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Psychology of Sport and Exercise 9 (2008) 645–662

Psychology
OF SPORT AND EXERCISE

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Understanding dropout and prolonged engagement in adolescent competitive sport

Jessica Fraser-Thomas*, Jean Côté, Janice Deakin

School of Kinesiology and Health Science, York University, Norman Bethune College, Room 350, 4700 Keele Street, Toronto, Ont., Canada M3J 1P3

Received 7 August 2006; received in revised form 26 March 2007; accepted 27 August 2007
Available online 2 September 2007

Abstract

Objectives: The purpose of this study is to gain understanding of training patterns and roles of significant others (i.e. coaches, parents, peers, and siblings) in adolescent swimmers' sport participation patterns.
Design: The developmental model of sport participation [Côté, J., Baker, J., & Abernethy, B. (2003). From play to practice: A developmental framework for the acquisition of expertise in team sport. In J. Starkes, & K. A. Ericsson (Eds.), *Recent advances in research on sport expertise* (pp. 89–114). Champaign, IL: Human Kinetics; Côté, J., & Fraser-Thomas, J. (2007). Youth involvement in sport. In P. R. E. Crocker (Ed.), *Introduction to sport psychology*: *A Canadian perspective* (pp. 266–294). Toronto: Pearson Prentice Hall] was used as a framework.
Method: Ten dropout and 10 engaged swimmers, matched on key demographic variables participated in a semi-structured qualitative interview.
Results: Groups had many similar experiences (e.g. early training, supportive and unsupportive coaches, involved parents). However, only dropouts spoke of early peak performances, limited one-on-one coaching, pressuring parents during adolescence, lack of swimming peers during adolescence, and sibling rivalries. In contrast, only engaged athletes spoke of clubs' developmental philosophies, coaches' and parents' open communication, school friends' support, and siblings' general positive influences.

*Corresponding author. School of Kinesiology and Health Science, York University, Norman Bethune College, Rm 350, 4700 Keele Street, Toronto, Ont., Canada M3J 1P3. Tel.: +1 416 736 2100x20952; fax: +1 416 736 5774.
E-mail addresses: jft@yorku.ca (J. Fraser-Thomas), jc46@queensu.ca (J. Côté), deakinj@queensu.ca (J. Deakin).

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doi:10.1016/j.psychsport.2007.08.003

Conclusions: Findings highlight the importance of appropriately structured programs and the fragility of athletes' relationships with significant others during the adolescent years. Implications for sport programmers, coaches, and parents are discussed.
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Keywords: Youth sport; Attrition; Coach; Parents; Peers; Youth development

Introduction

Organized sport plays an important role in the development of today's children and youth. With millions of children worldwide participating in community, school, and privately run sports programs (De Knop et al., 1996), the physical and psychosocial benefits of sport involvement are well recognized (see Fraser-Thomas et al., 2005, for a review). However, as many as two-thirds of participants aged 7–18 withdraw from sport each year, with attrition rates being particularly high during adolescence (Petlichkoff, 1996). Consequentially, sport psychology researchers have identified youth sport dropout as an area of concern (Gould et al., 1982).

Much of the youth sport dropout research has been framed within motivation theories, with most commonly cited reasons for withdrawal including conflicts of interest, and negative experiences such as lack of fun, coach conflicts, and lack of playing time (see Weiss and Williams, 2004 for a review). However, it has been suggested (Lindner et al., 1991) that reasons such as these obtained through questionnaire data are intuitive, superficial, and subjective in nature, and that studies should focus instead on *why* youth have other interests, and *why* youth are no longer having fun. Côté and colleagues' developmental model of sport participation (DMSP: Côté et al., 2003; Côté and Fraser-Thomas, 2007) provides a framework to explore some of the physical (i.e. training patterns) and psychosocial (i.e. role of significant others) factors that may influence youths' sport participation patterns.

Developmental model of sport participation

The DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) emerged from extensive retrospective interviews with athletes in a variety of sports, and proposes that athletes pass through three stages of sport development: the sampling, specializing, and investment years. Athletes participate in a variety of sports during the sampling years (age 6–12), and a decreasing number of sports during the specializing (age 13–15) and investment years (age 16+). Further, athletes engage in large quantities of deliberate play activities during the sampling years (activities that are less structured, designed to maximize inherent enjoyment, and regulated by flexible age-adapted rules; Côté & Hay, 2002) and do not focus on deliberate practice activities until the specializing and investment years (activities that are highly structured, require effort, generate no immediate rewards, and are motivated by the goal of improving performance rather than inherent enjoyment; Ericsson et al., 1993).

The DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) also highlights the roles of significant others (i.e. coaches, parents, peers, and siblings) in assuring healthy and prolonged youth sport participation. Specifically, the model outlines how during the sampling years, coaches

are primarily supportive and encouraging, while during the specializing and investment years, a more reciprocal coach–athlete respect develops, with coaches' styles becoming more skill oriented and technical. Parents' roles initially include introducing their children to sports, enrolling them in diverse activities, and providing them with necessary resources and equipment, but during adolescence, parents become less involved, while providing more financial and emotional support to help their children through challenges and obstacles. Parents generally progress from a leadership role during the sampling years, to a following and supporting role during the specializing and investment years. Peers are very influential during the sampling years, as they are one of the main reasons children participate in sports; however during the specializing and investment years, young athletes benefit from having peers both within and outside of their sport, serving as both role models and supporters. Finally, Côté (1999) suggests that siblings are influential in diversity of ways throughout young athletes' development (i.e. acting as role models, fostering rivalries).

Training patterns and significant other influences

There is considerable support for the training patterns and roles of significant others outlined by the DMSP (Côté et al., 2003, 2007; Côté and Fraser-Thomas, 2007). For example, studies of athletes in tennis, rowing, baseball, hockey, basketball, netball, and triathlon have all provided support for the sampling (i.e. early diversification) approach to expertise (see Côté et al., 2003 for a review). Further, sampling and early diversification have been suggested to foster fundamental skills for lifelong involvement in a diversity of sports, prolonged sport enjoyment, and mixed social opportunities (Côté & Hay, 2002; Kirk, 2005). In contrast, numerous negative outcomes have been associated with early specialization, including injuries, performance anxiety, parent and coach pressure, isolation, a restricted identity, and burnout (see Hecimovich, 2004; Wiersma, 2000 for reviews). Most recently, Wall and Côté's (2007) study of high-level dropout and active (i.e. still involved in their sport) youth hockey players made associations between early specialization and dropout. They found that dropout players started specialized training (i.e. off-ice training) significantly earlier than active players (mean age of 11.75 years versus mean age of 13.8 years) and did significantly more specialized training than active players throughout development.

The coach's role is one of the most explored areas of youth sport research, with numerous studies focusing on the relationship between coaches behaviors and athletes' motivation and enjoyment (see Smoll and Smith, 2002 for a review). For example, Smoll, Smith, and colleagues (Barnett et al., 1992; Smoll et al., 1993) found that coaches trained to increase technical instructional, reinforcement, and mistake contingent reinforcement behaviors were better liked, created a more enjoyable atmosphere, created more team unity and had lower dropout rates than untrained coaches. Similarly, Black and Weiss' (1992) study of competitive swimming coaches found that those who provided information about performance, coupled with praise or encouragement depending on the outcome of the performance had athletes who experienced more enjoyment and had a greater preference for challenge. One more recent study of persistent and dropout adolescent swimmers (Pelletier et al., 2001) found that those who persisted in swimming perceived their coaches as more autonomy-supportive, while those who withdrew perceived their coaches as more controlling.

Generally, high perceived amounts of parent support, encouragement, involvement, and satisfaction have been associated with more enjoyment, intrinsic motivation, and preference for challenge (e.g. Scanlan and Lewthwaite, 1986). Gould et al. (2006) recently examined the role of parents in American junior tennis players' success. Coaches' believed 59% of parents contributed to the success of their children, but 36% hurt the development of their children, primarily by overemphasizing winning, holding unrealistic expectations, criticizing their children, and pushing their children to play. Given the methodological challenges of assessing negative parent behaviors, no studies have examined relationships between such parent behaviors and athlete dropout; however, studies of junior tennis players highlight parent pressure in the form of criticism, high expectations, abusive actions from the sidelines, rewarding participation, and adopting coaching roles as influences in burnt out athletes (Gould et al., 1996; Harlick and McKenzie, 2000).

Finally, the DMSP highlights the role of peers and siblings in influencing youths' sport participation patterns. Despite limited empirical research in the field, Smith (2003) suggests that peer relationships play an important role in physical activity contexts, as peers have been linked to youths' sense of physical competence, their moral attitudes and behaviors, and their affective outcomes through sport. Weiss et al. (1996) explored the positive and negative dimensions of friendships in youth sport contexts. One could speculate that positive dimensions (e.g. companionship, self-esteem enhancement, help and guidance, prosocial behavior, intimacy, loyalty) could foster participation motivation, while negative dimensions (e.g. conflict, unattractive personal qualities, betrayal, inaccessibility) could contribute to youths' reasons for withdrawal. Only a handful of studies have examined sibling influences in sport. Regression analyses to determine the influence of siblings in comparison to significant others (i.e. parents, peers, and coaches) resulted in mixed findings (e.g. Weiss and Knoppers, 1982).

Purpose

Given that past youth sport literature highlights primarily superficial reasons for dropout, many researchers (e.g. Lindner et al., 1991; Weiss and Petlichkoff, 1989; Weiss and Williams, 2004) have emphasized the importance of conducting longitudinal and qualitative research to understand how physical and psychosocial factors interact to influence youths' dropout decisions. Using the DMSP as a framework, the purpose of this study was to gain understanding of the training patterns and the roles of significant others' (i.e. coaches, parents, peers, and siblings) in adolescent swimmers' sport participation patterns. While past research has examined training and significant other influences in youth sport settings, little research has explored athletes' perceptions of these patterns and influences, and the subsequent role they may play in adolescents' sport participation patterns.

Method

Participants

This study's focus was on dropout by highly invested adolescent athletes rather than withdrawal by sport samplers or transfers (Weiss and Petlichkoff, 1989). As such, competitive

swimmers provided an appropriate sample. Participants were screened based on three criteria: (a) aged 13–18 (the specializing and investment years of the DMSP), (b) enrolled in competitive swimming for a minimum of four years, and (c) involved in a minimum of 10 hours of training per week. Additional criteria for dropouts included withdrawal between the ages of 14 and 17, within the past three years. These cut offs were set to eliminate younger sport samplers and transfers, to eliminate older athletes who's withdrawal may have been a natural transition at the end of high school, and to maintain consistency in the time period at which participants were involved in swimming. Additional criteria for engaged swimmers included involvement or intended involvement in competitive swimming until at least the end of high school.

Participants included 10 dropout and 10 engaged swimmers, recruited through head coaches and administrators of various clubs in Ontario and Nova Scotia, Canada. Groups were closely matched on all demographic variables including age, gender, years of experience, ability, family structure, and parent education. Mean participant age was 16.4 (SD = 2.6) for dropouts and 18.3 (SD = 4.1) for engaged athletes. More females ($N = 8$ dropout and $N = 7$ engaged athletes) participated in the study than males; however, this imbalance is representative of age group swimming in Canada (Swim Ontario, 2005). Athletes had 4–13 years of competitive swimming experience, with a mean of 6.9 (SD = 2.5) years for dropouts and 7.4 (SD = 3.0) years for engaged athletes. At the time of their withdrawal, dropout athletes competed at regional ($N = 4$) and provincial/national ($N = 6$) levels; in their most recent year of involvement, engaged athletes also competed at regional ($N = 2$) and provincial/national ($N = 8$) levels. Athletes came primarily from traditional families ($N = 8$ dropout and $N = 10$ engaged athletes); the remaining two dropout athletes came from mixed families. Athletes also tended to come from larger families, with a mean of 2.6 (SD = 1.2) children per family among dropout athletes and 2.7 (SD = 0.9) children per family among engaged athletes. Athletes' parents were well educated with most ($N = 18$ dropout athletes' parents and $N = 16$ engaged athletes' parents) having completed university or community college.

Data collection

Ethical approval for the research project was granted by the affiliated university. All interviews were conducted at participants' homes by the primary researcher after athletes and parents read information on the nature of the study and completed consent forms. The qualitative interview aimed to gain in-depth understanding of participants' swimming involvement so as to paint a full picture of athletes' development; a procedure similar to Wright and Côté's (2003) was used. For each developmental stage of swimming involvement, athletes were questioned in five areas: (a) training patterns, (b) parent influences, (c) coach influences, (d) peer influences, and (e) sibling influences. Main questions were open-ended, allowing athletes to use their own words to describe their swimming involvement and the role of significant others in that involvement; however, probing and follow-up questions were consistently used to encourage athletes to expand upon their statements such as, "Can you provide an example of a typical behavior by your coach in that situation?" (Rubin and Rubin, 1995). In sum, the interview allowed athletes to focus on their previously identified experiences, and make meaning and provide understanding of those experiences (Seidman, 1991). Interviews lasted 1–2 hours. Athletes were provided with a small monetary award as a token of appreciation for their time.

Data analysis

All interviews were digitally recorded and transcribed verbatim, resulting in 523 pages of transcripts (12-point font, single-spaced). Data were analyzed following previously established guidelines (Côté et al., 1993; Tesch, 1990). Specifically, data were divided into meaning units which fell within five categories (the five general lines of questioning). Researchers used interpretational analysis techniques to identify themes imbedded in the unstructured data, and grouped meaning units into these themes. Two members of the research team were involved in the analysis process. Independent analyses were followed by collaborative discussions and minor refinements to coding and theme categorizing procedures.

The trustworthiness of the data was assured through a variety of means. Participants were asked to review their transcripts for verification, and given the opportunity to add, delete, or rework any data that they felt did not accurately reflect their intended communications (Miles and Huberman, 1994). The collaborative approach used by the two members of the research team involved in the interpretational analysis further contributed to the trustworthiness of the data. Finally, the consistency of meaning unit classification was verified in a random sample of 15% of meaning units. An independent researcher familiar with qualitative research analysis categorized units into themes and categories provided; he demonstrating high agreement with primary researchers (75 out of 89 meaning units; 84%) suggesting meaning units were accurately represented by themes and categories. Discrepancies were overcome through further discussions and minor refinements.

Results

In total, 613 meaning units were drawn out of the transcripts: 114 meaning units related to training patterns, 193 to coach influences, 159 to parent influences, 104 to peer influences, and 43 to sibling influences. Within each of these five categories, various themes were interpreted and grouped according to those that were common among dropout and engaged athletes, those that were expressed only by dropout athletes, and those that were expressed only by engaged athletes. Themes unique to the dropout and engaged athlete groups are outlined in Table 1. Because of the small number of male participants in the study ($N = 2$ dropout and $N = 3$ engaged athletes), separate analyses by gender were not conducted.

Understanding training patterns throughout development

Dropout and engaged: early play and practice experiences. Both groups spoke of play opportunities during their early swimming years. In particular, practices included games, relays, and other team-building activities. ‘‘I just remember there would always be a general warm-up, and there were always games. If it wasn’t within the workout, we’d play something at the end’’ (Engaged Athlete 4; E4). Both groups were also introduced to intensive sport specific training early in their careers. They suggested that practices were usually comprised of repetitive drills and lots of lengths. Further, many were labeled by their coaches as ‘‘sprinters’’, ‘‘distance swimmers’’,

Table 1
Training patterns and significant other influences: themes unique to dropout and engaged athlete groups

Dropout athletes	#	Engaged athletes	#
Training patterns		*Training patterns*	
Early peak performances	3	Club developmental approach	5
No opportunity for other activities	3	Opportunity for other activities	5
Difficult transition to being the youngest in group	2	Healthy transition to being the youngest in group	7
Coach influence		*Coach influence*	
Coaches ignored weaker swimmers	6	Subtle coach favoritism	2
Limited one-on-one coaching	4	One-on-one coaching for everyone	5
		Balanced coach personalities	3
		Open communication about withdrawal	3
Parent influence		*Parent influence*	
Parents provide coaching and offer rewards	7	Parents do not always follow swimming	4
Parents pressure to swim when considering dropout	4	Parents provide options when considering dropout	3
Pressure to be like parent athletes	2	Balanced parent personalities	6
Pressure because parents did not have opportunities	3		
Peer influence		*Peer influence*	
Lack of swimming peer group in later years	3	School friends a positive influence in later years	5
Sibling influence		*Sibling influence*	
Rivalries with siblings	3	General positive influence of siblings	5

or "stroke specialists" in the first year of their involvement, and began specialized training in their area of expertise.

Dropout: *early peak performances*. Only dropout athletes discussed their success at a very young age, and how it affected their focus, commitment, and investment in swimming.

> I sort of improved a whole lot that year [age 8]. I kept winning things and beating people. It just sort of opened my eyes to where I could really go with swimming. Before that it was cool if you beat somebody, but it wasn't really in your biggest dreams to be this Olympic swimmer. I sort of realized I had a talent for it a little bit, and that I could improve more. So it sort of made me more interested. More than just for fun. For competition. More focused. (Dropout Athlete 1; D1)

Engaged: *developmental approach*. Only engaged participants spoke about their club having a "developmental" philosophy. Athletes suggested this approach included delayed specialization (i.e. fewer practices during childhood, a greater focus on technique and drills, and delayed dry land training and training camps) and a focus on personal development (i.e. developing life skills such as leadership). One swimmer outlined, "[Coach] has a unique philosophy. That quality is better than quantity. He was pretty set we didn't need to swim 10 times a week to be good. We just needed to give 100% every time we were in the water" (E4).

Dropout: *no opportunity for other activities*. While both groups of athletes discussed the large time commitment required to swim competitively and how this created challenges for involvement

in other activities, only dropouts consistently saw this as an "either/or" situation, requiring them to make a choice between activities.

> When I was 8 I had to make the decision. It all came down to what I wanted to do more. I was getting to the point where they were interfering and I didn't have time to do both. I just felt that I wanted to swim more and that I would excel farther in swimming than in dance. So I just had to choose. (D3)

Engaged: *opportunity for other activities*. In contrast, engaged athletes found ways to be involved in activities besides swimming. One athlete outlined, "It's just about managing time. There's time for everything, you just have to manage it and I'm a very organized person and I know what I can fit in and I just fit everything in" (E7).

Dropout: *difficult transition to being the youngest in the group*. While both dropout and engaged athletes were the youngest in their group at some point, there sometimes seemed to be different circumstances surrounding the "move up" for each group of athletes. Only dropout athletes spoke of moving up before they were ready:

> You were supposed to be like 11 or 12 when you moved up. We were 10. There were only a few of us, but they had no more room in Novice, so we had to move up. We were the faster ones, so we got the boot. It might have been too soon. Like it might have caused some burnout. (D3)

Engaged: *healthy transition to being the youngest in the group*. In contrast, engaged athletes spoke of how their coaches facilitated the transition into the next group by discussing it with them, easing them into additional practices, and involving them in the decision process.

> I remember [Coach] asking me if I wanted to move up. We actually talked about the age barrier. I would be the only one in junior high. Everybody else would be older. He said it was up to me. I didn't have to. I could have not gone for it. (E1)

Understanding coach influence throughout development

Dropout and engaged: *supportive and less supportive coaches*. Both groups of athletes spoke of the supportive coaches they had appreciated through their careers: coaches who demonstrated belief, passion, encouragement, and acted as motivators.

> I liked how you could always see his expressions at swim meets. If somebody had a really good swim, he would go crazy and just light up. He would go mad. He really cared about us. He had a lot of heart in it and we saw that. (E1)

However, both groups also had less supportive coaches throughout their careers. Athletes spoke of coaches who were highly critical, intimidating, mean, and scary. One swimmer remembers, "Once I had a cramp in my lung and I couldn't breath, and he was just like, 'Swim it off!' That's kind of harsh for a 10 year old" (D9).

Dropout and engaged: *good and poor communication skills*. Both groups spoke of coaches who were excellent communicators. They praised them for their listening skills, genuine interest in each individual, democratic and interactive nature, and ability to share expertise and clearly communicate constructive feedback. However, both groups also spoke of coaches with very

poor communication skills: coaches who demonstrated autocratic or authoritarian styles, had short tempers, and could not relate to or communicate with adolescents. One swimmer stated, "I think that was another problem with [Coach]. He was so used to coaching university swimmers, he didn't know how to talk to a 14-year old girl. He couldn't relate" (E2).

Dropout: *coaches ignored weaker swimmers*. Individuals in both groups recognized that coaches demonstrated some favoritism, but suggested that this was human nature. Only dropouts spoke of how coaches blatantly ignored weaker swimmers in favor of top swimmers, making no effort to initiate communication with them.

> The thing that bothered me most was the favoritism that existed. Sometimes you'd come out of doing an event and you'd feel really good about yourself cause it was a best time or something, and you'd come back to where your team was sitting and your coach wouldn't acknowledge you. You'd be really excited and come back for a pat on the back and a "Good job!", and it just wasn't there. It was kind of depressing. (D7)

Engaged: *subtle coach favoritism*. In contrast, engaged swimmers suggested that coaches' favoritism was more subtle, and was not necessarily only among the top swimmers:

> There were a couple of the top athletes, like the fastest of the fastest, and they were his favorites because they were the fastest of the fastest. But then there were his favorites who were his favorites because of like personality and they worked hard – just well roundedness. Not cause they were the fastest. (E9)

Dropout: *limited one-on-one coaching*. Both groups recognized the challenges that coaches encountered in trying to work with each individual athlete in the larger group; however, only dropout athletes spoke of receiving little or no one-on-one individual coaching. "It was a pretty big swim team, so the coach couldn't really do individual support and stuff like that" (D6).

Engaged: one-on-one coaching for everyone. In contrast, engaged swimmers' coaches coordinated practices to provide one-on-one coaching to everyone.

> Usually he'll just take turns pulling people out and talking to them or using the end lane to work on their stroke. Then he kicks them back into practice and takes someone else out. If he sees we need it, then we get it. We have two coaches. One to help run the practice while the main coach works one-on-one. (E5)

Engaged: *balanced coach personalities*. Only engaged athletes spoke of having two different coaches at the same time, and how these two coaches' personalities provided balance.

> So [Coach A] was the stats coach and if he would tell you something once, he expected you to know it and he expected you to do it. Whereas [Coach B] was the happy, good-feeling coach, where she made everyone feel good about themselves. So together they were a great team. (E7)

Engaged: *open communication about withdrawal*. Despite their persistence, many engaged athletes spoke about considering withdrawal from swimming at some point in their careers. They suggested that the way in which their coach had communicated openly with them through this difficult time and tried to meet their individual needs was part of what kept them involved. No dropout athletes recounted similar coach communications when they were contemplating withdrawal.

> A lot of the times when I was having trouble – like if I was getting really tired from everything, and I couldn't swim anymore – he'd pull me aside and say, "Okay, what do you need? This Saturday morning off to sleep in and get a long weekend?" So he'd be really good at negotiating and making it work so that I could rest up and keep going. (E5)

Understanding parent influence throughout development

Dropout and engaged: *parents provide unstructured play opportunities*. Both dropout and engaged athletes spoke of the extensive unstructured swimming opportunities their parents provided for them as children. Participants spoke most often of cottages, backyard pools, beaches, and public swims.

> My parents used to let me swim across our lake and my dad was great. He is the most patient person in the world. It didn't matter if it took me two hours to swim the lake. He would paddle the canoe beside me. If I wanted to do it, then he would do it with me. (E7)

Dropout and engaged: *parents demonstrate supportive behaviors*. Both groups described how their parents supported their swimming involvement through numerous indirect means, such as becoming involved in club fundraising events, working swim meets, driving to practices and meets, and providing support at home.

> They were really active in the club. My dad did fundraising. He was head of fundraising at one point. He got his official training. My mom was always helping out when we were hosting the meet. She'd be working at the computer entering in people's times. (D7)

Dropout: *parents provide coaching at practices and meets, and offer rewards for performances*. Only dropout athletes spoke of how their parents provided coaching tips at practices and meets. They also described how their parents sometimes offered them financial rewards or incentives for good performances. One swimmer outlined, "My dad recorded all my swims. I still have all the tapes. Sometimes he would give me feedback. Like, 'Well, you could have done this faster. Why are you breathing every stroke?'" (D5)

Engaged: *parents do not follow swimming but always unconditionally supportive*. In contrast, the parents of engaged athletes did not always come to meets and did not always know a lot about the sport, but they would always be pleased for their children. One swimmer outlined, "They knew that I loved it, but they didn't really have a clue about how I was doing. They just knew that I was having a good time. But they were always really supportive" (E9).

Dropout: *parents pressure to keep swimming when considering dropping out*. Both dropout and engaged athletes had considered withdrawing from competitive swimming at some time in their careers; however, only parents of dropout athletes put pressure on athletes to continue swimming, by insisting that they go to practice.

> I was starting to lose interest, and she was sort of fed up with me backing off swimming after so many years in it. I was sort of wanting to go back and forth, and she was like, "No. Swimming. Swimming. Swimming." So it sort of drove me away even more. (D1)

Engaged: *parents provide options when considering dropping out*. In contrast, parents of engaged athletes discussed the dropout issue with their children, provided them with some flexible options, but still encouraged them to continue pursuing their sport.

> When I said, "No, I'm not swimming anymore," they said, "Well, okay, we understand you don't want to swim anymore, but do you want to stay on in Seniors and swim once a week so that you're still in the pool and you're still with the club but aren't really swimming full time?" They helped me stay in during that rough time, just at a level that I was comfortable with. (E5)

Dropout: *pressure to be like parent athletes*. Numerous dropout athletes spoke about the pressure they felt to be high performing athletes like their parents. While they were quick to acknowledge that it was not their parents' behaviors per se that led them to feel this way, they nonetheless felt pressure to attain these high levels.

> My dad was a really good swimmer – like national level. I always kinda felt that I should be able to do what he did, but I never could and never did. He never asked me why I couldn't. It was more in my head than anything. I just thought that I should be able to be as good as him. (D2)

Dropout: *pressure because parents did not have opportunities*. Some dropout athletes also spoke of the pressure they felt to do well for their parents, because their parents had never had the opportunities to participate and compete in sports. One swimmer outlined, "When I got older, they wanted me to go all the way. They wanted me to have something, you know, cause when they were younger, they didn't have the chance to do that. So they wanted it for me" (D4).

Engaged: *balanced parent personalities*. Only engaged athletes spoke of how parents' significantly different and opposing personalities were a positive influence on their swimming involvement by providing a balanced approach to their swimming.

> My dad is proud of my swimming, but he doesn't know what's going on. He'll come to a meet and be like, "Oh, that's great! You beat that guy!" But my mom's the swimmer. She actually knows what's going on. She follows it. (E5)

Understanding peer influence throughout development

Dropout and engaged: *swimming friends a positive influence*. Both dropout and engaged athletes spoke of the supportive environment they experienced among their swimming peers. They spoke of sharing common goals, being motivated, being positively influenced by role models, and generally feeling a sense of family within their group. "Everyone was really supportive about getting 'A' times. We were all working towards the exact same thing" (D1).

Dropout and engaged: *rivalries with swimming friends*. Occasionally, individuals also spoke of rivalries and competitions that existed within their peer group: "Sometimes there was a little jealousy. Like 'I went 2:30 and you did 2:40…Ha, ha…' But then they'd be like, 'Well I'm a better butterflyer'" (D5).

Dropout and engaged: *school friends a negative influence*. Both groups spoke of how their school friends often pressured them to go to parties, sleepovers, or other social events, and did not

understand the commitment required in swimming. "If there was a party or something, they'd be like, 'You don't have to go to practice'" (D1).

Dropout: *lack of swimming peer group in later years*. In their later years of involvement, only dropout athletes spoke of not having any swimming friends left in their group, and how this negatively impacted their motivation for swimming.

> So when I was in grade 12 most of my peer group were in grade 13. Some were even older. So most of my peer group at that point, were gone. And I was kind of the lone ranger left. And I'm a pretty social guy, so I didn't see the need to stay anymore. (E8)

Engaged: *school friends a positive influence in later years*. Only engaged athletes spoke of how later in development, their school friends came to respect their commitment to swimming, and be proud, supportive, and encouraging of their accomplishments. "They really admired what I was doing. Like all the determination that I had" (E1).

Understanding sibling influence throughout development

Dropout: *rivalries with siblings*. Only dropout athletes spoke of the rivalries and competitions that existed between them and their sibling(s). Sometimes this involved a silent jealousy, while other times it involved very blatant challenges or negativity. One athlete outlined, "My parents loved when he did good. So I felt like I needed to do good too. So it sort of made me a little bit mad sometimes" (D1).

Engaged: *general positive influence of siblings*. Only engaged athletes spoke of a general positive influence that their sibling(s) had on them. Sometimes, they could not pinpoint exactly what it was about their siblings that had positively influenced them—often it was their mere presence and simultaneous involvement in swimming.

> More than anything it was just "That's what they do. That's what I do." I didn't choose to go into swimming when I was 5. I just kind of did what everyone else in the family did. They went to the pool and worked hard – that's what I did. They went to swim meets and tried their best – that's what I did. (E9)

Discussion

The purpose of this study is to gain understanding of the training patterns and the roles of significant others (i.e. coaches, parents, peers, and siblings) in adolescent swimmers' sport participation patterns using the DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) as a framework. Specifically, the study aimed to capture athletes' perceptions of training patterns and significant others' influences, and examine the subsequent role these factors may have played in their sport participation.

Understanding training patterns throughout development

Consistent with the DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) both dropout and engaged athletes highlighted deliberate play (e.g. games, relays) as a component of their swim

practices during their early years of involvement. Given this type involvement is considered critical to young athletes' long-term motivation and enjoyment of sport (Côté & Hay, 2002; Kirk, 2005) both groups appear to have had a healthy start in their swimming careers. Interestingly, participants in both groups also spoke of being exposed to deliberate practice (i.e. more intense sport specific training such as drills and repetitions) from a very young age, suggesting that this form of training may be innate within the structure of competitive swimming. While early involvement in deliberate practice has been associated with expert performance among some athletes (e.g. Ward et al., 2004), it has also been linked to dropout (e.g. Wall and Côté, 2007).

Individuals' receptiveness to early deliberate practice training was likely dependent on numerous individual factors such as commitment, determination, and social maturity (Scanlan et al., 1993; Ward et al., 2004); however, training-related findings of this study may also help to explain why some athletes responded more positively to this training trajectory than others. For example, clubs' developmental approaches, which involved limiting training volume, delaying dry land training and training camps, and promoting the development of life skills, may have provided less rigorous and more age-appropriate styles of deliberate practice. Further, athletes' participation in other activities outside of swimming, likely facilitated by the decreased training volume of developmental approaches, may have contributed to adolescents' continued motivation to swim, given past literature highlighting time conflicts and other interest as common reasons for withdrawal (Weiss and Williams, 2004). While coaches often convince their athletes that year-round commitment is necessary for success in their sport (Hecimovich, 2004), delayed dry land training and training camps may have led to fewer physical and psychosocial costs, given the risks associated with early specialization (Hecimovich, 2004; Wiersma, 2000). Finally, the teaching of life-skill (e.g. organization, time management, and coping strategies) may have also facilitated athletes' capability to be involved in other activities outside swimming.

Differences in early performances provide another possible explanation for variations in athletes' receptiveness to early deliberate practice. Only dropout athletes spoke of their success at a very young age, and how it positively affected their focus, commitment, and investment in swimming. While this path likely led to continued good results in the short term, one could speculate that as young children, these individuals may not have been capable of handling the pressure that accompanied their athletic success (Wiersma, 2000). Further, these individuals may have struggled with a restricted identity when they encountered obstacles such as performance plateaus as adolescents (Brewer et al., 1993).

Finally, young athletes' group placement may have influenced their receptiveness to early deliberate practice training. While both groups of athletes spoke of being the youngest in their group at some point during their swimming involvement, dropouts spoke of being pressured to move up before they were necessarily ready, while engaged athletes spoke of how their coaches facilitated the transition for them. Past literature is mixed on the benefits and risks of "playing up" or "training up". For example, Wright and Côté (2003) found that competing and playing with more skilled athletes was associated with leadership development among varsity team sport players, but Gould et al. (1996) found that playing up to a higher age division was associated with burnout among junior tennis players. The present study suggests that the timing and coach communication involved in the moving up process are important factors in determining whether outcomes are positive.

Understanding coach influence throughout development

Consistent with the DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007), both dropout and engaged athletes spoke of having caring and supportive coaches with excellent people skills and technical expertise throughout development. However, both groups also spoke of having less supportive coaches with poor communication skills at times throughout development. This is somewhat surprising, given that negative coach behaviors have consistently been associated with negative youth sport outcomes including dropout (e.g. Barnett et al., 1992). It appears that one factor that may have lessened the detrimental effects of these negative coach behaviors was having a team of two coaches with very different personalities. Engaged athletes suggested that two diverse coaches created an element of balance in their coaching; this finding is consistent with past talent development research which highlights the importance of both challenge and support in facilitating motivation and perseverance (Csikszentmihalyi et al., 1993). The DMSP also suggests the importance of reciprocal coach–athlete respect during the adolescent years. While engaged athletes often experienced this type of relationship (e.g. their coaches communicated openly with them about their dropout considerations), no dropout athletes recounted similar experiences. Consistent with past literature, findings highlight the importance of a democratic coaching style and mature coach–athlete conversations during adolescence (Pelletier et al., 2001; Wright and Côté, 2003).

Finally, clear differences relating to coach favoritism and one-on-one attention were noted between groups. Dropouts spoke of coaches ignoring weaker swimmers in favor of top swimmers, while engaged swimmers recognized that subtle favoritism did exist, but everyone still received individualized attention. As past studies highlight, children and adolescents seek certain coach behaviors (e.g. technical information, constructive feedback, praise, and general instruction; Barnett et al., 1992; Black and Weiss, 1992; Smoll et al., 1993), but these behaviors are not consistently demonstrated by all youth sport coaches (Trudel et al., 1996). However, the self-fulfilling prophecy phenomenon (Horn et al., 2001) offers another possible explanation for differences between groups. Specifically, given that the study focused on athletes' perceptions of coaches' influences rather than the measurement of concrete coach behaviors, coaches' expectations may have affected their coaching behaviors, which in turn may have affected athletes' performances and behaviors, and consequentially athletes' performances and behaviors may have conformed to the coaches' expectations.

Understanding parent influence throughout development

Consistent with the DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) parents of dropout and engaged athletes played a very active role in their children's early sport participation by providing them with early unstructured swimming opportunities, and by providing them with the human, material, and financial resources they required (e.g. volunteering for the club, providing transportation, purchasing equipment). However, the DMSP also suggests that during adolescence, parents become less involved, and provide more emotional support to help their children through challenges and obstacles. These behaviors were not always demonstrated by the parents of both groups. Specifically, during adolescence parents of dropout athletes continued to provide coaching tips when watching practices and meets, and to provide incentives for good

performances, in addition to putting considerable pressure on their child to continue swimming when considering withdrawal. While dropouts' parents were likely well intentioned, adolescents may have interpreted these behaviors as controlling and restricting (Coakley, 1992), as behaviors such as these have been found to hurt the development of child athletes (Gould et al., 2006, 1996; Harlick and McKenzie, 2000).

In contrast, parents of engaged athletes demonstrated a more balanced approach to their child's swimming during adolescence. For example, at least one parent would often know little about the sport, rarely come to swim meets, and always demonstrate unconditional support for their child's swimming efforts. Further, parents of engaged athletes communicated openly with their child about the difficult dropout decision, by considering their child's dilemma and providing options. Consistent with the DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) these behaviors highlight how parents of engaged athletes played less of a leadership role, and more of a following and supporting role during adolescence. Findings are also consistent with other past studies; for example, parents of elite tennis players placed less pressure on their children, and had lower expectations of their children than parents of non-elite tennis players (Carlson, 1988).

Interestingly, dropout athletes spoke of two additional but very opposing sources of parent pressure during adolescence: (a) a pressure to stay involved because their parents had not had similar opportunities in their youth, and (b) a pressure to swim and perform well because their parents had been high-level athletes themselves. Hecimovich (2004) suggests that parents' lack of opportunities may lead them to "over" provide for their children (e.g. additional training camps, private coaching). Further, while most studies suggest a positive relationship between parent and child physical activity levels (Sallis et al., 2000), the relationship appears more complex in sport settings. Although most athletes recognized that the pressure they perceived was self-inflicted, it likely still contributed to anxiety, decreased enjoyment and motivation, and possible burnout (Gould et al., 1996; Scanlan and Lewthwaite, 1986).

Understanding peer and sibling influence throughout development

The DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007) suggests that peers are very influential in children's sport participation patterns, and highlights the importance of adolescents having peers both within and outside their sport. While both groups of athletes spoke of the supportive peer network that surrounded them in their swimming environment during childhood, many dropouts struggled with not having a close peer group at swimming during adolescence. Patrick et al. (1999) suggest that when individuals' sport involvement is in conflict with their social development, their commitment to and motivation for their sport decreases. Further, while both groups of athletes discussed how they felt pressure from their school friends to attend parties, sleepovers, and other social events, only engaged athletes spoke of how their friends became supportive and encouraging in their later years of involvement, a finding consistent with other studies that suggest friends outside one's sport can act as supporters and confidence builders (e.g. Gould et al., 2002).

Finally, siblings' roles in swimmers' development differed between dropout and engaged athletes. While dropouts spoke of competition, rivalry, and jealousy, engaged athletes spoke of a general positive influences from their siblings, usually in the form of role modeling. Research examining sibling influence remains limited, but Côté's (1999) study of junior elite athletes

suggests siblings can act as role models (e.g. strong work ethic) and rivals. Further exploration of sibling influences is warranted with a particular focus on gender, age, and sport differences.

Practical implications

The findings of this study significantly extend our understanding of training and significant other influences in adolescent sport participation patterns. As such, findings offer considerable implications for practitioners. For example, the study highlights the importance of carefully structured youth sport programs that focus on the physically and psychosocially developing individual rather than simply on the performing athlete. While many sport programs are currently moving toward institutionalization, elitism, and early specialization (De Knop et al., 1996), findings of this study support a more developmental approach consistent with Côté and colleagues' DMSP (Côté et al., 2003; Côté and Fraser-Thomas, 2007). Sport programmers should clearly define their program's philosophy, communicate this philosophy to athletes, parents and coaches, and facilitate effective coach and parent education consistent with this philosophy. For example, athletes should be encouraged to participate in a diversity of sporting and other activities during childhood, and be given opportunities to continue involvement in a few activities during adolescence. Wiersma (2000) suggests that sport organizations may soon need to restrict hours of training based on age, to facilitate children's overall healthy development. One creative way of supporting other activity involvement was demonstrated by coaches in a recent study of high level adolescent track and field athletes, where coaches logged all athletes' sport involvement, rather than simply tracking attendance for their track and field practices (MacPhail and Kirk, 2006).

This study also highlights the critical influence of significant others during the adolescent years, and the fragility of athletes' relationships with these individuals. In particular, the findings of this study underline the importance of parents, coaches, and peers' changing roles during adolescence. While dropout and engaged athletes recounted similar significant other influences during childhood, differences began to emerge during adolescence as athletes faced new challenges and obstacles. This study highlighted the importance of open communication with parents and coaches, leading to healthy reciprocal relationships. As Horn et al. (2001) suggest, coaches must make an effort to interact frequently with all their athletes and to solicit information concerning their athletes' perceptions, opinions, and attitudes regarding their sport involvement. Further, findings emphasize the importance of parents "backing-off" in their practice and performance involvement as their child moves into adolescence. De Knop et al. (1994) suggest that while it is natural for parents to have expectations for their children, these expectations should not be too high or inflexible, and should be for the purpose of achieving goals set by the children. Coaches and parents should also be aware of and help facilitate healthy social networks for adolescents, given that peers play an increasingly important role as children move into adolescence. This study highlights how having a solid group of swimming friends, and a supporting group of school peers, rather than simply a group which provides social distractions, appears critical for continued sport involvement during adolescence. If sport programmers, coaches, and parents begin to consider some of the implications of this study, we may begin to see youths having more positive sport experiences throughout development, and staying involved in sport throughout their adolescent years.

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