sport-specific skills more

quickly. Data compiled by the Massachusetts Interscholastic Athletic Association indicate sports participation in the state's 10 poorest communities is 43% below the statewide average, while sport participation in the 10 wealthiest communities is 32% above average (Patel & Mohl, 2015). While this may not affect overall participation rates or program success, it is an additional challenge that interscholastic coaches may be forced to navigate more frequently if socioeconomic discrepancies continue developing in youth sport.

Overall, findings from this study indicate that young athletes are weighing numerous motivating factors that influence their sport decisions, some of which are extrinsic (e.g., college potential and social pressures), intrinsic (e.g., passion for the sport), and environmental (e.g., availability of the sport). However, all this occurs during formative years when young athletes may be more susceptible to external influences and pressure. In some cases, this may result in athletes opting to pursue a single sport before ever reaching high school, which speaks to the influence of early specialization on interscholastic athletic programs.

Implications

Several practical implications can be ascertained from the findings of this study. First, the discrepancy in how coaches define early specialization suggests that more effective communication pathways need to be established between researchers and coaches, particularly as sport specialization research continues

rapidly advancing. Secondly, targeting parents with information about sport specialization earlier in their child's athletic experience may be a necessity since interscholastic coaches appear minimally influential in the decision to specialize. Instead, coaches and sport administrators at the middle school age and younger might be valuable points of contact for parents that are navigating decisions about sport participation. Perhaps holding informational seminars or meetings through the school system could act as touch points for engaging parents and athletes in discussions about the advantages and disadvantages of both early specialization and early sampling.

Since interscholastic coaches were concerned about athletes' expectations for obtaining a scholarship, they could initiate mentoring meetings with their athletes to discuss motivations for sport participation as well as goals and expectations. These meetings could build upon relationships coaches already have with their athletes and serve as an opportunity to have more challenging conversations, such as the reality that only 7 percent of interscholastic athletes play in college and 2 percent receive a scholarship (NCAA, 2018; 2019). Finally, these findings imply that it is important for interscholastic athletic departments to have a collaborative environment. While it may be assumed this is happening in most departments, it might be necessary for athletic directors to check-in with their coaches individually about whether they perceive a unified environment and discuss strategies to foster this collaboration.

Limitations and Directions for Future Research

This study carried some limitations, primarily that only interscholastic coaches from volleyball and basketball teams were interviewed. Since the study utilized a purposeful sampling method, this design choice was made to explore interactions between these two teams specifically. However, the assumption that a volleyball centric region was primarily influencing basketball could have unnecessarily limited understanding interactions between early specialization, club sports, and interscholastic athletics. A more in-depth analysis could have been achieved with the addition of coaches from other interscholastic teams or possibly athletic directors. However, this also highlights various directions for future research. Early sport specialization is an evolving phenomenon, and interviews should be conducted with other youth sport stakeholders including athletes, coaches, and parents. Specifically, interscholastic coaches represent only one faction of individuals associated with player development and early specialization. Club coaches are another critical component of the athletic experience and would provide important insight and perspectives. Post and colleagues (2020) identified that school and club coaches can display different attitudes toward early specialization, with club coaches less likely to perceive specialization as problematic (Post et al., 2020). Therefore, capturing opinions from individuals that express more support for specialization is also necessary as it could clarify where the influence to specialize early is generated.

In-depth analyses of participation numbers could be conducted to quantify rates of specialization. Certain states require high schools to report participation numbers which indicate how many students are single or multi-sport athletes at each school. Such archival data could generate a more accurate profile of schools and programs being impacted by specialization. Longitudinal studies could be conducted to identify career outcomes for athletes that choose early specialization comparatively to early sampling to determine whether specialization is a requirement for obtaining elite status. Studies investigating career outcomes for children that specialized at different ages also would be useful for establishing an ideal age for specialization in various sports which might help mitigate the possibility of an athlete choosing a sport before they have fully explored their potential options.

Conclusion

Early sport specialization is a continually evolving phenomenon within youth sport that has traditionally been studied within the context of the athlete experience. Since physical, social, and cultural influences directly and indirectly affect individual development (Stokols, 1996), it is important to assess sport specialization from the perspective of stakeholders within the athlete's interpersonal environment. For this study, interscholastic coaches were interviewed to assess how they perceive early specialization and how it may be influencing interscholastic athletic programs.

Generally, coaches expressed opinions against athletes choosing one sport at an early age, but these opinions are not aligned with the continually increasing numbers of specialized athletes, bringing into question how much interscholastic coaches really influence athlete decision-making. Instead, the desire to specialize early may derive from social comparisons and expectations in sport, such as collegiate recruitment and scholarships. At the programmatic level, coaches observed that the early specialization of athletes was impacting participation rates and competitive success and, depending on the sport, this effect could be positive or negative. Nonetheless, coaches were concerned that the availability of training options outside interscholastic programs may create feelings of being left behind and force athletes to decide between sports early in their career. Some coaches were apprehensive that elite athletes may gravitate solely toward their club teams while interscholastic teams become more recreational. While it is unlikely that interscholastic athletics will face outright elimination, coaches insinuated that high school programs may undergo a drastic evolution if youth sport continues progressing along its current trajectory.

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