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The impact of competitive youth athlete injury on parents: a narrative review

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ABSTRACT

Athletic injuries are common in youth sports, and much research has focused on the injury experience of athletes. However, less attention has been given to the impact of adolescent injury on relevant others within athletes' recovery orbit, particularly parents. This narrative review examines the impact of adolescent injury on parents using the Multilevel Model of Sport Injury (MMSI). Results revealed that parents' experience of their adolescent's injury is influenced by intra- and interpersonal factors (e.g., thoughts, emotions, behaviors, and interactions with coaches, and sport medicine providers), as well as institutional, cultural, and policy-level factors (e.g., lack of organizational support, internalization of sport norms about playing with pain, and sport injury policies and guidelines). The review provides a more nuanced understanding of the factors and interactions that parents have following adolescent sport injury. Further research using the MMSI can extend current conceptualization and theorizing regarding parents' experiences following adolescent injury.

ARTICLE HISTORY

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Introduction

Sport injuries are ubiquitous among adolescent athletes (ages 12–18) across many sports and include a variety of injury types and severities (musculoskeletal, concussion, acute, chronic; Caine, Maffulli, and Caine 2008; Podlog et al. 2012; Teel, Caron, and Gagnon 2022a, 2022b; Weiss 2003). While a variety of factors may be implicated in adolescent injury, it is evident that increased sport specialization, year-round training, and a high volume of training hours are likely important contributors (Haraldsdottir and Watson 2021). Once injured, adolescents commonly experience a range of profound psychological and social implications (Hallquist, Fitzgerald, and Alricsson 2016; Haraldsdottir and Watson 2021; Podlog et al. 2012; Tripp et al. 2003; Udry, Shelbourne, and Gray 2003). For instance, youth athletes have

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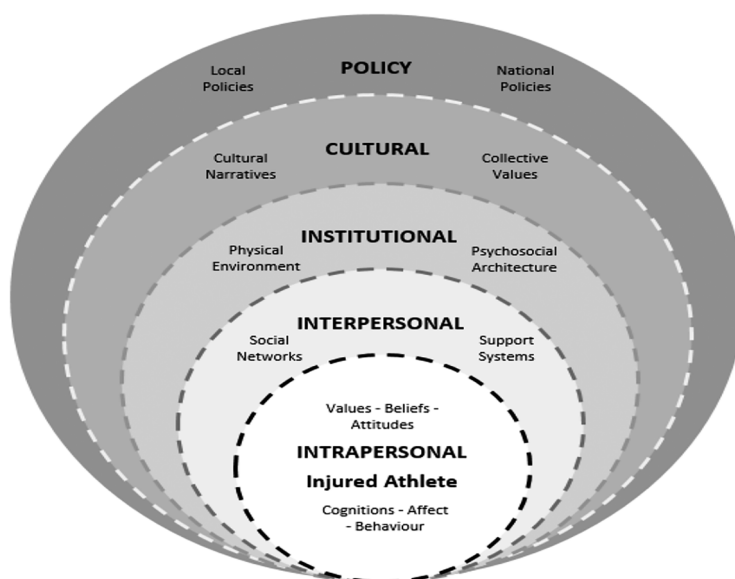


Figure 1. Multilevel model of sport injury (with examples).

reported higher pre-operative mood disturbances as well as greater pain, catastrophizing, and anxiety post-surgery compared to adults (Tripp et al. 2003; Udry, Shelbourne, and Gray 2003). Similarly, injured adolescents have talked about feelings of frustration associated with an inability to compete, rehabilitation setbacks and social isolation from relevant sport others (Podlog et al. 2012).

Despite the focus on the psychosocial ramifications of injury on athletes, an exclusive emphasis on athletes themselves, obscures the fact that the injury experience happens within a particular context, one in which an injury can impact a variety of sport injury stakeholders such as doctors, physiotherapists, coaches, teammates, and parents. As Wiese-Bjornstal (2009) suggests, “Injury affects more than the injured; it often also holds health-related consequences for the network of family, friends, teammates, coaches’ staff and even the larger communities” (64–65). One stakeholder group who have been shown to exert significant influence on athlete recovery and who are a pivotal source of support for injured adolescents are parents (Cavallerio, Kimpton, and Knight 2020; Cavallerio, Wadey, and Wagstaff 2022; Podlog et al. 2012; Teel, Caron, and Gagnon 2022a, 2022b). Researchers have shown that parents recognize injury as a stressful event for their children and they provide various forms of support (Burgess, Knight, and Mellalieu 2016; Podlog et al. 2012). Shifting the attention away solely from the injured athlete, a new wave of research also illustrates the experiences, concerns, and personal impacts of adolescent injury on parents themselves (Cavallerio, Kimpton, and Knight 2020; Cavallerio, Wadey, and Wagstaff 2022; Podlog et al. 2012; Teel, Caron, and Gagnon 2022a, 2022b) and how parents interact with relevant sporting practitioners (e.g. coaches, physiotherapists), other family members, or other sporting parents. The growth of research in this area is likely a function of numerous factors, including recognition of parental time, energy and personal investment in youth sport and the subsequent impact of negative events – like injury – on parents (Hallquist, Fitzgerald, and Alricsson 2016; Podlog et al. 2012), greater attention given to issues of caregiver burden for parents of injured youth (Aitken et al. 2009), and the likely impact of injury

on family finances (Podlog et al. 2012). Additionally, calls for multidisciplinary research that broaden the scope of injury inquiry to examine its implications for individuals other than the injured performers themselves (Wadey et al. 2018) are likely responsible for further research in this area. Finally, parents may act as advocates for their injured youth and they may worry about the long-term health consequences of their kids' injuries. Given this context, it is instructive to review the work to date examining the impact of injury on parents in order to provide a more coherent picture of the extant literature, to advance suggestions for further research in this area and to initiate a starting point for enhancing parental support systems and structures in the injury aftermath.

The purpose of this original and timely study is to take stock of this new wave of research by conducting a narrative review of the context- and population-specific literature focusing on parents of injured athletes. According to Grant and Booth (2009), a narrative review is an effective approach when the purpose is to delve into the experiential aspects of a phenomenon, to provide a coherent synthesis of extant research and to highlight future research directions. An appealing feature of narrative reviews – one which encouraged our adoption of it in the present study – is that it provides flexibility to summarize, synthesize and critique research while also allowing researchers to bring to life the stories, lived experiences and contextual nuances of those under investigation (Grant and Booth 2009). Furthermore, a narrative review can cover a wide range of subjects at various levels of completeness (i.e. it does not need to include a comprehensive search of all literature on a topic) and the analysis may be chronological, conceptual, thematic, etc.

Consistent with these features, the aims of our narrative review are therefore to: (a) review the research on the impact of injuries on parents and (b) review the research on how injury can impact parent transactions with relevant sporting practitioners, other family members (spouses, children) and other sporting parents. For some time now, the predominant lens of sport injury researchers has been to focus on the injured athlete, thereby ignoring the impact their injuries can have on others. The purpose of this narrative review is not to detract from more focused research on injured athletes; rather, our aim is to strive towards creating a more social and relational understanding of sport injury (Wadey 2020). Such an understanding is essential in uncovering the interpersonal dynamics that surround the competitive youth athlete injury experience and how social and contextual factors influence interpersonal interactions among key individuals (e.g. coaches, sport medicine providers, sport psychologists, parents). In so doing, this study can provide an evidence-based foundation to create a duty of care for parents that aims to support their personal and relational needs, as well as identifying future avenues of research that extend how we conceptualize this area of research.

Method

Aligned with the aims of this study and reflecting on the various ways to synthesize research, we made an informed choice to conduct a narrative review to provide a meaningful synthesis of research evidence (Greenhalgh, Thorne, and Malterud 2018). As narrative reviews may be conceptual in nature, given our aim of using the MMSI conceptual model to guide our synthesis and interpretation of findings, a narrative review seemed consistent with our objectives.

Conceptual framework

Aligned with the aims of the study and to guide our interpretations of the parent/sport-injury literature, we drew on the Multilevel Model of Sport Injury (Wadey et al. 2018) as a conceptual framework for this review (Figure 1). The MMSI – grounded in Bronfenbrenner and Morris (2006) Bioecological Model of Human Development – accounts for diverse levels of analysis that researchers can consider to better understand the multiple individuals that can impact and be impacted by the sport injury experience. Wadey et al. (2018) argued that five distinct, yet relational levels of analysis are important to examine the impact of sport injury on various injury stakeholder groups and the interactions between them: intra-personal, interpersonal, institutional, cultural and policy.

The intrapersonal level focuses on within-person attributes (e.g. personality traits) as well as individual thoughts, emotions and behaviors prior to and/or following injury occurrence (e.g. self-perceptions, motivational orientations, pain tolerance, tension, frustration, risk-taking, and coping styles). The intrapersonal level could focus on the athlete, the coach, a teammate/friend, a sport medicine provider or a parent. The interpersonal level pertains to interactions between some or more of the aforementioned individuals within the sports injury network who work to support (or in some cases thwart or simultaneously thwart and support) athlete rehabilitation and recovery. Interpersonal interactions – both formal and informal – could occur between various individuals or stakeholder groups, for example, a sport physiotherapist and an athlete, a coach and an injured adolescent, an injured athlete and a teammate/friend, or a parent and a sport medicine physician. The institutional level refers to physical structures (e.g. access to rehabilitation equipment and premises) and psychosocial features of the sport environment (player welfare, stakeholder relationships), as well as injury protocols (e.g. screening, surveillance, services). The cultural level pertains to cultural narratives, collective norms, traditions and values that prevail within the larger society. For example, cultural narratives about pushing through pain or making “remarkable recoveries” following injury may be drawn upon by social agents such as the media, sporting bodies and public institutions. Such narratives may exert a salient impact on the ways in which coaches, athletes, parents, and sport medicine providers make sense of the injury experience and the kinds of recovery outcomes (e.g. personal and performance growth following injury) they wish to obtain (Everard, Wadey, and Howells 2021; Smith and Sparkes 2002, 2004, 2005). Finally, the policy level reflects local and national policies and guidelines directed at injury prevention and/or recovery (e.g. knee-injury prevention program recommended by the Swedish Football Association). Injury policies could also include those of institutions such as insurance agencies, governmental health bodies that parents may interact with over the course of their adolescent’s injury.

Drawing upon the MMSI and consistent with methodological procedures for narrative reviews (Green, Johnson, and Adams 2006), we used a variety of search term combinations (“injury”, “sport injury”, “competitive sport”, “parent”, “youth”, “adolescent”, “interpersonal”, “cultural”, “institutional”, “policy”) that captured injury experiences at multiple levels of analysis. We searched the following databases: PsycINFO, PsycARTICLES, SPORTDiscus, Web of Science Core Collection, and the Cochrane Library from 1990 to the present. We adopted the following inclusion criteria for the study: 1. peer-reviewed, original research articles and/or literature reviews 2. a focus on the impact of youth sport injury on parents, 3. parent interactions with injured youth or injury stakeholders, 4. the role of parents in

Table 1. Key studies included in the narrative review regarding the impact of youth athlete injury on parents.

Authors, year	Design	Sample/ participants	Levels of analysis	Primary focus of study/article	Main findings
Burgess, Knight, and Mellalieu 2016	Semi structured interviews	Seven parents of national and international level gymnasts aged 11–14 years	Intrapersonal, Cultural	Stress experiences and coping strategies used by parents	Parents' expressed fear of child injury. Employed various coping strategies such as detaching from gymnastics, normalizing child's experiences, reducing knowledge gaps and regulating emotions
Cavallerio, Wade, and Wagstaff 2022	Observations, formal and informal interviews, and a focus group	Forty-three participants (16 gymnasts, 3 coaches, 1 physiotherapist, 22 parents, 1 manager)	Intrapersonal, Interpersonal, Cultural	Parents' experiences of, and role in addressing overuse injuries	Experiences of inadequate knowledge and unpreparedness; tensions between members and non-members of the gymnastics culture; and the weight of responsibilities
Friesen et al. 2018	Conceptual review/ reasoned argument piece	–	Policy	The legal responsibility of parents' related to their children's overuse injury	Overuse injuries stem from non-culpable ignorance and can be mitigated through the implementation of policies aimed at educating parents, schools, coaches, and organizations
Hallquist, Fitzgerald, and Alricsson 2016	Focus group and semi-structured interviews	Two homogeneous focus groups (seven parents of children aged 12–16 years and six physiotherapists, respectively). Five individual coaching interviews	Intrapersonal, Interpersonal	Perceptions of the responsibility for athletes' psychosocial support required after a severe sports injury	Parents' expressed dissatisfaction with communication and the care received from coaches and physiotherapists
Kerr and Stirling 2012	Semi-structured interviews	Sixteen parents (12 mothers and four fathers) of retired elite athletes (retired for one to six years)	Interpersonal, Institutional	Parents' reflections on their children's experiences of emotionally abusive coaching practices	Parents tend to adopt the role of silent bystanders to their children's experiences of emotional abuse
Lally and Kerr 2008	In-depth interviews	Six parents of former female elite gymnasts (retired for three to five years)	Intrapersonal, Cultural	Effects of athletes' disengagement from sport on parents.	Parents perceived that they assimilated into the culture of risk within high-level sports which normalized pain and injury

(Continued)

Table 1. Continued.

Authors, year	Design	Sample/ participants	Levels of analysis	Primary focus of study/article	Main findings
Podlog et al. 2012	Semi-structured interviews	Ten parents (7 mothers, 3 fathers) 39–51 years of age	Intrapersonal, Interpersonal	Parent perceptions of the impact of sport injuries on their children and themselves	Parents articulated various injury rehabilitation challenges for their youth (e.g., loss of motivation to compete, maintaining athletic identity) and for themselves (missed interactions with other sport parents, injury expenses, etc).
Sanchez 2017	Semi-structured interviews	28 parents (24 mothers 4 fathers) of horseback riding daughters, 10–23 years of age	Intrapersonal, Cultural	Parents' perceptions of equestrian risks and risk management strategies	Parents exhibit a heightened awareness of the risks associated with equestrian sports. They actively prioritize safety, emotional management, and willingly embrace these risks to foster their daughters' equestrian aspiration
Smits, Jacobs, and Knoppers 2017	Semi-structured interviews	Twelve parents and 14 elite women gymnasts (ages 14–30 years)	Institutional	Parents' perceptions of damaging coaching practices	Parents engaged in constant sense-making, which resulted in a code of silence and normalization of abusive coaching, including playing while injured
Teel, Caron, and Gagnon 2022a	Semi-structured interviews	Ten mothers and 2 fathers	Intrapersonal, Interpersonal	Parents' perception following their child's concussion.	Children's post-injury dysfunction and the uncertain recovery from concussion were significant stressors
Teel, Caron, and Gagnon 2022b	Mixed method survey and semi-structure interviews	49 children ($n_{\text{females}} = 40$) with concussion and their parent	Intrapersonal, Interpersonal	Impact of concussion on parent	Parental stress following pediatric concussion is highly variable depending upon factors such as parents' personality traits, coping abilities and other life stressors

youth sports. Articles were excluded if: 1. they failed to address the impact of youth sport athletes' injuries on their parents or did not encompass the parents' perspective or experiences regarding their children's injuries, 2. were not peer-reviewed or published in English, or, 3. were published prior to 1990, the latter exclusion criteria aimed at facilitating retrieval of current articles. In total, 2033 articles were omitted, while 49 articles met the inclusion criteria and included in the final narrative review. The search process was conducted from March until July 2023 and resulted in quantitative, mixed-methods, qualitative, and literature reviews/argument pieces spanning a range of disciplines, including sport psychology, sociology and sports medicine. In searching for articles, our intent was not to be exhaustive, but rather, to retrieve literature relevant to our objectives.

Results

In [Table 1](#), we present an overview of key studies describing the impact of injury on parents' and parent interactions with injury stakeholders.

Intrapersonal level

This narrative review has synthesized and identified that athletes' injuries can have a profound impact on parents' cognitions (thoughts), affect (emotions) and behaviors; the extent to which they are impacted, is influenced by their personality traits. Just as injured athletes' experience an abundance of injury-related stressors and strains, so too parents also experience a variety of demands, thoughts and emotions over the course of injury onset, rehabilitation, and return to sport and/or transition away from sport (Cavallerio, Kimpton, and Knight 2020; Cavallerio, Wadey, and Wagstaff 2022; Hallquist, Fitzgerald, and Alricsson 2016; Knight et al. 2016; Lally and Kerr 2008; Podlog et al. 2012; Sanchez 2017; Teel, Caron, and Gagnon 2022a, 2022b). Several studies reported how injuries experienced by their children are a common stressor for parents and how parents often feel unprepared to cope with their children's injuries (Burgess, Knight, and Mellalieu 2016; Cavallerio, Kimpton, and Knight 2020; Knight et al. 2016; Lally and Kerr 2008; Podlog et al. 2012). Parents experience a plethora of stress in the injury aftermath ranging from worries about the implications of injury for their child's health and well-being, struggles to alleviate their children's distress, and potential challenges with coaches, medical providers and health care institutions (e.g. medical provider companies; Cavallerio, Kimpton, and Knight 2020; Lally and Kerr 2008; Podlog et al. 2012). For instance, Hallquist, Fitzgerald, and Alricsson (2016) reported that parents felt that it was "difficult to see their children being injured", they had a hard time navigating medical care, and some felt their children received inadequate care and information as they transitioned back into sport.

Given these myriad challenges, parents are often found searching for guidance and information pertaining to how best to receive the support they need and to help their children manage the demands of injury rehabilitation and/or potential transition away from sport (Hallquist, Fitzgerald, and Alricsson 2016; Knight et al. 2016). With respect to the latter, Lally and Kerr (2008) research illuminates the effects of gymnasts' retirement from sport on parents' lives. It was identified how the pain resulting from injuries remained prevalent in their children's lives 'outside' the realms of sport, and how parents became increasingly

concerned about the longer-term physical health of their children, given the damaging impact sport had on them throughout their careers.

Adolescent injury also influences parent behaviors – or in some instances, non-behaviors. Evidence from the youth and parent sport literature suggests that some parents normalize demands, challenges and even abusive behaviors (including those pertaining to playing through pain and injury) experienced by their adolescents, rather than resisting or challenging competitive performance ideologies (Burgess, Knight, and Mellalieu 2016; Clarke and Harwood 2014; Kerr and Stirling 2012). Such normalization occurs as parents become socialized into competitive youth sports that prioritize a performance ideology emphasizing the importance placed on winning (McMahon, Knight, and McGannon 2018). Further, drawing on research from the coaching literature, Denison and Anver (2011) explain that when a parent is unable to voice their concerns, docility may result. If parents feel they do not have the right to question coaches' approaches, hierarchies can develop which contribute to the acceptance and maintenance of abusive practices in the name of competitive performance. Parents' inability to express their concerns was nicely illustrated in the comments of one mother in a study by Cavallerio, Kimpton, and Knight 2020 (136):

I fear the combination of [my daughter's] desire to train and being pushed by the coaches to ignore the pain is going to drown out the voice of reason; I have no say in her training plan and know any interference will result in me being labeled a 'difficult parent' and [my daughter] will bear the brunt of my actions in the training hall. ... I leave the gym feeling as though I have failed my child: I have not demanded to watch the sessions, I have not stated we will be taking our business elsewhere if they do not conform to the medical advice, I have not asked them to treat my child with the respect she deserves. My parental instincts to protect my child from harm have been whittled away over the years. I have been conditioned to accept pain and injury as par for the course and accept the coaches are experts in their field. I have been pushed into the shadows of my daughter's life. Why have I let this happen?

Parent's personality traits also impact how they experience their adolescents' injury (Teel, Caron, and Gagnon 2022b). Parents who for instance, are highly anxious, neurotic, or pessimistic prior to their child's injury were identified to have a more difficult time coping with their son or daughter's injury than parents lower in these personality attributes. In support of this argument, Teel, Caron, and Gagnon (2022b) conducted a mixed-method study of 49 children suffering concussion and their parents (40 females), and found that parents' neurotic and conscientious personality traits as well as their child's quality of life scores (i.e. the child's health, emotional, social and school related functioning) accounted for 45% of the variance in parental stress post-injury ($R^2 = 0.451$, $F(3,33) = 9.03$, $p < 0.001$).

With respect to relationships between adolescent's post-concussion quality of life and parental stress, such findings may in part be explained by previous research demonstrating links between lower quality of life scores for children of concussion and higher caregiver burden and more days of missed work for parents (Aitken et al. 2009). Indeed, evidence outside the sport injury context shows that care givers can experience a burden when attempting to support loved ones experiencing illness or injury (Adib-Hajbaghery and Ahmadi 2019). For instance, Adib-Hajbaghery and Ahmadi (2019) found that of the 385 first-degree caregivers of children and adolescents with chronic disorders, 33 (8%), 135 (35%), and 181 (47%) of the caregivers suffered from severe, moderate, and mild burden, while only 35 (9%) indicated perceived no burden. These findings have been replicated

amongst parents with kids experiencing a variety of mental and physical challenges and ailments (Fridman et al. 2017; Maunder and McNicholas 2021). Applying these findings to the sport injury context, it seems likely that the burden of care giving may take an emotional toll on parents, thus depleting their resources and potentially exacerbating strained parent-child interactions described in the “interpersonal” section below. Further research examining this contention is needed.

Interpersonal level

Adolescent injury was also identified to hold salient implications for parent-child interactions, for interactions between parents and other family members (e.g. spouses or grandparents) and between parents and relevant individuals in the sport environment (e.g. other sport parents, coaches, sport medicine providers). Following an injury, many adolescents experience a plethora of negative thoughts and emotions, for example, catastrophizing, anxiety, frustrations about missed opportunities, worries about their ability to regain physical competencies, a loss of their sense of self as “athletes”, and feelings of social isolation and dislocation (Manuel et al. 2002; Podlog et al. 2012; Tripp et al. 2003; Udry, Shelbourne, and Gray 2003; Wiese-Bjornstal 2004). While evidence suggests that parents are aware of the psychological toll of injury on their kids and attempt to provide support (Podlog et al. 2012), it is also evident that injury strains parent-child interactions, increasing the likelihood of divergent views emerging and the potential for interpersonal conflict. In Cavallerio’s (2022) ethnodrama (i.e. an enactment of research data in a scripted dramatization, Saldaña 2011) the following dialogue between parents (Paul and Sylvia) and an injured gymnast (Georgia), epitomizes such tensions:

Paul: [almost with irony] *I gather from your tear strained face that training was not so pleasant today?*

Georgia: *It’s not that... training was ok...I am just tired of feeling the pain in my back...I wish it could go away.*

Paul: (looking his daughter in the eyes) *Then you need to rest. You heard what the physio and the osteopath said, rest is the way.*

Georgia: (shaking her head) *I rested one day. And we also had Sunday off last week! Still, the pain is not going away! Why? [voice broken by tears]*

Sylvia: [tired] *Guys, can we at least enjoy dinner together, without drama? Georgie, how was school today?*

Georgia: (ignoring her mother and continuing with the same tone while looking down on her plate) *And I have not been using my back! I haven’t done anything with back flexibility in days now. So, I AM resting! It’s not like I can leave my team now that we have the group championship! [hushed]... that is no option...*

Paul: *See, that’s my problem! It is not true that there is no option! No one is forcing you to go! The group will work even without you for one day. If you want to rest, just say so. I WILL talk to the coach!*

Sylvia & Georgia: *NO!*

(Paul looks at them)

Sylvia: *It's the rule, Paul, remember? The coaches said they will only communicate with the gymnasts themselves... no parents.*

Georgia: *Please Dad, don't do that...you'll make me look like a little girl!*

Paul: *[tone between worried and discomforted] Well, but do YOU talk to them? Do they know you are still in pain?*

Georgia: *[without looking up] I am not doing back flexibility...*

Sylvia: *(patting Georgia's hand) Sweetie, why don't you go take a hot shower and get ready for bed? I'll come up in half an hour and I'll give you a massage and then we can try these buttermilk compresses Eve told me about today...yes? (looks at Georgia with a reassuring smile)*

Georgia: *Ok mum, thanks.*

Georgia stands up, grabs her gym bag from the corner and then walks up the stairs. The sound of a door opening and closing again can be heard from the kitchen. Some pop music starts playing in the background. Sylvia and Paul look at each other, Paul sighs and slowly shakes his head.

As a counterpoint, adolescent injury can provide an opportunity to strengthen parent-child interactions (Teel, Caron, and Gagnon 2022b). For instance, Salim and Wadey (2021) found that athletes engaging in a gratitude exercise reported a greater ability to relate to their parents than athletes in a control group undertaking their usual physical rehabilitation. On the parent side, one mother in Teel's et al.'s (2022b) study indicated that the concussion improved her relationship with her son, as it afforded an opportunity to spend additional time together. The mother remarked, "We played board games. We played cards. We were spending a lot of quality time together which we really don't do because it's either school, work, or he's on video games or he's with his friends. So, in that sense, our relationship actually was very nice. It was sort of like a win-win for me (1029)."

Adolescent sport injury may also have implications for parents' interactions with other family members (Cavallerio, Wadey, and Wagstaff 2022). For instance, Cavallerio, Wadey, and Wagstaff (2022) highlighted the potential for adolescent injury to increase tension amongst family members. One scene from the ethnodrama, depicts the parent of an injured gymnast having a frustrated discussion with her mom – that is, the injured athlete's grandmother – the latter of whom expresses concern to her adult daughter that her granddaughter is being rushed back into sport too quickly and being given insufficient rest. As the scene unfolds, the parent conveys increasing frustration with her mother, who, from her perspective fails to understand or appreciate the demands of high-performance gymnastics and the need for athletes to continue training and competing.

Mother: *[with a detached voice] ...I thought Georgie was staying home... you said she was crying again for back pain yesterday...I thought you'd keep her at home today...isn't she injured?*

Sylvia: *[fiddling with her hair, with a harder tone] Well, she was ok today. You always make it sound worse than it is. It is not a big injury, it's just a bit of pain...*

Mother: *Well, if you want to know what I think (Sylvia silently shakes her head 'no'), these girls should be left to rest at least one or two days when they are in pain... because if you have back pain and you keep...I mean, yes, they say they don't use it...but of course they do, because it's the*

back, it's natural to use it, at least a bit! These coaches should show a bit more flexibility in the training; if one gets injured, they should rest for a bit. I'm not saying they should stop for a week, but at least one or two days!

Sylvia: *(an expression on her face which is between bored, offended, and guilty)* Well, mum, you know your granddaughter! She is not the type of girl who stops and rests, who takes the week off to take care of herself. She is preparing the group competition, they need her, and she knows. Georgie is so much more mature and stronger than girls her age."

Mother: Yes, yes... but have you been to that osteopath I told you about?

Sylvia: *(sighs)* We went, he treated her and she was better...but you know how it works: If you go to any doctor, they tell you that you need to rest for a while and that's it.

Mother: ...well, I'm not saying one should stop for a month, but...

Sylvia: She rested her back for about a week, I massage her every night when she comes home, she had kinesio taping and all that... if it doesn't go away, we'll look into it in depth.

Mother: What do the coaches say? Have you talked to them?

Sylvia: *[replies quickly, almost cutting her mother's sentence]* The coaches are not to blame for this. Sometimes it's the Head Coach herself who calls me to tell me that there's a problem and to propose solutions, so now don't make it about them.

Mother: *[offended]* I am not *[mocking tone]* 'making it about them'. I am just curious to know what they say...

There is also preliminary evidence to suggest that injury may have implications for how parents interact with other individuals in the sport environment. For example, Podlog et al. (2012) found that just as injury impacted adolescents' social contact with teammates and training partners, so too an injury to one's adolescent minimized the interactions of parents with other non-injured adolescent parents. Such interactions may serve as important sources of connection with other parents that can in turn contribute to parent well-being. Indicative of this sentiment, one woman commented:

I'm wondering if in the whole network of this that my husband has probably been more depressed than anyone about it [the injury]... Jack's got to know quite a few of the parents and a few fathers in particular have become good friends and they're similar kind of guys. They have a lot of fun. Jack misses the social interaction ... Jack's got this time where he hasn't got to go to soccer. What's he doing now, you know?

Given this finding, it could be inferred that adolescents' reengagement with the sporting environment could be an uplifting experience for the well-being of parents, as it allows them to reconnect with other sporting parents.

Finally, parents interact with various injury stakeholders, in particular coaches and medical providers. With respect to the latter, researchers have highlighted positive and negative communications with sport medicine providers. Highlighting positive interactions, parents in Paterno et al. (2019) gave examples about how smooth coordination among providers provided a source of comfort and facilitated perceptions of rehabilitation progress. One parent noted, "I think that's completely critical ... making sure that the team, that there is a team and the team isn't just, you know, a separate doctor and a separate [physical therapist]

but a real team, including the sports medicine doctor, because we're talking about an athlete (581)."

In contrast, Cavallerio, Kimpton, and Knight (2020) reported problematic communication between parents and sport medicine professionals, noting that parents felt helpless and a sense of guilt in interactions with doctors and coaches. Similarly, Hallquist, Fitzgerald, and Alricsson (2016) reported that parents in their study experienced a "major lack of communication" with both healthcare providers and coaches. For instance, parents reported that some doctors failed to understand the necessity of rapid diagnosis and treatment of their child's injury, given the latter's interest in an expeditious return to competitive activities. Moreover, some parents reported that physiotherapists indicated they did not have the time or inclination to respond to parent inquiries about their children's course of treatment. Given these issues, several parents suggested that some form of written rehabilitation plan clearly articulating objectives to be achieved and timetables would be beneficial for facilitating communication and understanding. Parents remarked that it would be more practical for a child to look at a piece of paper and follow a plan and that written communication would facilitate knowledge and "security" knowing that everyone involved had the same information and goals to work towards.

Institutional level

Given the critical importance of considering the organisational features of sport environments (e.g. physical infrastructure, pathways to psychological support care, psychosocial climate, access to trained personnel) that contribute to the well-being of athletes and their support networks (Wagstaff 2017), it was surprising how few researchers have explored this level of analysis from a parental perspective. From reviewing the broader literature on sport injury to enrich our interpretations (e.g. Brewer and Redmond 2016; Wadey 2020), a potential reason for this omission, it that researchers have identified little or no organisational support available for injured athletes themselves, let alone parents (e.g. Gervis et al. 2020; Glynn et al. 2023). For example, to identify the current rehabilitation practices available for long-term injured football players in the United Kingdom, Gervis et al. (2020) invited 75 heads of medical departments to complete a survey about their rehabilitation practices within their organisational infrastructure. Whilst recognising that long-term injured players' experience clinical mental health concerns (e.g. anxiety, depression), their findings revealed that most clubs had limited access to psychologically trained professionals and there were no clear pathways to address the psychosocial impact of injury. For example, in response to the question, "Do you have staff trained in the psychology of injury?", 55% of clubs did not have staff with expertise. Where training was indicated, limited formal education was identified (e.g. part of a physiotherapy or sport science undergraduate degree). These findings highlight the limited context- and population-specific appropriate training for support staff in professional clubs and raises questions about their ability of organisations to support the psychosocial impact of sport injury, especially given that staff were not trained to identify, refer, or treat psychological concerns.

Further illustrative of a dearth of institutional training of support staff, findings from Gervis et al. (2020), indicate that 62% of clubs reported 'never' or only 'occasionally' screening for psychosocial issues following sport injury. Clubs who 'never' screened for

psychological concerns, also had no psychologically trained professionals in their treatment staff. The implication here is that where clubs do not screen and have no qualified staff, there is a heightened risk that players living experiencing psychological concerns go unsupported. It was concluded that, "... the duty of care shown towards their injured players is deficient, neglectful and possibly negligent" (23). Such conclusions highlight the critical importance of the institutional unit of analysis within the MMSI and how there is a need to provide environments that not only support the physical and psychosocial health of athletes, but also their support providers – including parents – who are also indirectly impacted by injury. Given that Gervis et al. (2020) findings pertained to a lack of support services at the elite level, it seems even less likely that such services exist for parents and competitors at the youth level.

Adding to the aforementioned challenges (i.e. limited access to trained professionals, no pathways to psychological support care, limited screening for psychosocial issues), another institutional level difficulty for parents pertains to the organizational climate and how parents are socialized into their children's sport. For example, Smits, Jacobs, and Knoppers (2017) explored how athletes and parents made sense of damaging coaching practices, for example those leading to sporting injuries and athletes pushing through pain and injury, in elite women's gymnastics. Interviews with female gymnasts and their parents, revealed a 'code of silence' and a normalization of abusive coaching practices. Given that parents are socialized to silence their concerns (e.g. Grenfell and Rinehart 2003; Kerr and Stirling 2012), an added challenge is that the climate does not encourage parents (and their athletes) to speak up if they are adversely impacted by, for example, injury. For instance, Mankad, Gordon, and Wallman (2009) interviewed injured athletes about their perceptions of the emotional climate. Injured athletes reported that they had to inhibit and/or suppress injured-related emotions within their team climate. Athletes did not feel comfortable verbalizing or disclosing these feelings to others. Instead, they controlled their outward expression and only displayed emotions of intense positivity and confidence. However, given that sports-related injuries appear to be one of the main triggers for mental illness and diminished well-being among adolescent athletes, which can include decrements in self-esteem, mental health issues, emotional role problems, social limitations, and post-traumatic stress disorder (Boykin et al. 2013; Haraldsdottir and Watson 2021; McGuine et al. 2014; Padaki et al. 2018; Valovich McLeod et al. 2009), there is a significant concern that injured athletes will not seek the help they need. Furthermore, given this code of silence and how parents are socialized into sport, parents are also less likely to disclose that they are struggling too (Cavallerio, Kimpton, and Knight 2020).

Efforts to understand the impact of adolescent injury on parents should also consider the institutional factors, such as the extent to which youth participate in recreational, state funded activities versus competitive sport, the latter of which may involve corporate sponsors and private or individual (parent) funding. In Canada and Sweden, youth hockey is "big business". Parents not only invest significant time and money, but companies sponsor and advertise at youth sporting events (Coakley 2016; Karlsson et al. 2023). Within this commercialized sporting environment, youth often specialize at an increasingly early age, train year-round and have fewer opportunities to rest and recover. Such trends likely contribute to an increase in acute and overuse injuries among youth (DiSanti and Erickson 2019; Rugg et al. 2021). Within these contexts, parents, particularly those with an ego-orientation, commonly experience worry and stress when their kids are missing out on

opportunities to train and compete. For parents, such opportunities may be viewed as vital in enabling their kids to develop their sporting prowess and/or achieve external rewards such as college scholarships, interstate/international travel, or social prestige and status (Coakley 2016). Unfortunately, these parental assumptions can translate into parental pressure on their kids to expedite their return to play, the latter of which fosters psychological distress for the child, re-injury or poor performance (Partridge, Brustad, and Stellino 2008).

Cultural level

To date, socio-cultural research on sport injury has highlighted the impact of sporting norms and values on adult athlete injury experiences (Nixon 1992, 1993, 1994, 1996, 2004; Safai 2004; Waddington 2006). Conversely, limited research has focused on how such factors influence youth athletes (Cavallerio, Wadey, and Wagstaff 2016) and even less work has centered on parents and parents' interactions with others (Sanchez 2017). While much work remains to be done in this area, the available literature suggests that sub-cultural norms about continuing sport participation despite pain and injury, or the risk of injury, may be internalized to a greater or lesser extent by different parents (Cavallerio, Wadey, and Wagstaff 2022; Sanchez 2017). While prevailing beliefs about the need to play with pain and injury may be predominant among some parents, others, may struggle to contend with the best way to make sense of such ideals when trying to influence decisions about their kids' pre- or post-injury sporting involvement. Illustrative of these discrepant viewpoints is an excerpt from Cavallerio, Wadey, and Wagstaff (2022) ethnodrama, in which two parents with previous elite gymnastics and/or injury experience endorse the importance of continuing to train and compete with pain and injury, while Sylvia (the previously quoted parent) conveys her uncertainties and trepidations:

Sylvia: And if that's not enough, Georgia keeps being in pain, and I cannot help but have that voice in the back of my head saying "Your mother is right, you should stop her"... (Sylvia's head falls forwards, her shoulder slump)

Gym mum 1: (looks at Sylvia with a confused expression; in the meantime she is putting the sweetener in the coffee and stirring with the teaspoon) Sylvia, come on! You cannot be like this!

Back pain is normal in gymnastics, everybody has it. I don't get nervous with Jade. [mimicking talking to her daughter] "You have pain? Well, let's see...let's start with simple ways of taking care of it". Then, when she can't take it anymore...for example if she can't train, because she can't jump, she can't do anything, and this has been going on for long, then I'll take her to the doctor.

Gym mum 2: I think the fact that you were a gymnast helps... you know what it is like...

Gym mum 1: (standing up slightly taller on her chair) I think that's why I don't get too worried...I know I used to sleep with compresses on...and I used to have a problem with my back...so when Jade had ankle pain for months, I told her "Don't worry, I used to sleep with compresses on my ankle"...my mum prepared those compresses with buttermilk, she put them on my ankles, and in the morning I took them off and I kept going on, it wasn't a problem. So, I do the same with my own daughter.

Sylvia: (half listening, looking lost in her train of thoughts, sipping from her mug) I know I just told my mother on the phone that this is how it is, that I trust the coaches...but the osteopath said she should rest for at least a week, and Georgia stayed home one day...she is so passionate about it...

Gym mum 2: *Plus the group competition is coming...they need to go...(takes a sip of her coffee)*

Gym mum 1: *You know the deal. It's competition time now, they have to train. Plus, Georgie took a rest day after the visit, and then they had a day off last week...*

Sylvia: *[interrupts Gym mum 1, with a slightly annoyed tone] It was Sunday!*

Gym mum 1: *[hard tone] Sylvia, you know what it takes if you want to get to a certain level: they cannot skip training...unless they are feeling really bad, but in that case the coaches' themselves will tell her to stop...a little bit, at least.*

Sylvia: *[getting more and more heated] I know, but should it be this way? Is it really the only way? I know this is what the coaches tell us, I know this is what everyone is doing. But how do we know it's the right way?*

Gym mum 1: *(placing a hand on top of Sylvia's, trying to calm her down) Aren't you proud of Georgia? Look, she is not one of those girls who give up immediately as soon as she feels "something"; she keeps working and so, yes, maybe a little pain that could be solved in a week becomes something that goes on for a month or so. But that's what's needed, that's what the coaches are looking for: they see that a gymnast has to be complete, you know, she needs to know how to suffer, to bear pain... And they have so many things to take care of...a gymnast cannot rest for too long.*

[pause]

You know that, you are not a newbie (drinks the last sip of her espresso).

Sylvia: *(shaking her head sadly, but quieter) I know, I know...but it's just not easy to see my daughter in pain. And I wonder if she feels obliged to train, and if she feels understood by the coaches...if she needs to stop, it is not because she doesn't love gymnastics, or because she doesn't care about the group...*

As the above dialogue illustrates, the extent to which parents internalize sporting norms and values about pain and injury can substantially impact the ways they think about, talk about and experience their child's injury. The extent to which norms about pushing through pain and injury are prevalent across various youth sports remains an open question. Sociological research in various youth combat and/or traditionally male dominated sports (e.g. football, rugby, boxing, wrestling) has highlighted the impact of values such as hegemonic masculinity and its implications for participant sporting experiences (Baker and Hotek 2011; Light and Kirk 2000). The implications of such norms for parent experiences of adolescent injury is a valuable area for further research.

Worth noting, is that the gender of the parents may influence their responses to injury. For instance, Bloodgood et al. (2013) found that among all parents, significantly more mothers (68%) than fathers (34%) strongly agreed that concussions are a "critical issue." Additionally, studies by Teel, Caron, and Gagnon (2022a, 2022b), Cavallerio, Wadey, and Wagstaff (2022) and Podlog et al. 2012 were all predominantly or exclusively comprised of female samples. Paradoxically, previous research has shown that parental involvement in sport may differ as a function of gender, with father's playing a stronger role in their kids sport than mothers, especially with respect to their sons (Horn and Horn 2007). In particular, fathers may provide more encouragement for participation, hold higher expectations of sport competence and initiate greater supportive behaviours (e.g. attendance to meet,

encouragement, and interest shown) for their sons than their daughters (Horn and Horn 2007). Once injured however, it may be the case that mothers play a more stereotypic support role, by offering emotional comfort and listening support. Further research examining the ways in which parents' gender influence their responses to and interactions with their injured adolescents is needed.

Finally, other cultural level factors such as parents' socio-economic status (access to collectively desired resources; Oakes and Rossi 2003) or their education levels may impact the kinds of experiences parents have in the injury aftermath. Parents with access to private health care, may in many countries, be afforded access to different levels of care for their injured adolescents' than those without the benefit of such resources. Presumably parents with minimal to little healthcare coverage may experience greater financial strains and hence more psychological distress than their higher SES counterparts. Limited support for this idea comes Podlog et al. (2012) in which parents reported concerns about having to cover medical expenses such as doctor's visits, surgery or rehabilitation. Such costs enacted a financial toll on families that was stressful, as alluded to in one parent's comment: "finances are a bit of an issue, but we borrowed money to pay for his [son's] surgery so he can have it in Sydney and not here" (182). Despite the financial burden, parents, indicated a desire to assist their child, even if it entailed personal sacrifice: "It has affected us a lot financially, an awful lot, but you only have your kids once and you do every bit for them" (183).

Policy level

Youth sports typically have policies that vary from one context or sporting level to another. Such policies may include detailed rules, guidelines and actions for athletes, coaches and/or sport medicine treatment providers. One injury type where societal pressures and recognition of its potentially deleterious consequences has impacted policy is in the area of sport-related concussion. In Canada for instance, Hockey Canada, has a concussion policy, an excerpt of which follows:

Hockey Canada is committed to maintaining the health, well-being and safety of all its participants. Safety is a top priority for those participating in the sport of hockey.

Hockey Canada recognizes the increased awareness of concussions. This policy is intended to be a tool to assist in proper management of those who have a concussion or are suspected of having a concussion. Hockey Canada encourages the prevention of concussions using sound education programs and enforcement of the rules of the game. This includes, but is not limited to:

- *The reduction of violence in the game.*
- *The reduction of head contact.*
- *The reduction of hitting from behind.*
- *Education of all participants on prevention and recognition of head injuries.*
- *Responsible concussion management and return to play.*
- *Encouraging respect and fair play.*

This policy applies to all players, coaches, officials, trainers, safety personnel, registered participants, parents/guardians, administrators, and decision makers of Hockey Canada.

On the one hand, having such policies may provide parents with some measure of reassurance that certain best-practices are being followed and/or enacted. Parents could assume

for example, that coaches are operating in accordance with such policies and that in doing so, the risk of further injury or harm to their children is mitigated. However, evidence suggests that in many cases parents are not aware of or educated on existing concussion policies (Bloodgood et al. 2013; Daugherty and Sarmiento 2018; Turner et al. 2017). Even when parents are aware of such policies, in instances where parents have reason to believe that such policies are not being implemented or enacted, abdication of such responsibilities may lead to parental distress. Indeed, the aforementioned comments of the parent who lamented the fact that her daughter's coaches encouraged the daughter to push through the pain and who, according to the mother, failed to "*conform to the medical advice*" (Cavallerio, Kimpton and Knight 2020), lend credence to this suggestion. In these instances, sport policies may provide a useful starting point for informing and educating parents' action and advocacy, which may positively impact parents' sense of agency and influence over their child's injury experience and their personal well-being as parents (Macdonald and Hauber 2016; Rice and Curtis 2019). Given the dearth of research examining such contentions, further work in this area would be informative.

At the policy level, parents must also interact with insurance providers and navigate detailed and potentially confusing insurance policies. Parents can spend substantial amounts of time trying to comprehend detailed policies written in technical language or in languages other than their native tongue (Kroshus et al. 2019), navigating potentially large bureaucracies, or being directed and re-directed to different individuals within insurance network providers. Such an undertaking may be particularly arduous, even for the most "policy-savvy" minded parents. Further research examining the ways in which parents experience the process of dealing with insurance companies and the implications such interactions have on their personal well-being and family dynamics is an interesting area for additional scholarship. In contrast there are scholars who argue that parents themselves should be held legally responsible if their children suffer from overuse injuries in cases when parents have abused their role as caregivers and have failed to prevent or even pressured their children to specialize in a sport at an early age, train excessively, or return to play prematurely after sustaining an injury (Friesen et al. 2018). However, little is known about the potential consequences of such legislative action, how it would be received by parents, or its effectiveness in reducing the prevalence of overuse injuries in youth sport. Consequently, this is an area that deserves further research attention.

Discussion

The aim of this narrative review was to examine the impact of injury on parents as well as parent interactions with significant others (their kids, family members, other sport parents, rehabilitation providers). Using the MMSI (Wadey et al. 2018), we demonstrated that adolescent injury can have a profound impact on parents and their interactions with a host of other individuals within and beyond their immediate family. Research on the intrapersonal level indicated that adolescent injury often carries with it feelings of self-doubt, worry and apprehension. Furthermore, parents' personality traits (e.g. neuroticism, conscientiousness) that exist prior to the injury likely impact how parents experience the post-injury aftermath. Further research supporting these contentions is warranted. A variety of research methodologies, such as reflexive journaling, mixed-methods research (e.g. survey and interview-based studies), and story completion could be used to capture the inner worlds of

parents as they navigate their adolescent's injury experiences (e.g. Clarke et al. 2019). Story completion is a novel qualitative method in which participants write stories based on hypothetical scenarios created by the researcher. Researchers typically use a prompt statement, representing the beginning of a story plot that the participant completes. Analysis of the stories can be used to gain insights into sensitive or difficult subject matter (e.g. inner turmoil following serious injury) that may be challenging to access using traditional methods such as direct questioning (i.e. traditional interviews; Clarke et al. 2019).

Moving the analysis to the interpersonal level of the MMSI, our review demonstrated that adolescent injury typically strained interactions between parents and their kids, other family members and relevant others in the sport environment. That said, instances in which adolescent sport injury brought parents and kids closer together were also noted in the literature. It is also interesting to note that the interactions documented in the literature pertained primarily to mothers and their injured youth and between mothers of injured kids. Whether these findings are an artefact of the particular studies reviewed or whether gender impacts the types of interactions between parents and their injured offspring is a topic worthy of further investigation. Additionally, it may be that mothers are more likely than fathers to assume the role of support provider, given the former may traditionally be the ones to provide emotional support for their kids following difficult life events (Bianchi and Milkie 2010). Alternatively, as fathers often play a predominant role in the sporting life of their offspring (Horn and Horn 2007), dad's may also be involved in and impacted by their adolescents' injury and/or play a key role in interacting with other injury stakeholders. Further research examining the role of gender and its impact on the nature and quality of adolescent-parent interactions would be beneficial. Finally, the impact of adolescent injury on the quantity, quality, and nature of parent-parent interactions, and parent interactions with coaches/sport medicine providers remain fruitful avenue for further scientific inquiry. Focus group interviews with various family members and injury stakeholders could be instructive in eliciting insights into the interpersonal dynamics surrounding adolescent injury. Additionally, autoethnographic work in which parents personally document their experiences would be informative in uncovering the nature of parent's interpersonal interactions following injury.

An area with a dearth of research, pertained to the institutional level. Based on emerging research with elite athletes, it seems likely that there exists little to no organisational support available for injured youth athletes themselves, let alone their parents. A deeper understanding of the impact of institutional level elements (e.g. pathways to psychological support care, psychosocial climate, access to trained personnel) on parents of injured athletes is warranted. Additionally, on an institutional level, an under-researched topic is the impact of the physical environment, in which athletes recover, on parents' injury experiences. Parents may be reassured when their kids have access to knowledgeable health care providers operating in well-equipped rehabilitation facilities. Conversely, parents may experience greater trepidation about their child's injury, when their offspring does not have the benefit of services. Such contentions require further investigation. Research on the cultural level suggests that parents – particularly those who previously played elite sport – may be apt to internalize cultural norms and values normalizing pain and injury as part and parcel of the adolescent sport experience. Conversely, some parents may struggle with such norms as they consider how best to advocate for their kids' health and well-being. Finally, although further research is needed, it seems likely that

sport body governing policies as well as insurance policies hold significant implications for parent experiences following adolescent injury.

As highlighted in this paper, the multilevel model provides a dynamic heuristic for examining multiple levels of analysis that come to bear on parents in the aftermath of their adolescent injury. It is also important to note that the different levels in the MMSI model interact with and are impacted by one another (see Bronfenbrenner and Morris 2006). For example, in the study by Cavallerio, Kimpton, and Knight (2020), sport norms about playing with pain and injury that operate at a cultural level appear to influence interpersonal level interactions between sport moms and between family members (e.g. an injured mother and grandmother; a father/mother/daughter interaction), who debate and struggle with the best course of action to remediate a youth gymnasts' back pain. Further understanding of interactions between various levels within the MMSI in a youth sport injury context is warranted. Questions such as the following are worthy of further investigation: To what extent do parents believe they can influence injury stakeholders (e.g. coaches, sport administrators) with respect to injury decisions about their children (i.e. questions of agency)? How might parents who are concerned about their children's welfare challenge traditional sport norms or influence policy level changes? How do parents perceive the significance/impact of education (institutional level) and potential policy documents (policy level) on prevailing norms about playing with pain and injury and how do parents believe these educational programs/policies might be developed/promoted? What institutional level supports do parents seek in helping them and their youth manage the challenges and strains of youth sport injury?

In line with Bronfenbrenner and Morris (2006) Bioecological Model of Human Development, we contend that in addition to the five levels outlined by Wadey et al. (2018), it is also prudent to include the "Chrono System Level" in the MMSI model. The Chrono system level acknowledges that factors occurring at the intrapersonal level (e.g. parent cognitions, emotions and behaviours regarding their adolescent's injury) might fluctuate over the course of an injury episode or experience. Indeed, substantial research has highlighted variations in athletes' psychological responses over the course of injury rehabilitation (e.g. Bianco and Eklund 2001; Tracey 2003). Moreover, given that kids developmental stage may impact their response to injury (e.g. an 8-year old may respond to an injury differently than a 15-year old), so too parents responses and interactions with their kids may differ as a function of the developmental stage of their children (see Weiss and Raedeke 2004). Such considerations should be accounted for in any model attempting to examine parent-child interactions following sport injury. Further, while the MMSI provides a useful model for considering various levels of analysis, a model is not a theory (Podlog and Eklund 2007), and therefore fails to provide a coherent explanation for a phenomenon of interest or to facilitate predictions regarding future events. As such, we advocate use of various theories, for example, family systems theory, symbolic interactionism and/or postmodern and structuralistic theories (e.g. Bourdieu 1987; Foucault 1977; Goffman 1983; Minuchin 2012) to better understand various levels of analysis and relational dynamics surrounding adolescent injury and parent experiences of it.

In sum, we hope the preceding review has offered a more detailed picture of the multitude of factors and types of experiences that parents have following adolescent sport injury. We also hope the present review encourages researchers to broaden their scope of injury inquiry, to examine multiple actors within the sport injury network and to examine various levels

of analysis that come to bear on the individuals within such networks. Doing so, can lead to a much more detailed and comprehensive understanding of the injury experience for the many individuals involved in it.

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