Positive Youth Development and Youth Sports in the Context of the COVID-19 Pandemic

Marie-Michelle Boulanger

Department of Educational and Counselling Psychology

McGill University, Montreal

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Abstract

Positive youth development (PYD) is a strength-based approach to understanding youth development (Agans et al., 2016; Lerner et al., 2005; Overton, 2015). Youth are viewed as having potential to harness resources from their individual characteristics and social environments to foster positive developmental change (Lerner et al., 2005). Given its popularity, engaging environment, and many physical, psychological, and social benefits, the sport context is a particularly promising setting for promoting youth development, well-being, and mental health (Fraser-Thomas et al., 2005; Hajkowicz et al., 2013; Swann et al., 2018). However, with the onset of the COVID-19 pandemic, the strict social distancing rules applied to curb its effects have had a substantial impact on the youth sport setting and on participating youth. Using the grounded theory for PYD through sport (Holt et al., 2017) as a guiding framework, the present study explored the impact of the pandemic on youth sport participants and gathered information about the way athletes engaged with the PYD climate, namely relationships with teammates, coaches, and parents, to cope the sport interruption. This study consisted of a convergent parallel mixed methods design including a quantitative and a qualitative phase. Six hundred and thirty-five youth (26.5% female; M_{age} = 15.91, SD_{age} = 2.26) were surveyed at the beginning of the pandemic, between May 2020 and June 2020, for the quantitative phase of the study. Survey participants were asked about their engagement with the PYD climate (i.e., communication, perceived support) and their emotional reactions to the sport interruption. Results showed that 88% of athletes had been in contact with their teammates and 68.2% had been in touch with a coach at least once since the beginning of the pandemic. Most frequently discussed topics included training and return to play. The most frequently endorsed emotional reactions to the sport interruption included feelings of disappointment, frustration, impatience, and sadness.

Athletes also overwhelmingly reported that they felt high or very high levels of support from their parents (87%), teammates (77.9%), and coaches (80.1%). Chi-square analyses revealed that athletes who endorsed feeling emotionally supported by teammates and coaches were also more likely to report higher intensity negative emotions. Furthermore, perceptions of support and emotional reactions were not significantly related to the frequency of contact with teammates or coaches, but multiple significant associations emerged between PYD outcomes and the content of communication. For the qualitative phase of the study, a sub-sample of 24 youth (33.3% female; M_{age} = 15.08, SD_{age} = 1.86) were subsequently interviewed from May 2020 to July 2020, for a more in-depth perspective of their experience in relation to the sport interruption due to COVID-19. Almost all interviewees reported on supportive interactions with teammates and, to a lesser extent, with coaches. The loss of social connection and the simple fun of playing sports emerged as major reasons why the sport interruption was so difficult for these young individuals. While youth experienced significant emotional challenges in the face of the sport interruption, they also reported the use various coping strategies. Overall, the results of this mixed methods study show the challenging social and emotional toll caused by the sport interruption. Nonetheless, youth sport participants remained in contact and drew support from their PYD climate, as well as engaged in various methods of coping. The PYD climate appeared to transcend the bounds of the playing field and play a significant role in youth's resilience throughout the early days of the COVID-19 pandemic. Future research is warranted to examine the way in which sport systems may be adapted and optimized to further scaffold PYD both on and off the field and in the event of future sport interruptions.

Résumé

Le Développement positif des jeunes (PYD) est une approche basée sur les forces pour comprendre le développement des jeunes (Agans et al., 2016 ; Overton, 2015). En exploitant les ressources de leurs caractéristiques individuelles et de leurs environnements sociaux les jeunes peuvent favoriser un changement développemental positif (Lerner et al., 2005). Compte tenu de sa popularité, son environnement engageant, et ses avantages physiques, psychologiques et sociaux, le contexte sportif est un cadre prometteur pour promouvoir le développement, le bien-être et la santé mentale des jeunes (Hajkowicz et al., 2013 ; Swann et al., 2018). Cependant, avec l'arrivée de la pandémie de la COVID-19, les règles strictes de distanciation sociale appliquées pour endiguer ses effets ont eu un impact substantiel sur le cadre du sport et sur les jeunes participants. Dans le cadre de la théorie ancrée pour le PYD par le sport (Holt et al., 2017), la présente étude explore l'impact de la pandémie sur les jeunes participants au sport et recueille des informations sur la façon dont les athlètes s'engagent dans le climat du PYD (p.ex. relations avec les coéquipiers, les entraîneurs et les parents) pour faire face à l'interruption du sport. Cette étude aux méthodes mixtes parallèles convergents a consisté en une phase quantitative et une phase qualitative. Six cent trente-cinq jeunes (26,5 % de femmes ; $M_{âge}$ = 15.91, $SD_{âge}$ = 2.26) ont été interrogés au début de la pandémie, entre mai 2020 et juin 2020 pour la phase quantitative de l'étude. Les participants à ont été interrogés sur leur engagement dans le climat du PYD (c-à-d la communication, le soutien perçu) et leurs réactions émotionnelles à l'interruption du sport. Les résultats ont montré que 88 % des athlètes avaient été en contact avec leurs coéquipiers et 68,2 % avaient été en contact avec un entraîneur au moins une fois depuis le début de la pandémie. Les sujets les plus fréquemment abordés étaient l'entraînement et le retour au jeu. Les réactions émotionnelles les plus fréquentes à l'interruption du sport comprenaient des sentiments

de déception, de frustration, d'impatience et de tristesse. Les athlètes ont également déclaré à une majorité avoir éprouvé un soutien élevé ou très élevé de la part de leurs parents (87 %), de leurs coéquipiers (77,9 %) et de leurs entraîneurs (80,1 %). Les analyses quantitatives ont révélé que les athlètes qui affirment se sentir soutenus émotionnellement par leurs coéquipiers et leurs entraîneurs étaient également plus susceptibles de signaler des émotions négatives d'intensité plus élevée. En outre, les perceptions de soutien et les réactions émotionnelles n'étaient pas significativement liées à la fréquence des contacts avec les coéquipiers ou les entraîneurs, mais de multiples associations significatives sont apparues entre ses variables et le contenu de la communication. Pour la phase qualitative de l'étude, un sous-échantillon de 24 jeunes (33,3 % de femmes ; M_{age} = 15.08, $SD_{âge}$ = 1.86) a ensuite été interviewé de mai 2020 à juillet 2020, pour une perspective plus approfondie de leur expérience en relation avec l'interruption du sport due à la pandémie. Presque toutes les personnes interviewées ont fait état d'interactions de soutien avec leurs coéquipiers et, dans une moindre mesure, avec les entraîneurs. La perte du lien social et le simple plaisir de pratiquer du sport sont apparus comme les principales raisons pour lesquelles l'interruption du sport a été si difficile. Bien que les jeunes éprouvent des difficultés émotionnelles importantes face à l'interruption du sport, ils ont également déclaré avoir recours à diverses stratégies d'adaptation. Dans l'ensemble, les résultats de cette étude aux méthodes mixtes montrent le lourd tribut social et émotionnel causé par l'interruption du sport en raison de la. Néanmoins, les jeunes sportifs ont continué à rester en contact et à tirer un soutien de leur climat de PYD, ainsi qu'à utiliser diverses méthodes d'adaptation. Le climat du PYD semble transcender les limites du terrain de jeu et jouer un rôle important dans la résilience des jeunes pendant les premiers jours de la pandémie. De futures recherches sont nécessaires pour optimiser les systèmes sportifs afin de soutenir davantage le PYD sur et en dehors du terrain de jeu.

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I save this piece of writing for the end, as it is a pleasure and, in truth rather humbling, to acknowledge the individuals that helped me finally get past the ever-moving goal posts of finishing a dissertation. Save the best for last right? Without the help I received from those I acknowledge below, I am hard pressed to believe that I would have ever been able to design an entirely new project and collect data during a global pandemic (which made it impossible to carry out my initial project idea), and to push myself to keep working through two pregnancies and my first years of motherhood.

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Contributions to Original Knowledge

The COVID-19 pandemic prompted significant research efforts investigating the physical, social, and emotional impacts of both the disease and the resulting public health and safety restrictions on youth worldwide. Whereas many early studies used quantitative methods to investigate short-term outcomes related to athletes' mental health and well-being, the current study provides an added perspective of youths' coping skills and resilience using qualitative data. Moreover, this study contributes to the COVID-19 literature by using a strength-based approach to examining the problem. It also contributes to the PYD literature as one of few investigations of COVID-19 using a PYD through sport lens. Although it may appear unusual to study youth sports in a context where the physical practice of sport is not permitted, this study broadens the scope of the PYD through sport field by going beyond the confines of the sport arena to understand the broad potential of the PYD climate to help foster PYD.

Contribution of Authors

As the primary investigator of this research project and primary author of this dissertation, I was responsible for the conceptualization, development, and execution of the research project. I am also the primary and sole author for most of the text presented below. While developing the project, I sought extensive support and supervision from my research supervisor Dr. Steven Shaw. He guided me in my thinking and advised me on methodological approaches as needed. Dr. Shaw further provided crucial practical and moral support throughout the entire process, and especially in the final stages with multiple rounds of revisions and edits to prepare this dissertation for examination. Moreover, I was aided in the development of the survey by one of my co-investigators, Vincent DiStefano, who also helped to review the initial drafts of this dissertation. I also worked with two graduate students, Sierra Pecsi and Cameron Davidson, to transcribe and code the qualitative interviews conducted for this study. Ms. Pecsi further provided valuable support with regard to reviewing the coding scheme, authoring sections of the qualitative results, and reviewing and editing the work in its entirety.

Chapter I

Introduction

Extracurricular activities, such as afterschool sport, drama, and music programs have been studied as vehicles through which youth develop life skills and other qualities and competencies that indicate or enhance Positive Youth Development (PYD) (Jones, et al. 2011; King et al., 2005; Larson, 2000). With more than 50% of children and adolescents participating in organized sport across North America and around the world each year, sport is the most popular extracurricular activity for school-age youth (Camiré et al., 2009b; Garst, et al., 2016; Tremblay et al., 2014). Sport participation also has the greatest number of positive effects of any extracurricular activity for youth (Marsh, 1992). When surveyed, youth who participate in extracurricular sports viewed these activities as central to their identity and their well-being (Bruner et al., 2017). Bruner and colleagues (2014, 2017) further demonstrated that positive social identity of team sport participants was associated with personal and social skills as well as greater prosocial behaviour, goal setting and initiative. However, in 2020, with the onset of the COVID-19 pandemic, many youths lost complete or intermittent access the sports that played a central role in their daily lives and development, thus interrupting important and time-sensitive opportunities for positive youth development.

Traditionally, youth development has been addressed through deficit-reduction strategies that aim to identify and target problems that need to be fixed, like externalizing behaviours or obesity (Fraser-Thomas & Côté, 2009). Since the 1990s, there has been a paradigmatic shift toward an asset-building approach that emphasizes working with youth to identify and positively develop their assets (Benson, 1997). Positive youth development (PYD) is a strength-based approach to understanding youth development that is rooted in a relational developmental

systems metatheoretical approach (Agans et al., 2016; Bowers et al., 2010; Lerner et al., 2005; Overton, 2015). Unlike reductionist approaches to youth development, the relational developmental systems perspective emphasizes the need to examine all parts of a system in relation to each other, rather than studying each element in isolation (Overton, 2015). In this way, the field of PYD highlights the importance of understanding how individual strengths are enhanced by and contribute to the contextual factors that give young people the capacity to thrive (Lerner et al., 2015). Youth are viewed as having potential to harness resources from their individual characteristics and their social environments to build strengths and foster positive developmental change (Lerner et al., 2005). The PYD approach also seeks to identify approaches that will promote positive outcomes for youth by enhancing protective factors and reducing risk (Catalano et al., 2002; Riley et al., 2017). Therefore, it is a proactive approach that aims to improve overall health, well-being, and productivity by enhancing youths' psychosocial development and use of life skills (Gould & Carson, 2008; Holt et al., 2008).

The sport context is a particularly promising setting for promoting youth development, well-being, and mental health given its popularity and engaging environment, in addition to the many physical, psychological, and social benefits associated with sport participation (Danish et al., 2004; Fraser-Thomas et al., 2005; Hajkowicz et al., 2013; Hellison et al., 2008; Jones et al., 2011; Larson, 2000; Swann et al., 2018). The sport context is an enjoyable environment that requires a different level of emotional involvement than the school setting (Jones et al., 2011; Larson, 2000). Like the school setting, however, the sport context is defined by structure and adult leadership, and presents cognitive, social, and emotional challenges that provide athletes with opportunities to grow as individuals (Jones, 2016). Thus, under the appropriate conditions (e.g., structured environment), the youth sport context can serve as a driver for enhancing

youths' developmental assets, such as self-esteem and positive social relationships, that in turn allow them to thrive (Fraser-Thomas & Côté, 2009; Holt, 2016; Holt et al., 2017). Given its popularity, the sport context is increasingly recognized as a vehicle for positive youth development (PYD).

With the World Health Organization's assessment of COVID-19 as a global pandemic on March 11, 2020, municipalities across Canada began issuing states of emergency and stay-at-home orders. Closures and interruptions of non-essential activities in addition to school closures and strict social distancing rules to curb the effects of the COVID-19 pandemic were followed by the cancellation of sporting events and upcoming youth sport opportunities. The youth sport environment as a context for promoting positive youth development changed quickly and dramatically. The immediate impacts of the pandemic manifested across all levels of the youth sport environment. At the macro-level, leagues and tournaments were shut down, at the micro-level youth could no longer engage in routine, close social contacts with their coaches and peers, and at the individual level youth lost access to important developmental and learning opportunities associated with sport participation.

Early research found significant and concerning reductions in physical activity among youth, coupled with increases in screen time and social media use, resulting from pandemic-related social-distancing measures (Ellis et al, 2020; Moore et al., 2020; Munasinghe et al., 2020). Such lifestyle changes were quickly associated with poor mental health outcomes such as low mood, anxiety, and loneliness (Al Omari et al, 2020; Ellis et al., 2020; Munasignhe et al., 2020; Lee et al., 2020; Qi et al., 2020). As the pandemic endured, media reports increasingly highlighted these early impacts:

> Experts say the jarring stop has left a huge void for athletes and families. Beyond the obvious loss of important physical fitness, skill building and coach feedback, there is also the sudden loss community and social connection, a key aspect of the sports experience. For many young athletes, the coronavirus pandemic has meant drastic changes in virtually every aspect of their lives, including not being in school. (Strashin, 2020)

Holt and colleagues (2020), argue that a current limitation of the PYD through sport literature is a focus on intra- and interpersonal factors such as PYD outcomes, without seeking ways to understand how contextual factors contribute to the process of PYD through sport. Such contextual factors include the distal ecological system made up of community, policy, and culture among others, as well as a smaller system within the immediate sport context, the PYD climate, that is defined by the youth's interactions with other individuals in that sport environment including peers, coaches, and parents. With the onset of the COVID-19 pandemic, athletes lost access to many contextual factors that may contribute to their positive development in the sport environment. For some, this pause extended for up to a year or more, and in many communities, it has led to a decrease in youth sport participation (Aspen Institute, 2021). As such, from the perspective of PYD through sport, it is assumed that the COVID-19 pandemic resulted in a net loss, wherein athletes lost access to the youth sport ecosystem. Thus, it may be hypothesized that such a disruption would have an overall negative impact on PYD for youth who typically engage in sport. Much early research has focused on the impact of COVID-19 on PYD outcomes for youth sport participants, however, little research has been conducted to understand changes to contextual factors that contribute to PYD in sports settings, such as the PYD climate. As will be further described below, the current program of research is intended to explore the impact of COVID-19 on youth sport participants and the youth sport context that

contributes to PYD outcomes. Specifically, the goal is to better understand youths' continued engagement with the PYD climate (i.e., relationships with teammates, coaches, and parents), and its impact on PYD outcomes and coping for youth whose sports were disrupted by the COVID-19 pandemic.

Chapter II

Review of the Literature

Research interest in youth sports, and particularly in its potential to serve as a context for PYD, has increased significantly since the turn of the 21st century (Holt, 2016). This trend is made evident by the proliferation of studies investigating the impact of sport participation on youth (see Holt et al., 2017). Although sports have long been touted as a domain in which youth develop physical skills, strong moral character, and leadership skills, findings suggest that positive outcomes are not an automatic consequence of doing sports, but rather that sport participation is both positively and negatively associated with indicators of youth development (Gould et al., 2007; Hansen et al., 2003; Merkel, 2013; Wiggins, 2013). For example, the sport context is a venue for identity development, personal exploration, cognitive and physical skill development, and social-emotional learning (Gould et al., 2007; Hansen et al., 2003). However, sport participation is also associated with exposure to high levels of stress and peer pressure, physical injury, aggression, and inappropriate adult behaviour (Fraser-Thomas & Côté, 2009; Hansen et al., 2003; Merkel, 2013). These variations in developmental outcomes are related to many interacting individual and contextual factors present in the sport environment that mediate the relationship between sport participation and youth psychosocial development (Agans et al., 2016; Lee et al., 2017).

Youth Sport

Millions of youths participate in organized sport across North America and around the world (Camiré et al., 2009b; Garst et al., 2016). In Canada, an estimated 77% of children and adolescents aged 5- to 19-years-old participate in organized sports each year according to their parents (ParticipAction, 2020, p. 59). As a global leader, Sport Canada strives to enhance the sport experience for all Canadians including youth sport participants (Government of Canada, 2020). Under the current Canadian Sport Policy, five objectives align to increase the number and diversity of Canadians participating in sport. Beyond competition and elite-level development, the Canadian sport policy reflects the broader goals of sport for youth through objectives related to the introduction to sport, recreational sport, and sport for development (Government of Canada, 2022). These three objectives highlight the importance of sport for health and wellness, as well as social interaction and development, enjoyment, relaxation, and the promotion of positive values, thus promoting positive youth development overall (Government of Canada, 2022).

Youth sport and physical activity has been extensively researched as an avenue for addressing risk and improving developmental outcomes of children and youth, as it is a setting that induces interest, excitement, and enjoyment for participants (Mageau & Vallerand, 2003). Physical activity for school-aged children and youth is an important protective factor associated with positive physical and mental health outcomes (Biddle & Asare, 2011; Kwak et al., 2009; Taliaferro et al., 2010). In addition to health-related benefits, both physical activity and sports participation are positively associated with social, psychological, and academic benefits, as well (Taliaferro et al., 2010). Social benefits include building positive relationships with coaches, learning teamwork and social skills, and developing new friendships. Increased emotional

control, self-confidence, enjoyment of exploration and discipline are among the many personal and psychological benefits (Holt et al., 2011). Academic benefits associated with physical activity and sport participation include increased school engagement and academic achievement among middle and high school students (Beaulac, 2009; Biddle & Asare, 2011).

Organized sports, excluding physical activity programs, have been found to lead to higher positive functioning and greater developmental benefits compared to other types of extracurricular activities (Eime, et al., 2013; Harrison & Narayan, 2003). Organized sport is defined as an activity that occurs outside of school hours and involves physical exertion, a structure or organized setting for training and playing, and competition (Hajkowicz et al., 2013; Swann et al., 2018). When compared to non-sport activities, children and adolescents participating in organized sport have demonstrated higher rates of self-knowledge, emotion regulation and social skills, healthier self-image, and more effective weight management (Hansen et al., 2003; Howie et al., 2010; Linver et al., 2009). Organized sport is also negatively associated with emotional distress as well as many risk-taking behaviours such as smoking, substance use, criminal activity, sexual risk, violence, suicidality, and dropout (Harrison & Narayan, 2003; Mahoney & Stattin, 2000; Modecki et al., 2014; Taliaferro et al., 2010). Decreases in risky behaviour may in part be explained by the high structure found in organized sports. For example, Samek and colleagues (2015) found that the association between conduct disorder and course-persistent antisocial behaviour was smaller for youth who spent time in organized sports than those who did not. Though the effect was small, the same effect was not found for any other extracurricular activity, suggesting that sport participation may offset the risk of developing more pronounced, chronic behavioural difficulties. Thus, sport participation

appears to be particularly important for youth who are most at-risk for negative outcomes (Samek et al., 2015).

Depending on the sport and the environment in which the sport occurs, organized sport may have different structural and contextual-relational factors that contribute to youth development (Eime et al., 2013). For example, Dimech and Seiler (2011) found a further buffering effect of team sport participation, wherein team sport participation was associated with greater reductions in social anxiety compared to individual sport participation or no-sport participation. Other benefits that are specifically related to team sport participation include mental health benefits, greater perceived social acceptance and decreased social isolation, reduced depressive symptoms and body dissatisfaction, greater life satisfaction, higher self-esteem and emotional self-efficacy, and protection against depressed mood associated with school performance (Barber et al., 2001; Boone & Leadbeater, 2006; Gore et al., 2001; Pedersen & Siedman, 2004; Steiner et al., 2000; Taliaferro et al., 2008; Valois et al., 2004; Valois et al., 2008). Team sport participation is also associated with several school-related outcomes including greater school engagement and academic success, cognitive functioning, attention and memory, and classroom behaviour (Beaulac et al., 2009; Biddle & Asare, 2011; Fox et al., 2010; Trudeau & Shephard, 2008).

The link between organized sport participation and positive developmental outcomes for youth is supported by a longstanding history of research in the areas of youth sport psychology and more contemporary research in positive youth development (Weiss, 2016). However, participation in organized sports cannot be assumed to have a solely beneficial impact on development and well-being (Swann et al., 2018; Weiss, 2016). Despite the many benefits of participating in sports, countries like Canada that have traditionally had strong sport cultures, are

experiencing a decline in youth sport participation due to negative experiences within the sport context, particularly as youth grow out of childhood into adolescence (Vital Signs, 2015). In some cases, youth who participate in sports have higher rates of aggression and negative peer interactions (Forbes et al., 2006). A negative effect of sports on mental health has also been noted, particularly among elite athletes (Swann et al., 2018; Taliaferro et al., 2010). Additionally, fewer associations are found between positive health and developmental benefits, and sport participation among disadvantaged athletes (Pate et al., 2000; Taliaferro et al., 2010). Such findings suggest that the benefits of sports participation may be nulled by certain environmental and social factors that are more likely to impact poor and minority youth. Research findings further suggest that negative effects of sport on youth are related to various contextual factors often found in organized sport settings, such as an emphasis on competition to the detriment of having fun, pressure to perform, focus on winning, dealing with performance slumps, having less time to see friends outside the sport context, coping with injuries and stress, negative coach and parental behaviour, high cost, and lack of inclusivity (Bauman, 2016; Swann et al., 2018; Vital Signs, 2015). Although some of these factors are inherent to the sporting context, such as competition and risk for injuries, many of the above-mentioned variables can be addressed and altered to maximize the developmental benefits that sports can offer for all athletes. Furthermore, for most youth who engage in continued sport participation from middle school, through to college, the benefits of sport participation appear to outweigh potential negative effects, particularly for underprivileged youth.

Youth Sport Environment and Youth Development

Youth who spend more time in adult-organized and adult led activities experience more developmental opportunities than those who do not (Linver et al., 2009). Students who

participate in extracurricular activities are less likely to drop out of school or to be at risk of school failure as involvement in extracurricular activities provide opportunities for youth to develop meaningful relationships and emotional connections with members of the school community, thus increasing their sense of belonging (Broh, 2002; Davis & Dupper, 2004; Gottfredson, 2000). Furthermore, youth who engage in one or more sports, or a combination of sport and another extracurricular activity yield more developmental experiences than children who participate in non-sport, or no extracurricular activities (Forneris et al., 2015; Larson et al., 2006; Linver et al., 2009). Adolescents who participate in sports also indicate a desire to learn skills and strategies for managing adversity and building resilience, and perceive sports as an engaging setting for supporting their mental health (Swann et al., 2018).

The youth sport experience is unique in that it provides opportunities for enjoyment while simultaneously working toward a goal (Larson & Seepersad, 2003). Organized sports offer structured and regularly occurring developmental activities within a complex achievement context that requires children to maintain high levels of effort and concentration over time (Larson, 2000). These context-specific features provide youth with opportunities to develop important life skills that will allow them to succeed in other environments, such as effective communication, decision making, goal setting, teamwork, self-regulation, perseverance, and responsibility (Danish et al., 2004; Danish et al., 1993; Dworkin et al., 2003; Gould & Carson, 2008; Hellison, 2011). Compared to other organized youth activities, such as faith-based and service activities, academic, vocational or community activities, or fine arts activities, participation in sport is associated with higher reported self-knowledge, emotion regulation skills, self-esteem, social skills, problem solving and goal attainment (Holt & Neely, 2011). Additionally, sports provide significantly more opportunities for learning experiences related to

initiative, emotion regulation and teamwork (Holt & Neely, 2011). Although sports participation does not guarantee positive outcomes for all youth, extensive evidence has shown that the sport context is associated with myriad developmental outcomes related to physical, social, psychological, emotional, and intellectual development (Garst et al., 2016). Such experiences appear to be unique to the youth sport context when compared to school and other adult-led organized youth activities. The youth sport context thus appears to be a unique and favorable environment for facilitating PYD. To this end, various theoretical models have been elaborated to describe key program characteristics and propose frameworks for effective programming to foster positive developmental outcomes (Côté et al., 2014; Gould & Carson, 2008; Lerner, 2004; National Research Council, 2002; Petitpas et al., 2005).

Positive Youth Development

Various frameworks for conceptualizing PYD and measuring PYD outcomes have been developed. The model with the most empirical support is the Five Cs model developed by Lerner and colleagues (2005), where PYD is defined as the acquisition of the five Cs, which refer to character, caring, competence, confidence, and connection. The manifestation of all five Cs leads to the emergence of a sixth C, termed contribution, whereby a youth who is thriving is thought to be able to contribute to society in a productive manner (Lerner et al., 2015). Lerner and colleagues (2005) hypothesized that positive development occurs when youths' strengths are aligned with growth-promoting ecological resources, such as family, school, and community resources. Ecological resources that promote growth and positive development among youth may occur in the youth's daily environment, or may be provided through specific types of programing, such as extracurricular activities including after school programs or youth sports.

In addition to the Five Cs model, other frameworks have examined contextual features of youths' environments that contribute to PYD. The Developmental Assets Framework is another framework that has been widely used to examine personal assets and contextual features of the environment that contribute to PYD (Search Institute, 2005). This framework outlines 40 internal (i.e., capacities skills and values) and external assets (i.e., opportunities for support) that youth require to develop into healthy, caring, and responsible adults. The authors of the Developmental Assets framework posit that youth are more likely to thrive and less likely to engage in risky behaviours based on the number of assets available to them (Search Institute, 2005).

Further research has identified a set of youth program (e.g., extracurricular programs) features that foster PYD. Eccles and Gootman (2002) outlined eight contextual characteristics ranging from safe and health-promoting facilities to opportunities for skill building and supportive relationships. Meanwhile, Lerner's (2004) Big 3 program characteristics that promote PYD include, positive and sustained adult–youth relations, life skill building activities, and opportunities for community involvement and leadership.

The frameworks described above have been applied to the study of PYD in the context of organized and adult-led activities, like after-school programs (Holt & Neely, 2011). Within each framework, opportunities for positive outcomes increase as more ecological resources or environmental characteristics are present within the program environment and accessible to the participating youth. Research findings supporting this hypothesis (Strachan et al., 2009a as cited in Holt et al., 2020), have isolated three key features that must be present in youth sport programs; namely an appropriate setting for training, opportunities to develop physical, personal, and social skills, and access to supportive interactions within the proximal and distal sport community (Holt et al., 2020). Given that youth spend a significant amount of time in organized

activities, with sport being the most popular extracurricular activity among children and adolescents, the youth sport context has consistently emerged as an effective vehicle for fostering PYD (Fraser-Thomas et al., 2008; Guèvremont et al., 2008; Larson, 2000). However, early PYD frameworks were not developed in the sport context, and therefore do not account for some of the unique features inherent to the sport context, such as competition (Holt et al., 2017).

Evolution of PYD through Sport

Lerner's original model, among other early PYD frameworks, failed to account for features of PYD that are unique to the sports context, thus various researchers developed PYD frameworks for planning and implementing youth sport programs that incorporate features unique to the sport context (Holt et al., 2017). For example, youth sport programs should follow a clear structure and include opportunities to develop positive relationships with caring adults (Camiré et al., 2012; Petitpas et al., 2004). Meaningful, autonomy supportive relationships and clear program structures provide the context for youth to acquire life skills. Effective sport programs must also create opportunities for youth to learn life skills that can be generalized to other life domains and further enhance developmental outcomes (Camiré et al., 2009a). Life skills are defined as "internal personal assets, characteristics, and skills such as goal setting, emotional control, self-esteem and hard work ethic that can be facilitated or developed in sport and are transferred for use in non-sport setting" (Gould et al., 2013, p. 259). The idea of transfer is central to the notion that the sport context is an effective vehicle for PYD.

Petitpas and colleagues (2005) posit that PYD is most likely to occur when youth, a) engage in a desired activity within an appropriate context for self-discovery, b) are surrounded by positive external assets (e.g., caring adults), c) acquire internal assets (e.g., life skills), and d) benefit from the findings of ongoing research and program evaluation. Gould and Carson (2008)

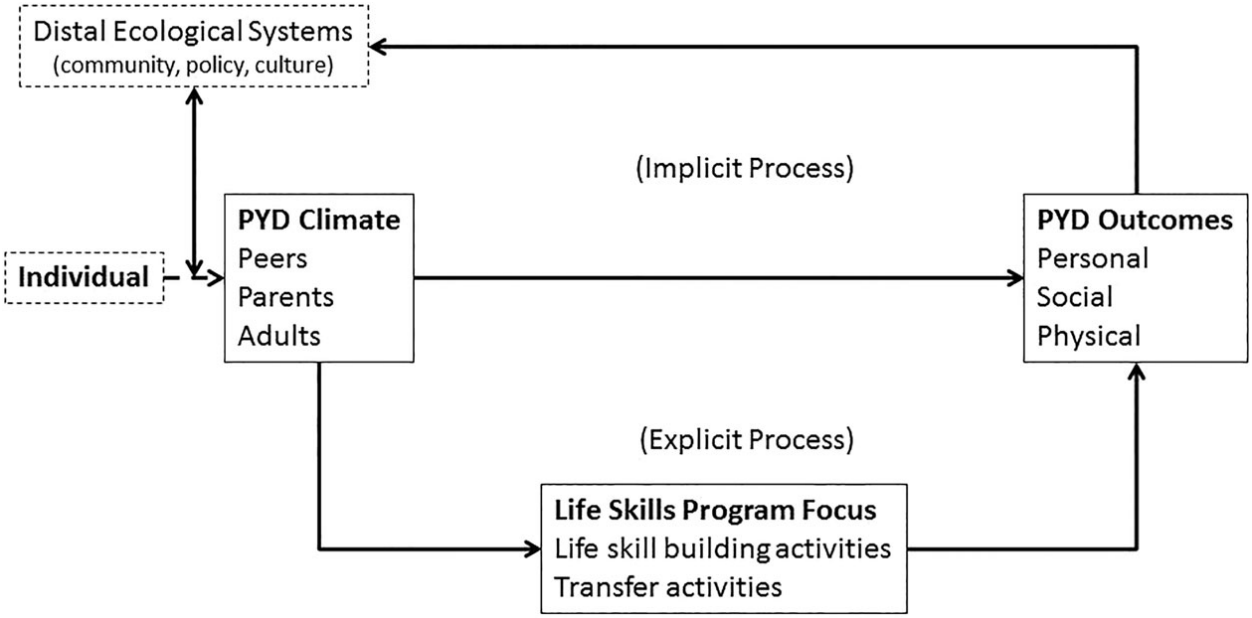
developed a heuristic model to explain how life skills are coached through sports. Model components focus on a) the pre-existing make-up of athletes based on internal and external developmental assets, b) the sport experience created by coach competencies and methods for teaching life skills, c) social environments and how they impact life skills development, d) positive and negative outcomes and the development of life skills associated with sport participation, and e) the transfer of life skills learned in the youth sport context to everyday life (Gould & Carson, 2008). A third framework developed by Côté and colleagues (2014), called the Personal Assets Framework (PAF) proposes that youth sport programs should consider three dynamic elements in order to foster PYD: a) the nature of the sport activities, b) the nature of the relationships formed in the sport context, and c) nature of the physical and social environment (Vierimaa et al., 2017). These authors suggest that when all dynamic elements are appropriately aligned, they generate changes and personal growth in four C areas (i.e., confidence, competence, connection, and character) (Côté et al., 2010), which in turn facilitate three long-term outcomes: a) attainment of sport expertise, b) life-long participation in sport and physical activity, and c) personal development and thriving across life contexts. These early models of PYD through sport developed by Petitpas et al. (2005), Gould & Carson, (2008), and Côté et al. (2014) all incorporate context specific elements unique to the sport context and emphasize the transactional process between athletes' pre-existing personal assets and the sport environment. However, all three models are limited in their explanatory power as they do not fully explain the mechanisms through which youth learn life skills and they have yet to be extensively empirically tested (Holt et al., 2017).

A Grounded Theory of PYD Through Sport

Holt and colleagues (2017) sought to evaluate and synthesize the existing knowledge base and create a comprehensive model of PYD through sport. The authors proposed a framework for PYD through sport that is grounded in the growing body of literature related to PYD in the sport context and incorporates the key features of existing PYD through sport models. This model was developed with a specific focus on the program delivery level of sport, wherein, the aim is to identify and test relationships within specific youth programs (e.g., programs provided by schools or clubs) rather that addressing the organization of entire sport systems or developmental pathways of the athlete (Holt et al., 2017). The entire model is couched in a social-ecological perspective wherein the sport context is viewed as a microsystem that may influence and be influenced by the broader macrosystem (Lerner et al., 2015). The result is a grounded theory that organizes extant literature into a comprehensive model that addresses both individual and environmental factors from a relational developmental systems perspective, while providing a framework to test hypotheses regarding the mechanisms associated with the attainment of established PYD outcomes through sport participation. Thus, while PYD outcomes have become the focus of much contemporary PYD research, this model highlights the importance of addressing other key contextual factors that can explain and influence the extent to which youth may achieve these outcomes, including the broader environment that surrounds the sport context, and relational features embedded within the sport context.

Figure 1

Model of PYD through Sports from Holt et al., 2017



Within the Holt et al. (2017) model, three distinct levels emerge: the macrosystem, the microsystem and the individual level. The macrosystem refers to the distal ecological systems in which sports programs are located, such as within a school or a community setting, a specific culture or set of policies. The microsystem, termed the PYD climate, is the sport program which is characterized by interactions between individuals participating in the program, including the athletes, coaches, peers and parents. Finally, the characteristics of individuals who enter sports programs including both socio-demographic and individual difference variables, may also influence youths' acquisition of PYD outcomes.

Macrosystem: Distal Ecological Systems

Finding theoretical roots in ecological systems theory, PYD macrosystems can be understood as the distal levels of human ecology that indirectly influence behaviours of individuals and microsystems (Holt et al., 2020). The relationship between individuals and their broader context is bidirectional (Lerner et al., 2004), thus it is necessary to consider individuals

as part of a broader set of social, political, and economic contexts (Holt et al., 2020) to achieve a holistic understanding of their development. In reference to sports, the macrosystem may refer to the institutional structures in which the sports programs exist, such as community or school leagues, recreational or competitive sports. Sport culture and policy are also elements of the macrosystem that may have a significant impact on the functioning of the sport microsystem and the extent to which athletes can derive benefits from the sport programming. For example, a culture that emphasizes winning at all costs may ultimately increase the risk of injury or poor mental health outcomes that outweigh the potential benefits of sport participation (Reese et al., 2012; Whatman et al., 2018). While the macrosystem may have a significant indirect impact on PYD outcomes, researchers rarely examine questions regarding societal, economic, or political states or events on the youth sport context. The grounded model of PYD through sport even emphasizes that the macrosystem is not the main focus for understanding of PYD outcomes because the effects happen so upstream. However, as society experiences increasing disruptions to daily life due to climate change or public health crises, for example, research questions related to these distal forces become increasingly relevant.

Microsystem: PYD Climate

Positive developmental outcomes are most likely attained when youth sport contexts are appropriately structured and intentionally designed to promote fun and to facilitate learning (Brunelle et al., 2007; Merkel, 2013). To this end, researchers have focused on developing programs that harness the potential of the youth sport context by creating contextual and programmatic structures, such as mastery-oriented motivational climates, that maximize opportunities for PYD (Danish et al., 2002; Hellison & Wright, 2003; Weiss et al., 2013). Holt et al. (2017) hypothesized that exposure to a PYD climate in the sport context enables youth to

attain PYD outcomes through implicit or explicit teaching and learning mechanisms. The *PYD climate* refers to the social contextual features of the youth sport context that make up the microsystem. It is defined as a social environment that is made up of empathetic relationships with coaches, positive peer interactions, and supportive parental involvement (Holt et al., 2017). Youth gain experiences that allow them to achieve positive developmental outcomes through the various relationships that make up the PYD climate (Holt et al., 2017). The *PYD outcomes* are the positive outcomes that youth gain through their involvement in sports, either through implicit or explicit learning experiences (Holt et al., 2017). Thus, it is possible for implicit learning to occur if the PYD climate is suitable. Meanwhile, Holt et al. (2017) also propose a mechanism through which explicit learning occurs, consisting of the implementation of a *life skills program focus* which incorporates life skill building activities and transfer activities that promote the transfer of skills learned in the sport context to other life domains.

Many skills required to be successful in sports and to achieve PYD outcomes are skills that are also required and practiced in other settings. Through modeling and practice, the sport context represents an environment in which youth may learn important life skills that may be transferred to other environments, such as at home, at school or in the community (Danish, 2002 in Bodey et al., 2009). Life skills learned through sport are skills that promote general life success, and school success in the case of adolescent athletes. These skills include planning, self-discipline, goal setting, problem-solving, emotional control, and performing or persevering in challenging situations, among others (Gould et al., 2013). Life skills must be explicitly taught so that athletes may understand how these skills apply and may be transferred to a different setting (Bodey et al., 2009). Athletes recognize that sport participation allows for the development of various life skills (Camiré et al., 2009a). As well, coaches, parents and program directors are

often concerned with the instruction of transferable life skills that can be taught within the sports setting but that can be applied to other settings (Gould et al., 2013). Life skills instruction has taken many forms since its inception in sport psychology, with effective coaches recognizing the importance of explicitly teaching life skills and some even making direct connections between skills learned in the sport context and the application of those skills in other settings, (Camiré et al., 2012). Meanwhile, other coaches assume that life skills transfer occurs through osmosis (Camiré & Trudel, 2013; Gould & Carson, 2010). However, transfer from one setting to another does not occur automatically, and the extent to which transfer occurs will depend on various contextual factors in the sport setting, such as the program structure, the coaching philosophy, and the quality of the coach-athlete relationship (Bean & Forneris, 2017; Gould & Carson, 2008; Mageau & Vallerand, 2003).

When the PYD climate is seen as a network of positive social connections through which athletes either implicitly or explicitly learn life skills, it becomes possible to understand how benefits of sport participation and life skills development may indeed extend beyond the physical and time constraints of a sport setting (e.g., game or practice). As social relationships transcend space and time, youth can hypothetically continue to benefit from the PYD climate even as pauses, extended hiatuses and major disruptions occur to their physical sports participation.

Social Relationships in Sport. The sport context itself is defined by the social contextual features of the program involving multiple players, including peers, parents, coaches, and community members, as well as a specific program structure that is implemented by coaches and administrators (Holt et al., 2017). Thus, for youth who participate in sport, the sport context allows them to extend their social world and benefit from different types of social support. Athletes who perceive and receive high quality social support show high levels of participation,

self-confidence, and performance, and well as lower rates of burnout and quicker recovery from injury (Bianco & Eklund, 2001; Holt & Hoar, 2006; Rees, 2007). Additionally, researchers are increasingly exploring the influence of team dynamics and social groups in sport on positive youth development and social identity, noting that athletes who feel a strong sense of belonging demonstrate higher levels of PYD (Bruner et al., 2017). Bruner et al. (2017) highlight the potential benefits of early sports participation to identity formation, wherein athletes who felt a strong bond and sense of belonging to the team reported greater PYD outcomes, including but not limited to personal and social development, and fewer negative experiences. Overall, the sport context represents a complex network of relationships and dynamics that work together to foster a sense of identity for youth and of belonging to a unique and supportive community (Bruner et al., 2017; Holt et al., 2009; Strachan et al., 2011; Turnnidge et al 2012). In addition to expanding supportive peer relationships, the sport context provides youth with opportunities to develop myriad relationships, to access positive role models and to benefit from a consistent community of adults, including coaches, parents, and administrators, who are present to support athletes' individual needs.

Peer Relationships. Peer relationships are perhaps the most salient of the social relationships that define the youth sport context. While peer relationships are often characterized as PYD outcomes in and of themselves, Holt et al. (2017) view peer relationships as a key component of the PYD climate which may promote PYD outcomes. Indeed, McGuine and colleagues (2021) hypothesize that social connectedness between athletes critically leads to better mental health outcomes. Specifically, peer relationships in the sport context are unique due to their enduring nature and ability to foster a sense of belonging and fellowship that is not often

found outside of the sport context (Bruner et al., 2017; Holt et al., 2017; Olushola et al., 2013; Schilling et al., 2007; Strachan & Davies, 2015; Turnnidge et al., 2012).

Another feature of the youth sport environment allowing athletes to expand their social network and experience varied interactions is the multitude of social experiences inherent in the youth sport context. For example, beyond practices and games, athletes may participate and interact through fundraising events, pre- or post-season team retreats, or social gatherings, like parties (Schilling et al., 2007; Turnnidge et al 2012). Each of these experiences also differs in nature such that they allow for friendship building and skills practice among peers to occur under different social, psychological, and emotional circumstances. Additionally, older athletes who have graduated from the team may seek to coach or act as a mentor to younger athletes, often developing impactful mentor-mentee relationships (Olushola et al., 2013; Schilling et al., 2007).

When asked about their peer relationships, athletes report that sports provide opportunities to develop close friendships built on common interests, in an enriching environment that is not just about sports (Bean et al., 2014; Fraser-Thomas & Côté, 2009). Both the team and individual youth sport context allows youth to expand their social network and to create special relationships with peers they otherwise may not have contact with, such as older or younger aged youth, or youth from different social and economic backgrounds (Armour, 2013; Fraser-Thomas & Côté, 2009; Holt et al., 2009). As a result, the sport context is particularly socially rewarding for youth participants (Bean et al., 2014). Another key feature of the social context provided by sports programs is the opportunity to practice positive teamwork, role modeling and leadership in a safe, structured, and nurturing environment (Bean et al., 2014; Fraser-Thomas & Côté, 2009; Harrist & Witt, 2012; Holt et al., 2017; Turnnidge et al., 2012). Such opportunities allow youth to practice and further develop life skills, such as,

communication skills, responsibility, trust, and the ability to care for others in a meaningful way (Holt et al., 2009; Hayden et al., 2015; Strachan et al., 2011). Some sport cultures, however, give rise to jealousy and negativity between athletes, or the modelling of poor work ethic by some peers (Fraser-Thomas & Côté, 2009), thus limiting the acquisition of PYD outcomes. Nonetheless, when appropriately designed and administered, youth sport programs set the stage for peer interactions that give rise to positive social norms and sportpersonship (Starchan et al., 2011; Turnnidge et al., 2012), wherein occasional disagreements between peers create opportunities for learning life skills that can generalize and benefit athletes well into adulthood (Holt et al., 2009; Hayden et al., 2015; Turnnidge et al., 2012). Overall, peer interactions allow for positive skill development, serving youth well in other contexts and into adulthood.

Coach-Athlete Relationships. A key contextual factor that is common to all models of PYD is the presence of an important adult who serves as a positive model (Côté et al., 2014; Eccles & Gootman, 2002; Gould & Carson, 2008; Lerner, 2004; Petitpas et al., 2005). Having access to strong, positive, and encouraging relationships with important adults is an essential developmental need for youth (Davis & Dupper, 2004). Such relationships promote social, emotional, and academic development of youth, particularly for those who are most at risk for negative developmental outcomes (Falçao et al, 2020). Additionally, youth enjoy getting to know their coaches as people rather than simply authority figures (Armour et al., 2013). Coaches who can effectively relate to and communicate with players can foster greater levels of athletic improvement, life skills development and enjoyment of the youth sport experience among their athletes (Falçao et al., 2017; Harrist & Witt, 2012). As such, educators play a vital role in youth development and often underestimate the powerful impact they have on the youth with whom they work (Corbin, 2001; Davis & Dupper, 2004).

Coaches are the central adult figure in the sport context. Within carefully structured social environments, coaches have the greatest potential to foster PYD outcomes by providing the foundation for caring and supportive relationships with their athletes (Falçao et al., 2017; Falçao et al., 2020; Gould & Carson, 2008; Holt et al., 2017; Petitpas et al., 2005). These relationships may be particularly influential for marginalized youth, or for youth who have had difficulty building relationships with adults in other settings. Sport participation in high school is often a choice, and it may represent the first experience in which certain youth have had the opportunity to interact with an adult within a context that is intrinsically motivating and inherently enjoyable for them (Swann et al., 2018); in the sports setting youth-adult interactions are not defined by distress and failure in the same way that student-teacher interactions can be. Furthermore, for many athletes, coaches represent attachment figures that are stronger and wiser than many of the adults commonly encountered in other settings (Davis & Jowett, 2014; Mageau & Vallerand, 2003).

Youth who perceive their coaches to be knowledgeable, trustworthy, and supportive, are more likely to feel connected and to communicate about difficult issues, such as mental health, or difficulties at school (Falçao et al., 2020; Swann et al., 2018). Moreover, athletes who feel secure, comfortable, and cared for, will seek support from their coaches when they are having difficulty both in sports and in other domains, like school, work, and home (Davis & Jowett, 2014; Swann et al., 2018). Lower levels of interpersonal conflict between coaches and athletes are also associated with athletes' perception of well-being and feelings of positive affect, whereas high levels of interpersonal conflict are associated with feelings of negative affect (Davis & Jowett, 2014). In sum, coaches play a unique and particularly salient role in the youth sport context. As natural mentors, role models, attachment figures, and teachers, they are key

socializing agents during adolescence and have the greatest influence on the youth sport experience, suggesting that they are in the best position to foster PYD outcomes (Trottier & Robitaille, 2014).

Supportive Parents. For many youth sport participants, parental involvement whether extensive or limited is a key component to their ability to play their sport and, in some cases, vital to the success of the sport program itself (Harwood & Knight, 2015; Harwood et al., 2017; Strachan et al., 2011). Given their importance, parents who support their youth's involvement in sports in positive ways can significantly influence the acquisition of PYD (Harwood & Knight, 2017; Holt et al., 2009; Holt et al., 2017). From a practical perspective, parents provide important logistical support by allowing and helping their child to access the sport (Harwood & Knight, 2015; Knight et al., 2017). For example, younger youth rely entirely on their parents to be able to participate, whereas in certain communities, parents provide the sole means for athletes to be able to travel to and from their sport facility. In some settings, parental involvement through volunteerism and fundraising, is also vital to the success of sport program; indeed, it is frequently expected by coaches in elite programs (Strachan et al., 2011). Additionally, many parents take interest in their child's sport involvement, and positive parent engagement is often encouraged by coaches and program staff (Fraser-Thomas & Côté, 2009; Harwood et al., 2017; Knight et al., 2017; Strachan et al., 2011). Parenting style may play an important role in providing emotional support as well as encouraging youth to engage in continued practice of their sport, increasing motivation and supporting socio-emotional ups and downs youth may face (Harwood & Knight, 2015; Harwood et al., 2017; Knight et al., 2017). More directly, parents may also help their children develop life skills such as conflict resolution and prevention and communication skills, as well as reinforce values like sportspersonship,

personal responsibility, initiative, and work ethic (Dohme et al., 2021; Gould et al., 2007; Holt et al., 2009). However, parents' over-involvement can sometimes have the unwanted effect of putting more pressure on the child to excel, or to stay in the sport despite a loss of interest (Fraser-Thomas & Côté, 2009; Harwood & Knight, 2015; Harwood et al., 2017; Strachan et al., 2011). Nonetheless, when appropriately engaged, parents are central for promoting PYD in the sport environment through their role modeling and engagement with the team during meetings, games, and other team activities (Dohme et al., 2021; Gould et al., 2007; Harwood & Knight, 2015; Harwood et al., 2017; Holt et al., 2009; Knight et al., 2017).

Youth sport participants, their parents and their coaches all recognize and appreciate the importance of parental support in the youth sport context (Camiré et al., 2009a; Camiré et al. 2009b; Fraser-Thomas & Côté, 2009; Gould et al., 2007; Harwood & Knight, 2015). For example, many athletes interviewed in a 2009 study by Camiré et al. indicated a belief that they receive adequate support from their parents and felt they could negotiate many aspects of their sports participation, allowing them to develop a sense of agency, and maintain high levels of intrinsic motivation. Athletes also report that significant others, such as parents, influence their work ethic allowing them to further excel in their chosen sport (Fraser-Thomas & Côté, 2009). Furthermore, positive parental involvement can make way for youth sport participants to develop a special bond with their parents, either because of the nature of their support in the sport context which may fall outside of the usual parent-child dynamics, or from their emotional support and shared highs and lows related to the sport experience (Fraser-Thomas & Côté, 2009).

Coaches believe that parental involvement is invaluable to PYD and thus make significant efforts to engage parents and involve them in various aspects of the youth sport context (Gould et al., 2007; Koh et al., 2017). Coaches may also, at times, leverage parental

involvement as a means to increase motivation among athletes and to improve the coach-athlete relationship, as parents can critically influence the quality of these relationships (Gould et al., 2007; Harwood et al., 2017; Jowett & Timson-Katchis, 2005). Parents themselves perceive that their support contributes to PYD outcomes for their youth by providing emotional, financial, and logistical support (Camiré et al, 2009b; Harwood et al., 2017). They further recognize that the support they provide must evolve over time to best meet the needs of their developing child (Camiré et al., 2009b; Harwood & Knight, 2015). Critically, as youth evolve within their sport environments parents play a significant role in the acquisition of PYD outcomes by reinforcing teachable moments from sport in the home environment thus helping their youth benefit from generalizing learned skills over time (Dohme et al., 2021; Koh et al., 2017; Neely & Holt, 2014).

PYD Outcomes

Upon review of the PYD outcomes identified within the youth sport and PYD domains it is apparent that while outcomes may be labelled or organized differently across different models of PYD (e.g., 5Cs of PYD, Developmental Assets framework) there is significant overlap between the models regarding the variables that indicate youth thriving. The meta-synthesis by Holt et al. (2017) gave rise to three PYD outcome domains: a) personal, b) social, and c) physical outcomes. Numerous outcomes emerged in the personal domain, ranging from psychological and emotional benefits to academic and cognitive benefits, including outcomes such as self-regulation, positive self-perceptions and attitudes, perseverance, hard work, stress management, independence, and personal responsibility, among others. These outcomes are closely tied to Lerner's Cs of Confidence, Character, and Competence (Lerner et al., 2005). Social outcomes were related to broad categories of communication, leadership, teamwork, and opportunities to make friends. The social outcomes in this model overlap with Lerner's constructs of Connection,

Contribution and Caring (Lerner et al., 2005). Physical skills included fundamental movement skills, and skills for healthy and active living. These skills are generally considered to be inherent outcomes of sport participation and are not typically included in other conceptualizations of PYD (Holt et al., 2017).

Overall, PYD outcomes or the personal, social and physical benefits outlined by the grounded theory of positive youth development through sports are all important individual assets that have been broadly shown to contribute to overall well-being, mental health and resilience, as previously described (Danish et al., 2004; Fraser-Thomas et al., 2005; Gould & Carson, 2008; Hajkowicz et al., 2013; Hellison et al., 2008; Holt et al., 2017; Jones et al., 2011; Larson, 2000; Lerner et al., 2005; Lerner et al., 2015; Swann et al., 2018). Participation in organized sport is an important protective factor for mental health, wherein losing access to sports during the COVID-19 pandemic was associated with higher rates of anxiety and depression among adolescents, particularly among females, team sport participants, and youth sport participants from lower income communities (McGuine et al., 2021). As such, youth who regularly participate in organized sports may be at risk for relatively greater negative impacts in the absence of their sport and of a PYD climate that provides social support and opportunities for growth when coping with a crisis.

Sport Interruption

Interruption to sport is not typical among youth athletes. Most commonly, athletes who experience interruption to their sport experience are those who have suffered a physical injury preventing their ability to participate (Leena et al., 2012). Thus, the psychological consequences of injury and the challenges faced by athletes when returning to their sport have been well documented. Following injury, youth athletes often want to continue to play, and their coaches

allow them to do so, even if it is not in the youths' best interest (Whatman et al., 2018). Athlete's motivation to play through injury may be due to a fear of letting the team down, fear of feeling separated from the team, or because of pressure to win from themselves, teammates, or their coaches (Whatman et al., 2018). In returning to play after an interruption due to injury, the psychological challenges faced by many athletes include a loss of confidence, fear of re-injury, pressure to perform, and feeling isolated or disconnected from teammates (Podlog & Dionigi, 2010). Furthermore, findings of a recent scoping review suggest that athletes with a stronger athletic identity, defined as "the exclusivity and strength with which an individual identifies with the athlete role, and looks to others for confirmation of that role" (Brewer et al., 1993), experience more severe depressive symptoms and other negative psychosocial outcomes following an injury that prevents them from playing their sport (Renton et al., 2021). As such, it is likely that an interruption to sport like the COVID-19 pandemic will have varying social, emotional, and psychological impacts on youth athletes depending on multiple factors that influence their relationship to their sport. Examples of such factors include years playing the sport, level of competition, sport-related goals, and friendships in the sport context.

Given the known psychological impact of sport injury and subsequent interruption on athletes, coaches are increasingly adopting multiple approaches to help athletes cope and to meet individual athletes' psychological needs. Such strategies include open communication and a coordinated team approach to treatment, as well as social support, goal setting, and positive thinking and modeling for the athlete and treatment team (Podlog & Diogini, 2010). Furthermore, intentionally designed psychological interventions such as those involving skills like guided imagery, goal setting, and relaxation improve coping and psychological outcomes for injured players (Reese et al., 2012). Though promising, such strategies are often resource

intensive, in that they require time, education and/or extra staff to implement; resources that are not commonly available in the youth sport setting. Moreover, these resources may be restricted to a small number of athletes who require support to cope with an injury even in settings where psychological coping strategies are considered important and are intentionally implemented. Coaches' ability to quickly re-orient these resources in the context of an event such as the COVID-19 pandemic remains unknown, in addition to the extent to which they could feasibly provide support to an entire team of athletes who have simultaneously experienced a significant sport interruption.

COVID-19 Pandemic: Changing the Macrosystem

On March 11, 2020, the World Health Organization (WHO) declared the coronavirus a global pandemic; municipalities across Canada, and the world, issued states of emergency and stay-at-home orders shortly thereafter. To limit the spread of COVID-19, businesses, offices, schools, entertainment venues, events, and sports gatherings were forced to shut down. The COVID-19 pandemic has had a far-reaching impact on all aspects of life for adults and young people alike. For youth, adapting to online learning, life in quarantine, limited social contact with peers and the absence of organized sports meant uncertain outcomes for their physical and mental health, and overall well-being.

Based on the grounded theory of PYD through sport (Holt et al., 2017), it may be assumed that such a shock to the ecological system in which sport programs are implemented would significantly influence the extent to which youth benefit or incur risk from participating in sport. Multiple research studies have addressed more narrow systemic concerns by examining programs structures and climates to the extent that they promote PYD and skill acquisition in youth sport participants (Gano-Overway et al., 2009; Gerabinis et al., 2018; Holt et al., 2016).

However, broad macrosystem level concerns have yet to be investigated, likely due to the emphasis commonly placed on the microsystem such as defined in Holt et al.'s grounded theory for PYD through sport. Furthermore, a global health crisis such as the COVID-19 pandemic, causing a total stoppage of all sporting activity is unprecedented. Though decades ago, such an event may have led to a complete disconnect from the sport environment, the same assumption can no longer be made in a world where youth are constantly connected to one another through social media and other means of online communication. As such, it is possible that while the distal ecological system has drastically changed the microsystem that defines the youth sport setting, youth can continue to interact with the PYD climate and incur benefits.

COVID-19: Impact on Youth Sport Context

Youth sports settings in Canada, much like the rest of the world, were unexpectedly impacted by the COVID-19 pandemic. School closures led to the stoppage of all extracurricular activities; non-school related hobbies and activities shortly followed. Organized school sports, community sports and sports leagues nation-wide had their seasons postponed or cancelled in the spring of 2020 and, for some, these postponements lasted until the summer of 2021 and beyond. Furthermore, restrictions in public places led to closures of sports leagues, community centers, gymnasiums, and training facilities in the early stages of the pandemic, ultimately limiting youth access to sport (Latella & Haff, 2020). To slow the spread of COVID-19, limited social contact meant young athletes could not engage in or start their sports as planned. For example, sports seasons that were ending, ended abruptly; seasons that were set to begin, held off; and scheduled games were either rescheduled or cancelled. Youth sport playoffs and tryouts were also affected by the pandemic in the spring and summer of 2020. For many youths, the impact at the time likely felt immeasurable. For others, COVID-19 meant the end of sport participation altogether,

as various jurisdictions reported a significant decrease in participation as sports resumed (Aspen Institute, 2021).

As knowledge of how to stop the spread of the virus became available, new health and safety measures were implemented in places of business, retail, and leisure. Some areas across Canada, such as Ontario, Quebec and British Columbia, allowed sports to resume in the summer of 2020 with strict guidelines and restrictions on the way athletes were allowed to engage with each other (Athletics Ontario, 2020; RSEQ, 2020; ViaSport British Columbia, 2020). Individual sports, such as golf or tennis, where social distancing is more feasible typically allowed for a smoother transition wherein guidelines could easily be followed. For team and indoor sport settings where physical distancing is difficult, restrictions had a greater impact, even on sports with minimal players. In these settings guidelines required additional face coverings, less physical contact between teammates and athletes from the opposing team, or new rules altogether. As restrictions were defined by individual provinces and municipalities, it became impossible to assess the global impact of restrictions for different team sports or the true scope of their impact on youth sport participants across Canada.

Impact on Athletes. Early research on the impact of the coronavirus pandemic on athletes has focused mostly on professional and elite-level athletes, such as Olympians (Schinke et al., 2020), Spanish football players (Mon-López et al., 2020), football players in Hong Kong (Wong et al., 2020), South-African athletes (Pillay et al., 2020), and NCAA athletes (Graupensperger et al., 2020). Many of these populations were either required to train full-time or continued to have access to some level of resources throughout the beginning of the pandemic. Nonetheless, findings suggest significant and expected impacts of confinement regarding the frequency and intensity of training among high-level athletes (Mon-López et al., 2020). Such

challenges arose due to lack of access to appropriate training supplies and facilities, and team members with whom to practice dynamic, competition-like skills, particularly in the context of team sports (Jagim et al., 2020; Pillay et al., 2020). Moreover, important impacts were observed regarding mental health outcomes among athletes, which appeared to be particularly pronounced among females (McGuine et al., 2021; Pons et al., 2020). Approximately 150% to 250% more mental health concerns were reported in the month of May 2020, among a sample of 37 000 NCAA athletes. Sport psychologists and performance consultants also noted a significantly higher demand for their services since March 2020 (Frank, Fatke, Frank, Förstl, & Hölzle, 2020). To the extent that the COVID-19 pandemic had clear, widespread negative impacts on the sport community at large, it is essential to look beyond the stories made salient in the media. Professional, semi-professional, and college-level athletes undoubtedly experienced challenges regarding their training and well-being despite having continued, yet restricted, access to resources, and opportunities for training and even competition. Comparatively, grassroots youth sport programming was entirely halted for an extended period in most cases. Thus, the data gathered in professional and amateur sport contexts do not generalize and the scale of the impact on the youth sport setting is not well understood.

Impact on Youth Sport Participants. Significantly less attention has been brought to investigating the impact of the COVID-19 pandemic on the youth sport context and youth sport participants at large (Graupensperger, et al., 2020; McGuine et al., 2021); a population for which the ever-changing and ongoing restrictions brought by the COVID-19 pandemic may have been particularly detrimental. As a result of shutdowns, restrictions and social distancing measures, many youths lost access to their existing PYD climate and the benefits that it can provide. Beyond losing access to a venue for physical activity, youth lost direct access to a social context

central to the development and well-being of many youth sport participants, a social network with opportunities for social and emotional development, and access to supportive relationships with adults and to a larger meaningful community. For many youths, sports are a means to connect to others and the interruption to sports, or sport-as-usual, may have represented a loss of their only forum for social contact (Almond, 2020). Additionally, for many young people, sport participation or team membership provides identity through their connection with peers and teammates (Graupensperger et al., 2020). Thus, an interruption to sport may be particularly difficult, and potentially harmful, for the many young people with strong athletic identities.

Conversely, the PYD climate, as defined by strong, and positive social relationships with coaches and teammates (Holt et al., 2017), may have also played a protective role for young people throughout the COVID-19 pandemic, as an added resource on which to rely for support and meaning, during long months of social isolation. Among college athletes, teammate social support and connectedness were associated with higher levels of psychological, social, and emotional well-being throughout the stay-at-home orders (Graupensperger et al., 2020). Physical distancing for these athletes was thus not equivalent to social distancing. It follows that the PYD climate as defined by social relationships within the sport context, may be an important factor for well-being beyond the confines of the field or arena. Additionally, for youths, time spent with family during the COVID-19 stay-at-home orders appeared to be significantly associated with higher levels of physical activity, lower reported loneliness, and better subsequent mental health outcomes (Moore et al., 2020). As parent involvement is a key component of the PYD climate, youth athletes may have been even more likely to rely on their PYD climate networks, including parents, teammates, and coaches, to seek support and increase motivation through the COVID-19 pandemic, despite restrictions placed on their ability to access their sport network in person.

Impact on Mental Health and Well-Being. In addition to the clear physical health and economic problems that have been brought on by the coronavirus itself and resulting public health recommendations, the mental health impacts of the pandemic have been undeniable. Adolescents' and young adults' social and emotional well-being appear to be particularly impacted. A Portuguese study (Branquinho et al., 2020) examined youths' experiences (n= 674) with COVID-19. Participants aged 16-24 years reported more symptoms of distress, depression, anxiety, and loneliness since the beginning of the pandemic (Branquinho et al., 2020). Young people appeared to be experiencing significant concerns not only relating to themselves, both regarding their health and academic implications, but to the health and well-being of loved ones (Cohen et al., 2020; Ellis et al., 2020). Approximately one-third of participating college students surveyed by Cohen and colleagues (2020) agreed or strongly agreed with the statement "I am so anxious about COVID-19 that I can't think of anything else" (Cohen et al., 2020). Cowier and Myers (2020) further suggest there will likely be a new wave of youth that could be at high risk of struggling with mental health challenges, who did not struggle before COVID-19.

The mental health impacts of COVID-19 were also compounded by significant decreases in physical activity, as well as increases in sedentary behaviours. Only 4.8 % of children in a broad Canadian sample were found to meet the movement guidelines during the first month of the pandemic (Moore et al., 2020). Such decreases in physical movement and activity, which are associated with increases in symptoms of depression (Dale et al., 2019), were likely exacerbated by a reduction in outdoor play involving both free play and organized sport. Similar results were found among a Portuguese sample wherein a lack of routine, longer screen time, changes in sleep patterns and lack of physical activity had a significant negative impact on mental health and well-being (Branquinho et al., 2020). Qi and colleagues (2020) further observed that older

children were less active throughout the pandemic and experienced higher levels of distress (Qi et al., 2020). Conversely, physical activity during the pandemic was found to be significantly associated with lower reported loneliness and positive correlations were also noted between family time and physical activity among children and adolescents (Ellis et al., 2020). Thus, it appears that parents, as an integral part of the PYD climate, may have been acting as an important protective factor for youth during the COVID-19 pandemic in the absence of sport or sport-as-usual (Ellis et al., 2020). However, up to one-third of participants recruited by Ellis et al. (2020) reported spending less than 30 minutes per day with their family, further increasing their risk for negative outcomes.

In conjunction with decreased physical activity, significant increases in screen time and social media use were also reported among children, adolescents, and young adults (Ellis et al., 2020, Moore et al., 2020; Munasinghe et al., 2020). Physical distancing and resulting increases in internet use have been associated with lower levels of reported happiness and positive emotions in addition to increased time alone and increased psychological distress, including anxiety and depression, particularly among girls and older adolescents (Munasignhe et al., 2020; Qi et al., 2020). Among adolescents experiencing stress related to the COVID-19 confinement measures, stress levels were associated with poorer adjustment, namely increased reported loneliness, and levels of depression (Ellis et al., 2020; Lee et al., 2020). Moreover, significant increases in feelings of loneliness have been prominently reported by youth in areas with lockdowns and stay-at home orders (Lee et al., 2020). Researchers also noted significant differences in reported loneliness during lockdowns related to sex and perceived social support (Lee et al. 2020). Other research also found reported changes in anxiety and depression related to gender, and internet use (Al Omari et al., 2020). Overall, symptoms of anxiety and depression have been more

common among youth reporting low perceived levels of social support, higher loneliness, and increased time on social media (Ellis et al., 2020; Lee et al., 2020; Qi et al., 2020). It follows that the loss of a regular physical exercise practice and a consistent and supportive PYD climate may have had significant detrimental effects on the mental health and well-being of youth sport participants. In contrast, however, young people reporting the use of coping strategies that decrease screen time and isolation, such as homework completion, family time, relaxation and positivity, routine, staying busy and finding social connection, also reported better mental health outcomes overall (Ellis et al., 2020; Lee et al., 2020; Waselewski et al., 2020). Thus, young people who can harness the potential of their PYD climate in the absence of physical contact, may indeed benefit from their network in ways that preclude the need for group physical activity.

Impact on PYD Outcomes of Youth Sport Participants. Limited research has been conducted to investigate the impact of COVID-19 on youth sport participants. Early research demonstrated that youth sport participants have experienced many of the same negative outcomes as those seen in the general youth population. In one of the largest studies involving youth sport participants, McGuine and colleagues (2021) surveyed 13,000 student athletes in the US to assess mental health, physical activity, and quality of life related to school closures and sport cancellations. The results of the study suggested significant impacts on youth mental health, physical activity and quality of life which differed according to demographic variables. Female athletes reported a higher prevalence of anxiety symptoms, whereas the prevalence of depression symptoms was highest among team sports participants compared to youth who engage in individual sports. Younger athletes (grade 9) were found to be more active than older athletes (grade 11), and quality of life was lowest among athletes from more impoverished communities. Additionally, youth sport participants surveyed by the National Collegiate Athletic

Association (NCAA) in the United States reported emotional concerns related to multiple factors including, fear of exposure to COVID-19 (43%), lack of motivation (40%), feelings of stress or anxiety (21%), and sadness or depression (13%) (National Collegiate Athletic Association [NCAA], 2020). One in 12 athletes surveyed reported feeling so depressed that it was difficult to function "constantly" or "most every day" (NCAA, 2020). Considering these data, though limited, the significant negative impact of the youth sport interruption is undeniable.

From a PYD through sport perspective, the aforementioned findings offer insight into the impact of the COVID-19 pandemic on PYD outcomes for youth sport participants related to their inability to access the sport context, namely the PYD climate. The most evident impacts on PYD outcomes were those seen in the physical domain. Being unable to access training equipment and facilities, athletes engaged in significantly lower levels of physical activity during the early months of the COVID-19 pandemic. As suggested by McGuine et al. (2021), these factors can significantly impact quality of life, particularly among youth athletes who could not access space or equipment at home, or who may have had other responsibilities due to the COVID-19 pandemic, such as childcare of a sibling, which prevented them from being able to stay active and continue to focus on their growth and development. In the personal domain, youth experienced significant mental health and emotional challenges, likely related to their limited access to physical activity and to the supportive relationships that make up the PYD climate and provide opportunities to work on positive thinking, motivation, and effective emotion regulation. The social impact of the COVID-19 pandemic has also been undeniable, as observed through loss of frequent social connection with others and increased feelings of loneliness, which likely exacerbated the psychological impacts of the sports cancellations as suggested by McGuine et

al.'s (2021) finding that youth participating in team sports reported higher rates of depression symptoms.

Despite the relatively limited available data, there is little doubt that the impact of COVID-19 was significant and felt by all stakeholders in the youth sport context, particularly the youth. Social isolation and ever-changing restrictions during the return to play have led to negative outcomes in physical, social, and emotional domains, wherein an entire generation of young athletes have likely experienced a shift in their relationship to their sport and changes in their personal lives due to the interruption of their sport. Nonetheless, much can be learned about the process of PYD through sport in examining aspects of the PYD through sport model and understanding how the PYD climate evolves or adapts in a context where the distal ecological system structures shift dramatically or entirely collapse, such as during the COVID-19 pandemic. Although the negative impacts of the COVID-19 pandemic remain particularly salient, an exploration of how athletes may or may not have relied on the social network embedded in the PYD climate can highlight the strengths or shortfalls of the grounded theory of PYD through sport. Such an investigation also leads to new avenues for research into how sports participation promotes PYD beyond the playing field.

Assumptions and Hypotheses of a Grounded Theory of PYD through Sports

Holt and colleagues' (2017) grounded theory for PYD through sport offers five distinct and testable hypotheses. However, the hypotheses assume that sport practice is ongoing. While the current study does not aim to test any specific hypothesis presented by Holt et al. (2017), these hypotheses provide a helpful frame for exploring PYD through sport in the current global climate. See Appendix A for hypotheses.

From the perspective of the widespread sport interruption caused by the COVID-19 pandemic; the default assumption may be that PYD outcomes can no longer be acquired through sports (Hypothesis 1). In this context, the distal ecological system in which the sport program subsists no longer exists and as such PYD through sport is no longer a relevant concept. If this assumption holds, then one may predict that such a loss of opportunities to engage with the PYD climate and to continue to acquire PYD outcomes may have the effect of producing even more harm than was experienced by an average youth who did not have access to the potentially protective effect of the PYD climate. However, in considering the nature of the PYD climate as defined by Holt et al. (2017), social relationships by their very nature transcend physical contact, particularly when individuals within those relationships can access alternate forms of communication. So, it can be argued that hypothesis 2 holds, simply through different means of maintaining a relationship and implementing both physical activity and life skills programming. This assumes, however, that all parties involved continue to engage in these relationships outside of the traditional sport setting. Following this assumption, hypotheses 3, 4, and 5 can still hold in environments where the traditional sport model is interrupted and warrant further exploration.

Purpose of the Current Study

Using the grounded theory of PYD through sport (Holt et al., 2017) as a guiding framework, the current dissertation explores the impact of the COVID-19 pandemic, and its disruption of sports participation, on youth sport participants and youth sport participants' engagement with the PYD climate (i.e., relationships with teammates, coaches, and parents). A convergent parallel mixed methods design was used, wherein quantitative and qualitative data were collected at the same time (Creswell, 2015). The results of both sets of data were integrated to gain an in-depth and more comprehensive view of the impact of the COVID-19 pandemic on

Canadian youth sport participants. In the quantitative phase of the study, survey data was collected from youth sport participants ages 11 to 24 through an online platform to explore youth sport participants' engagement with the PYD climate during the COVID-19 pandemic, and the potential impact on PYD outcomes, through a grounded theory of positive youth development through sport lens. The specific age group used to define youth is often seen as fluid and defined differently by different research groups and organism. The age group selected for this study was chosen to be intentionally broad to increase the scope of the perspectives being explored, to mirror the education system from which participants were sampled, and to align with the term youth as defines by the UN as a "period of transition from the dependence of childhood to adulthood's independence" (UN, 2013, p. 1). The qualitative phase was conducted in parallel with a subset of participants from the quantitative phase to help further understand the quantitative results. Together the integrated findings of this mixed methods study add to the existing literature by investigating specific aspects of PYD through sport in the context of a major change to the distal ecological system in which sport programs exist, specifically the significant and widespread sport interruption and restrictions caused by the COVID-19 pandemic.

Research Questions

Quantitative Research Questions

1. How often do youth sport participants communicate with individuals within the PYD climate (i.e., coaches and teammates) during COVID-19 restrictions, in the absence of formal sport practices and games, and what is the content of their communication?
2. What are youths' emotional reactions to the COVID-19 restrictions placed on their sport?

   a. Is there a relationship between youths' emotional reactions and their perception of emotional support offered by different members of the PYD climate (i.e., coach, teammates, and parents)?

3. Is there a relationship between youths' engagement with the PYD climate during the COVID-19 restrictions and their social-emotional outcomes?
   a. Is there a relationship between the frequency of communication with individuals in the PYD climate (i.e., coaches, teammates) and 1) youths' perception of support, and 2) their emotional reaction to the COVID-19 restrictions placed on their sport?
   b. Is there a relationship between the content of communication had with individuals in the PYD climate (i.e., coaches, teammates) and 1) youths' perception of support, and 2) their emotional reaction to the COVID-19 restrictions placed on their sport?

Qualitative Research Questions

4. How do youth sport participants describe their engagement with the individuals within the PYD climate (i.e., coaches, teammates) in the absence of formal sport practices or games?
5. Are the sport interruptions and restriction caused by the COVID-19 pandemic related to youth sport participants' PYD outcomes, emotional well-being, and coping?

Mixed Methods Questions

6. To what extent do the qualitative results help explain and add context to the quantitative survey results?

7. What can be learned about PYD through sport by comparing and integrating both data sets: the quantitative survey data on communication with the PYD climate and youths' emotional experience during COVID-19 restrictions, and the qualitative data about athlete coping and well-being?

Chapter III

Method

Research Design

The current research consists of an exploratory study using a convergent parallel mixed methods design (Creswell, 2015). The mixed method design was selected to obtain more data and gain a comprehensive view and understanding of the COVID-19 pandemic's impact on youth sport participants. Specifically, given the scope and scale of the impact of the COVID-19 pandemic broadly, but also on youth and youth sports, a mixed methods approach was deemed most appropriate to explore the situation in-depth while covering a breadth of challenges related to the problem. As a reaction to the unprecedented and far-reaching nature of a global pandemic, asking a narrow research question to be answered using quantitative or qualitative methods in isolation did not fit the essence of the questions arising at the time of conception for this study. Thus, the worldview and research philosophy of pragmatism was adopted. Pragmatism is a problem-oriented paradigm that is common in mixed methods research as it invites the exploration of different kinds of scientific methods, deeming the best research methods as those that will be most effective in answering the research questions (Creswell & Plano Clark, 2017; Weaver, 2018). As defined by Weaver (2018), "the pragmatic paradigm refers to a worldview that focuses on "what works" rather than what might be considered absolutely and objectively 'true' or 'real.'" Given the scope and scale of the problem being studied, as well as the

exploratory nature of the study, the goal is to integrate both methodologies and use both inductive and deductive approaches to answer the multifaceted social research questions at hand, and to gain a more well-rounded understanding of youths' lived experience (Morgan, 2014). Additionally, the pragmatic paradigm is one in which truth is thought to be best understood through its practical consequences (Weaver, 2018). This understanding of the pragmatic worldview appears to be particularly well-suited to the current research study as we seek to explore the impact of COVID-19 on the contextual factors that contribute to PYD outcomes by tracing the consequences, for youth and the youth sport context, of the sport disruption resulting from the COVID-19 pandemic.

Furthermore, mixed methods study designs are increasingly used for conducting research studies in fields related to behavioural, social, and health sciences. This approach involves collecting and analyzing both quantitative and qualitative data in response to the same set of research questions (Creswell, 2015). In doing so, the approaches become complementary and the strengths in one approach can compensate for the weaknesses of the other and vice versa (Creswell, 2015). Nonetheless, mixed methods study designs remain vulnerable to methodological challenges and threats to validity that will be further addressed in the discussion section below. Such challenges arise from questions about the parallel nature of the constructs or units of analysis measured by both the quantitative and qualitative data, unequal sample sizes, merging of results and consideration of divergent results (Creswell, 2015).

A convergent parallel design was selected for the current study, wherein both quantitative and qualitative data were collected separately and at the same time (Creswell, 2015). A survey was used to collect quantitative date and qualitative data were collected through individual semi-structured interviews. The results of each data set were also analyzed separately, in parallel, and

subsequently merged for an integrated discussion of the results. See the diagram of procedures in Appendix B for a visual representation of the study design.

Target Population and Sample

Participants for this study were recruited online through convenience sampling via social media ads and emails from various sport organizations to their membership. Sport organizations included Football Canada, Football Alberta, Football Quebec, BC Football, Canada Soccer, Baseball Canada, Baseball Ontario, and Canada Basketball. Participants were eligible to participate if they met the following criteria: a) aged 11-24, b) participate in at least one organized community or school sport, and c) the sport was impacted by the COVID-19 pandemic, either in the form of a cancelled season, spring training camp, summer tournament, or an uncertain or delayed return to play in fall 2020. Participation in this study was anonymous and voluntary, and participants provided written informed consent prior to participating in the study. Participants under 14-years-old provided written informed assent and their parents provided written informed consent.

Quantitative Phase

Rationale

Quantitative data was collected to gather a snapshot of the immediate impact of the pandemic on the PYD climate and on PYD outcomes for youth sport participants. Given the magnitude of the COVID-19 pandemic's impact on everyday life for all individuals, the aim of the survey was to provide a description of that impact using a large, representative sample of youth sport participants across Canada. Specifically, a quantitative survey was designed to explore whether youth sport participants continued to engage with their PYD climate (i.e., relationships with coaches, teammates, and parents), during the first months of the COVID-19

pandemic when all sports were interrupted and/or significantly restricted. Youth were further questioned about their perception of the support they received from the PYD climate. The survey also asked youth to provide insight on their experience of PYD outcomes; namely their emotional reactions related to the sport interruption.

Quantitative Research Design & Data Analysis

The quantitative phase of the research program consists of an exploratory research study with a cross-sectional descriptive design. IBM SPSS Statistics software was used to conduct the statistical analyses. Descriptive statistics and contingency tables were calculated to answer the research questions.

A series of Chi-square tests of independence were performed to assess the differences in expectancy and, thus, relationships among the variables of interest by allowing determination of whether the distribution of observations seen in one variable is independent or dependent on a second variable (Field, 2013). The Chi-Square analysis was chosen because of the categorical nature and non-normal distribution of the variables. This analysis has two main assumptions (Field, 2013). The first assumption is the independence of observations, such that each participant may only respond once and therefore only be counted in one single cell of the frequency distribution table. The second assumption is that at least 80% of the cells have an expected count of 5 or more.

Variables in the Quantitative Analysis. The variables chosen for the quantitative phase of the study were based on elements of the grounded theory of PYD through sport. Specifically, the aim was to examine factors related to the PYD climate and to PYD outcomes.

Importance of Sport. Importance of sport is an ordinal variable with 5 levels. Participants were asked to rate the importance of being able to play their sport on a 5-point Likert scale (1 =

not at all important to 5 = *extremely important*). Though this measure only provides a crude estimate of participants' commitment to their sport, it offers context for interpreting other study findings to the extent that it gives insight into the self-selection bias inherent in the study sample.

Contact with Coaches. Contact with coaches consists of two different categorical variables. The first is an ordinal variable with 7 levels measuring the frequency of contact. Survey participants were asked about the frequency of contact they had with their coach during the sport interruption (i.e., *multiple times per day, once a day, multiple times per week, once a week, 2-3 times per month, once a month, less than once a month*) through any form of communication (i.e., *social media, video chat, phone, email, text message, in person*). The second variable relates to the topics of conversations youth had with their coaches. They were asked to select options describing the content of their communication with coaches (i.e., *training, sport-specific drills, physical well-being, emotional well-being, schoolwork, return to play, other*). In order to meet the first assumption of the Chi-square analysis (independence of observations), contingency tables were created for each response option as a nominal variable with 2 levels (i.e., *yes, no).*

Contact with Teammates. Contact with teammates consists of two different categorical variables. The first is an ordinal variable with 7 levels measuring the frequency of contact. Survey participants were asked about the frequency of contact they had with their teammates during the sport interruption (i.e., *multiple times per day, once a day, multiple times per week, once a week, 2-3 times per month, once a month, less than once a month*) through any form of communication (i.e., *social media, video chat, phone, email, text message, in person*). The second variable relates to the topics of conversations youth had with their teammates. They were asked to select options describing the content of their communication with teammates (i.e.,

training, sport-specific drills, physical well-being, emotional well-being, school work, return to play, other). In order to meet the first assumption of the Chi-square analysis (independence of observations), contingency tables were created for each response option as a nominal variable with 2 levels (i.e., *yes, no).*

Perceived Support. Perceived support consists of three different ordinal variables with 5 levels each. Survey participants were asked to rate the level of support they felt from coaches, teammates, and parents (i.e., *I feel supported by my [coach, teammates, parents]*) throughout the pandemic on a 5-point Likert scale (i.e., 1 = *strongly disagree* to 5 = *strongly agree*).

Perceived Emotional Support. Perceived emotional support consists of three different ordinal variables with 2 levels each. Survey participants were asked to state (i.e., *yes* or *no*) whether they felt they received emotional support from coaches, teammates, and parents (i.e., *What have your [coach, teammates, parents] done to support you during the pandemic*) throughout the pandemic.

Emotional Reaction. Emotional reaction to the sport interruption consists of 18 ordinal variables with 5 levels each. Participants were asked to rate the extent to which they felt various emotions (i.e., *disappointed, sad, worried, hopeless, happy, relieved, calm, nervous, upset, afraid, motivated, frustrated, impatient, lonely, restless, optimistic, overwhelmed, angry*), on a 5-point Likert scale (1 = *not at all* to 5 = *extremely*), in reaction to the sport interruption caused by the COVID-19 pandemic (i.e., *Please provide a rating for each of the following ways you might feel about not being able to practice your sport*).

Threats to Validity. Given the nature of the quantitative study instrumentation, specific threats to validity related to survey error, survey construction, implementation and interpretation must be considered (Weisberg, 2005). First, as the survey was developed for the purpose of this

study without being previously used or validated, various types of instrument error may threaten the validity of the survey. For example, although the author made efforts to ensure the language and construction was appropriate for the youngest possible participants using the Flesch Ease of Reading Formula (grade 5 level), it is possible that the language was too complex or confusing for some respondents. This type of error in conjunction with the possibility of the survey being too long or having poor survey logic may have further lead to non-response or non-completion. To minimize this risk, the survey was piloted with a sample of high school and university students to examine the user-experience and estimate the length of the survey.

Threats to construct and content validity may also be factors in the construction of the survey. Both, however, are deemed to be minimized in this case as the survey was designed to be descriptive and exploratory in nature. While the structure of the survey was meant to explore various aspects of the grounded theory of PYD through sport (Holt et al., 2017), the constructs are atheoretical and the scope of the theory is broad enough that only parts of the theoretical constructs were meant to be covered by the survey.

To minimize threats to validity related to survey implementation, the survey was conducted online. It was also constructed and designed to optimize the user experience and to be accessible through multiple types of devices, including computers, tablets, and cell phones, to reach the widest range of potential participants.

Finally, threats to the external validity of the survey impact the interpretation and generalizability of the survey results. The primary threat to external validity of this survey comes from selection bias within the study sample. As convenience sampling was used to recruit study participants, bias was likely introduced into the sample by virtue of the principal investigator's closer contacts and greater reach with certain sport organizations compared to others. Further,

the survey findings may be biased by traits of individuals who chose to both participate and to complete the entire survey. Lastly, it is important to consider the specific environmental context in which the survey was completed. The survey was designed to address concerns related to the COVID-19 experience, thus the results can only tangentially inform the way in which we think about future crises and may not generalize to possible future, life-changing, global events.

Data Collection

Survey. An online survey was designed by the principal investigator to gather information regarding the impact of COVID-19 on the youth sport context. It consists of both closed- and open-ended questions. The survey was divided into different sections to improve user accessibility and flow. The following sections were included: Consent Form, Demographic Information, Coach-Athlete Relationship, Impact of COVID-19 Pandemic, Communication, Well-Being, Coping with COVID-19. Only select questions from the survey were used to answer the research questions (see Table C1) of the current study as this survey was designed as part of a broader research program.

French Translation. The survey was translated into French by the principal investigator who has experience in English to French translation. The translation was then verified by a French-speaking educator. The survey was subsequently back translated by a graduate student and educator with experience in French to English translation to ensure accuracy. Finally, all the translated text underwent a final round of verification by both the principal investigator and the graduate student to confirm accuracy and cultural appropriateness.

Procedure. Upon receiving ethical approval from the McGill University Research Ethics Board, an invitation to participate in an anonymous online survey was shared through various online channels, namely newsletters of various national and provincial sport organizations (e.g.,

Football Canada, Canada Soccer, Baseball Canada, SIRC), and through social media, including Facebook, Instagram, Twitter, and LinkedIn. By clicking on the link in the ad, participants were redirected to a landing page with different options for the language of participation, English or French. After selecting a language, participants were directed to the first page of the survey containing the consent form. The online survey was administered using the Lime Survey web application through secure servers located at McGill University. The survey required approximately 12 to 15 minutes to complete, and all questions were made optional. On the final page of the survey, participants were provided with various online resources they could visit to receive support in coping with the COVID-19 pandemic. Study participants could also enter their email to participate in a draw. After study participation was closed, a draw was conducted, and gift cards were sent by email to the email address provided by each winning participant. Data collection occurred from May 2020 to July 2020.

Qualitative Phase

Rationale

Qualitative data was collected to obtain a more in-depth and comprehensive understanding of youth sports participants' experience of the sport interruption caused by the COVID-19 pandemic. The aim was to allow youth to share their perspective of the impact of this event and to express, in their own voice, the meaning they attributed to their lived experience, one that cannot be compared to any past experiences. Specifically, the goal was to understand how youth experienced this phenomenon without imposing specific research assumptions (Allen-Collinson, 2016). Such assumptions would be based on a set of facts or events that cannot be compared to the current social and economic climate imposed by the COVID-19 crisis, a phenomenon with no comparable historical precedent in the age of globalization and technology.

Whereas the goal was to capture the truest essence of the impact of this phenomenon on youth athletes. Furthermore, within the grounded theory of PYD through sport, the experience of the individual and the meaning they attribute to their interactions within the PYD climate are central to the acquisition of PYD outcomes. This is consistent with the philosophical position of pragmatism stating that the individual's experiences and actions are rooted in the way they view their contexts, thus knowledge is uncovered by examining the circumstances in which phenomenon occur (Weaver, 2018).

Qualitative Research Approach and Data Analysis

Semi-structured, one-on-one interviews were conducted with youth sport participants to gather a more in-depth understanding of their experience of the COVID-19 pandemic phenomenon. Each interview was recorded and transcribed verbatim. The interviews were then re-read and verified for accuracy of the transcription by two graduate students. The French interviews were transcribed, verified and coded by the PI, who is a fluent French speaker, to preserve the integrity of the participant responses. The PI and two graduate research assistants read the transcripts to become familiar with the contents of the interviews and the emerging themes. The interviews were coded by hand using an excel spreadsheet. Interview transcripts were divided evenly between the PI and the two graduate research assistants following a training period to ensure inter-rater reliability. To achieve reliability, the researchers all reviewed the preliminary coding scheme together to ensure a common understanding of the meaning of each code. All three researchers then coded the same two interviews (approximately 10% of the sample) and the codes were compared. The approach described by McAlister and colleagues (2017) for qualitative coding without a specialized software was followed to determine interrater reliability (IRR = # agreements / (# agreements + # disagreements). Using the formula described

in Miles and Huberman (1994), a reliability score of 75% was achieved. All disagreements were subsequently discussed until agreement was reached on each coded statement.

Consistent with a pragmatic research philosophy, the interviews were analyzed using a concurrent inductive and deductive content analysis (Sparke & Smith, 2014). Content analysis is a systematic coding process used to analyze and classify text data to identify themes and patterns through subjective interpretation of the content or contextual meaning of the text, as opposed to simply counting words (Hsieh & Shannon, 2005). It is particularly useful for analysis large amounts of written data. This approach was chosen as the initial coding categories (broad categories) were developed through a deductive process from important concepts pulled from previous research (namely the grounded theory for PYD through sport, Holt et al., 2017), and from the research questions. An inductive reasoning process, based on the participants' responses, guided the development of the remaining sub-categories. Using a colour coding process, segments of text were initially chunked according to the PI's background knowledge of the PYD through sport literature and described to identify chunks of text with similar meanings. These data, composed of portions of participants' responses, were then organized into one of six broad categories (e.g., Support, Coping, Impact of Covid), and further organized into a sub-category within their respective broad category. The text segments and categories were reviewed by the PI and the graduate research assistants to ensure that they captured the essence of the participants' lived experiences during the COVID-19 pandemic. Excerpts from francophone participants used below were translated by the PI and back translated by a graduate research assistant with experience in English to French translation to ensure accuracy and maintain the integrity of their statements.

Data Collection

Semi-Structured Interview. An interview guide (see Table C2) was developed in parallel to the survey described in the quantitative phase. The beginning of the interview consisted of a series of short demographic questions (e.g., age, sport practiced, school grade, sporting experience) and questions about participants' general sport experience to help increase their comfort level, establish rapport, and engage youth in the interview process. A semi-structured approach was used for the remainder of the interview wherein, initial questions were general and predetermined, followed by more specific follow-up questions to elaborate on the answers to the structured questions. For example, a general question such as "Have you remained in contact with your teammates since the beginning of the COVID-19 pandemic?" was followed-up with a more specific, open-ended question like "What have you discussed during you chats?" or "Do you think that these conversations have influenced the way you are feeling?". Throughout the interview, youth were probed for specific examples, and interviewing techniques like active listening and summarizing, were used to encourage elaboration, to clarify unclear statements, and to keep the conversation on topic.

The interview questions were designed to gather a deeper and richer understanding of the social, emotional, and relational impact of the COVID-19 pandemic within the context of the PYD through sport framework (Holt et al., 2017). Specifically, questions were related to ways in which the sport interruption and restrictions caused by the COVID-19 pandemic have impacted youth's sport experience, their connection to their teammates, coaches, and parents, and their ability to benefit from their sport (e.g., acquisition of PYD outcomes). Finally, youth were asked about the social and emotional impact of the shutdown and strategies they used to cope throughout the pandemic.

Procedure. Upon receiving ethical approval from the McGill University Research Ethics Board, an email was sent to individuals who had participated in an online survey about the impact of the COVID-19 pandemic on the youth sport experience. Emails were sent directly to youth athletes aged 14 or older and to parents who had youth athletes under the age of 14. Individual athletes who were interested in participating or parents of athletes who were interested in participating were invited to schedule a meeting time with the principal investigator through the Calendly web application.

Individuals who scheduled a meeting with the PI were contacted by email to confirm the date and time of the interview. Youth participants and parents of participants below the age of 18 were sent consent forms to read and sign before the interview. Once written consent was obtained, the principal investigator provided a link for the meeting to occur on Microsoft Teams video chat. All interviews occurred over video conference (n = 24). When the PI and the interviewee first met, information about the study was provided, the limits of confidentiality were explained, and participants were asked to provide verbal consent/assent to being interviewed after having the opportunity to ask questions. They were also asked to provide verbal consent/assent to being recorded for the duration of the interview. The recording commenced once verbal consent/assent was obtained. For youth between 11 and 13 years, parents were asked to leave the room after providing consent so that the youth could feel safe and secure to speak freely and answer questions authentically. All interviews were conducted by the PI, who has received formal clinical training in conducting interviews with children, adolescents, and young adults. At the beginning of each interview the participants were reminded of the purpose of the study and were told that there was no “right” or “wrong” answer. During the interview, a semi-structured interview guide was employed. At the end of the interview,

participants were invited to add any remaining thoughts about the topic. They were also thanked for their participation and entered in a draw for an opportunity to win a gift card. Following each interview, the recording was downloaded to a local hard drive and then each interview was transcribed verbatim and anonymized to ensure participant confidentiality. Interviews lasted between 17 minutes and 67 minutes (M = 24 min 27 s).

Quality Standards. Given the time-sensitive and physically constrained nature of the data collection phase, the principal investigator was unable to spend extra time with the study participants. However, significant efforts were made to communicate and dialogue with important stakeholders within the organizations through which participants were recruited, including managers, researchers, coaches, and youth sport development teams (Stahl & King, 2020). For example, the PI held meetings with high level decision makers in each sport organization to describe the research study and rationale, as well as to gain buy-in and trust by answering questions, addressing concerns, and demonstrating expertise in the field of youth development and personal connection to youth sports. Recruitment emails were then sent through these individuals to increase the level of trust that participants would have when engaging in the interviews. The principal investigator also communicated directly with parents, either through email or over videoconference to increase credibility with the youth participants. The principal investigator engaged in multiple discussions with researchers in youth sport, coaching and child development, providing the opportunity to reflect on the research process, and the findings themselves (Smith & McGannon, 2018). Additionally, multiple meetings were held with research assistants and the principal investigators' research supervisor during each stage of the data analysis phase and of the study overall. During these meetings, researchers extensively discussed ways in which to increase accessibility for potential research participants,

in addition to concerns related to design and data analysis to maintain integrity in the research process, avoid the introduction of bias, and allow participants voices be heard in their truest form. This allowed for critical reflection on each phase of the data analysis and interpretation, as well as increased transparency and trustworthiness throughout the evolution of the research project (Nowell et al., 2017; Stahl & King, 2020).

Chapter IV

Results

Quantitative Phase

Participants

The current study involved 635 Canadian youth athletes. Participants included 465 male (73.2%), 168 female (26.5%) and 2 gender non-binary (0.4%) individuals between the ages of 11 and 24 years (M = 15.91, SD = 2.26). They played a variety of organized sports including, tackle or flag football, soccer, basketball, baseball, hockey, dance, wrestling, cross country, and badminton, among others. Two hundred and seventy-four (43.2%) respondents were multi-sport athletes playing between 2 and 6 organized sports. Years of experience playing organized sports ranged from one to 10 or more years. Complete socio-demographic characteristics are presented in Table 1.

Results of the Quantitative Data Analysis

Results are presented in four sections. The first section serves to offer context for understanding the survey sample in terms of possible sampling bias. The second section provides descriptive data to answer the first research question relating to youths' continued engagement with the PYD climate during the sport interruption. The third section explores the second research question, providing descriptive data exploring survey respondents' self-reported

emotional states as related to the sport interruption as well as chi-square data exploring the relationship between their emotional states and the perceived support from the PYD climate. Finally, the last section provides chi-square data to explore possible links between PYD climate variables (i.e., frequency and content of communication) and social emotional outcomes (i.e., perceived support and emotional reactions), thus answering research questions 3a and 3b. Given the elevated number of contingency tables computed, only significant findings will be reported in the body of this dissertation. All significant contingency tables can be found in the tables at the end of the text.

Importance of Sport. Participants were asked to rate how important it was for them to be able to play sports on a scale from 1 (*not at all*) to 5 (*extremely important*). No participants provided a rating of 1, such that sports were viewed as having some value, if minimal, for every survey respondent. Only 0.3 % (N = 2) of participants provided a rating of 2 and 2.8 % (N = 18) of participants provided a rating of 3. Approximately 1/5th of participants (N = 122, 19.2%) provided a rating of 4, and most participants (N = 493, 77.6%) provided a rating of 5, noting that it was extremely important for them to be able to play sports. See Table 2.

Research Question 1. How often do youth sport participants communicate with individuals within the PYD climate (i.e., coaches and teammates) during COVID-19 restrictions, in the absence of formal sport practices and games, and what is the content of their communication?

Frequency of Contact with Teammates. Most of the participants (N = 559, 88.0 %) reported having been in touch with their teammates at least one time since the beginning of the pandemic. Of those, one fifth (N = 116, 20.8%) reported being in contact with their teammates multiple times per day, 8.9 % (N = 50) reported one contact per day, 40.6 % (N = 227) reported

being in touch with teammates multiple times per week, 16.8 % (*N* = 94) reported weekly contact, 8.1 % (*N* = 45) reported communicating with teammates 2 to 3 times per month, and 4.5 % (*N* = 25) reported one contact or less per month with teammates. See Table 3.

Content of Contact with Teammates. Among participants who reported having contact with their teammates, the most common topics of conversation reported between teammates were return to play (*N* = 446, 79.8%) and training (*N* = 435, 77.8%). More than half of the participants reported talking to their teammates about their schoolwork (*N* = 307, 54.9%). Participants also spoke with their teammates about sport-specific practice drills (*N* = 232, 41.5%) and their physical well-being (*N* = 257, 46.0%). Notably, more than one third of participants reported that they spoke to their teammates about their emotional well-being (*N* = 201, 36.0%). See Table 3.

Frequency of Contact with Coaches. Approximately 2/3 of participants (*N* = 433, 68.2%) reported having been in touch with their coach at least one time since the beginning of the pandemic. Of those, 6.0 % (*N* = 26) reported being in contact with their coach one or more times per day, 19.9 % (*N* = 86) reported being in touch with their coach multiple times per week, 26.8 % (*N* = 116) reported once weekly contact, 21.7 % (*N* = 93) reported communicating with their coach 2 to 3 times per month, 14.8 % (*N* = 64) reported once monthly communications, and 10.6 % (*N* = 46) reported less than one contact per month with their coach. See Table 3.

Content of Contact with Coaches. As with their teammates, among participants who had contact with their coaches, most reported talking to their coach about training (*N* = 357, 82.4%) and return to play (*N* = 308, 71.1%). Approximately half of them spoke with their coaches about sport-specific practice drills (*N* = 240, 55.4%) and their physical well-being (*N* = 219, 50.6%). More than one third of participants reported that they spoke to their coach about their emotional

well-being (*N* = 167, 38.6%). Schoolwork was the least frequently reported topic of communication with coaches (*N* = 144, 33.3%). See Table 3.

Research Question 2. Descriptive statistics were calculated to determine the proportion of athletes who felt supported by parents, coaches and teammates and the type of support they received from each respective individual in their PYD climate. Descriptive statistics were also computed to understand the nature and intensity of their emotional response to the COVID-19 restrictions placed on their sport. See Table 4.

Perceived Support. Participants were asked to provide a general rating for how much they agreed with the statement "I feel supported by my [parents, teammates, coach]". In terms of overall support, almost all youth either agreed (*N* = 180, 28.3%) or strongly agreed (*N* = 373, 58.7%) that they felt supported their parents, with only 11.9 % either disagreeing or providing a neutral response. Regarding other relationships in the PYD climate, approximately 1/5th of respondents disagreed or felt neutral about the support they felt from teammates (*N* = 128, 20.5%), and their coaches (*N* = 104, 18.3%). More youth agreed (*N* = 268, 42.2%) that they felt supported by their teammates compared to those who strongly agreed (*N* = 227, 35.7%). Meanwhile, more youth strongly agreed (*N* = 270, 42.5%) that they felt generally supported by their coaches through the COVID-19 pandemic compared to those who agreed (*N* = 239, 37.6%).

Participants were asked about the type of support they received from parents, teammates, and coaches throughout the COVID-19 pandemic. Less than half of the youth reported receiving support from their parents related to pragmatic aspects of maintaining a sport practice such as help with general training (*N* = 164, 25.8%), practicing sport-specific drills (*N* = 199, 31.3%), and access to equipment (*N* = 181, 28.5%). A higher proportion of youth reported receiving support from teammates related to sports practice. Just over 40% reported teammate support with

general training (*N* = 261, 41.1%), and tips for practicing sport-specific drills (*N* = 265, 41.7%). Finally, almost half of surveyed youth reported receiving support from coaches related to general training (*N* = 358, 56.4%) and sport-specific drills (*N* = 315, 49.6%). Youth were asked additional questions about sport-related coach support, and many reported that their coaches provided support in the form of instructional videos (*N* = 270, 42.5%), social media engagement (*N* = 226, 35.6%) and team meetings (*N* = 263, 41.1%). In terms of emotional support, more than half of respondents reported that their parents provided emotional support (*N* = 434, 68.3%). Fewer athletes reported feeling that they received emotional support from their teammates (*N* = 259, 40.8%), and even fewer from their coaches (*N* = 148, 23.3%). In all 14.6 % (*N* = 93), 22.8% (*N* = 145), and 18.6% (*N* = 118) of survey respondents reported that they did not receive any concrete support from their parents, teammates, and coaches, respectively, throughout the early months of the COVID-19 pandemic.

Emotional Reaction. Participants were asked to provide ratings from 1 to 5 (1 = *not at all important*, 5 = *extremely important*) on a series of emotions related to the question "Please provide a rating for each of the following ways you might feel about not being able to practice your sport". Approximately two-thirds or more of respondents reported feeling either very or extremely (e.g., provided rating of 4 or 5) disappointed (*N* = 551, 87.3%), sad (*N* = 427, 68.0%), impatient (*N* = 401, 65.7%), upset (*N* = 389, 62.8%), frustrated (*N* = 386, 62.7%), about being unable to play their sport. Between one quarter and one half of respondents reported feeling very or extremely angry (*N* = 300, 49.3%) , motivated (*N* = 287, 46.7%), worried (*N* = 285, 46.6%), restless (*N* = 247, 41.3%), optimistic (*N* = 213, 35.6%), lonely (*N* = 215, 35.5%), hopeless (*N* = 190, 31.4%), nervous (*N* = 159, 26.2%), overwhelmed (*N* = 148, 25.3%), or calm (*N* = 147, 24.1%) in relation to the disruption to playing sports. Finally, very few respondents reported

feeling very or extremely happy (N = 53, 8.7%) or relieved (N = 29, 4.7%) about sport interruption.

Research Question 2a. A series of chi-square tests of independence were performed to examine the relationship between youths' emotional reactions to the sport interruption and their perception of receiving emotional support from either their parents, coaches, or teammates. See Table 5.

Teammates. There were significant relationships between youths' perceived emotional support from teammates and multiple emotional reactions to the sport interruption. Significant associations were found between perceived emotional support from teammates and the following emotions: sad, $\chi^2(4, N = 628) = 16.26$, $p = .003$; worried, $\chi^2(4, N = 612) = 9.51$, $p = .049$; upset, $\chi^2(4, N = 619) = 17.21$, $p = .002$; afraid, $\chi^2(4, N = 595) = 14.84$, $p = .005$; frustrated, $\chi^2(4, N = 616) = 21.70$, $p < .001$; overwhelmed, $\chi^2(4, N = 586) = 11.27$, $p = .024$; lonely, $\chi^2(4, N = 606) = 13.56$, $p = .009$; and angry, $\chi^2(4, N = 608) = 23.76$, $p < .001$. The same pattern of results emerged across all the contingency tables. Overall, more youth than expected rated higher levels of each emotion when they felt they had received emotional support from their teammates, whereas they were less likely than expected to provide low ratings on each emotion. Meanwhile, youth who did not report receiving emotional support from teammates were more likely than expected to provide lower ratings for each emotion and less likely to provide high ratings.

Coaches. A significant relationship was found between frustration and perceived emotional support from a coach, $\chi^2(4, N = 616) = 13.10$, $p = .011$. A significant relationship was also found between feelings of loneliness and perceived coach emotional support, $\chi^2(4, N = 606) = 11.33$, $p = .023$. Similar to findings seen with teammates, more athletes than expected reported higher levels of frustration or loneliness when they felt emotionally supported by their coaches,

whereas fewer than expected provided low ratings on each emotion when they reported feeling emotionally supported. Athletes who reported no emotional support from their coach were more likely to report lower feelings of frustration and loneliness and less likely than expected to provide high ratings.

Parents. No significant relation was found between athletes' emotional reactions and their perception of having received emotional support from their parents. In other words, athletes' feelings of having received emotional support from their parents was independent from their emotional reaction to the sport interruption.

Research Questions 3. A series of chi-square tests of independence were performed to examine the relation between youths' emotional reactions to the sport interruption and the frequency and content of their contacts with teammates, and coaches.

Research Question 3a. There was a significant association between youths' frequency of contact with their coaches and their perception emotional support, $\chi^2(6, N = 431) = 17.09$, $p = .009$ (i.e., Table 6). However, no significant relationship was found between frequency of contact with teammates and youths' perception of feeling generally or emotionally supported by their teammates. Youth who spoke with their coaches more than once per week were more likely than expected to report feeling emotionally supported by their coach, while youth who had less than once weekly contacts were more likely to report that they did not feel emotionally supported by their coach. Additionally, there were no significant relations between frequency of contact with teammates or coaches and any emotional reaction to the sport interruption.

Research Question 3b. Significant relationships were found between perceived support from teammates and content of communication, namely, training, $\chi^2(4, N = 551) = 14.93$, $p = .005$, and drills, $\chi^2(4, N = 551) = 11.35$, $p = .023$ (i.e., Table 7). Youth who discussed training

and drills with teammates were more likely than expected to report the highest levels teammate support. As well, youths perceived emotional support from teammates was significantly related to discussions of physical well-being, $\chi^2(1, N = 559) = 16.70$, $p < .001$; emotional well-being, $\chi^2(1, N = 559) = 77.39$, $p < .001$; schoolwork, $\chi^2(1, N = 559) = 4.88$, $p = .027$; and return to sport, $\chi^2(1, N = 559) = 12.60$, $p < .001$ (i.e., Table 8). Youth who discussed their physical and emotional well-being, schoolwork, and the return to sport with their teammates were more likely than expected to report feeling emotionally supported and less likely to report no perceived emotional support. Meanwhile fewer youth than expected reported no perceived emotional support from teammates after discussing these topics while youth who did not discuss these topics with teammates were more likely than expected to report no emotional support.

Significant relationships were also found between youths' perception of support from coaches and specific topics of conversation, including, training, $\chi^2(4, N = 428) = 11.35$, $p = .023$); drills, $\chi^2(4, N = 428) = 13.91$, $p = .008$; schoolwork, $\chi^2(4, N = 428) = 10.43$, $p = .034$; and return to sport $\chi^2(4, N = 428) = 16.63$, $p = .002$ (i.e., Table 7).[1] Youth who discussed training, drills, schoolwork or the return to sport were more likely than expected to strongly agree with the statement that they felt supported by their coach, whereas fewer youth than expected who did not discuss these topics endorsed the highest level of perceived support. More youth than expected either disagreed or were neutral about feeling supported by their coach when they had not discussed topics of training, drills, and the return to sport, while fewer youth than expected who discussed these topics with their coach were neutral or disagreed with a statement about feeling supported by their coach. There were also significant relations between youths' perception of

[1] Contingency tables for all variables in this list (i.e., training, drills, schoolwork, return to sport) violate the second assumption of Chi-square analyses by one cell. However, the findings are reported as the violation is deemed minor, and the results are consistent with findings reported for similar analyses conducted in relation to teammates.

emotional support from coaches and discussions pertaining to training, $\chi^2(1, N = 433) = 4.27$, $p = .039$; drills, $\chi^2(1, N = 433) = 4.54$, $p = .033$; physical well-being, $\chi^2(1, N = 433) = 30.60$, $p < .001$; emotional well-being, $\chi^2(1, N = 433) = 81.14$, $p < .001$; schoolwork, $\chi^2(1, N = 433) = 40.39$, $p < .001$; and return to sport $\chi^2(1, N = 433) = 4.330$, $p = .037$ (i.e., Table 8). The same pattern emerged for all variables measured. More youth than expected who discussed any topic with their coach reported feelings of emotional support, while fewer than expected reported feelings of emotional support if they had not discussed any topic with their coach. The reverse was true for those who did report feelings of emotional support from their coach.

Regarding emotional reactions to the sport interruptions, multiple significant relations were found between youths' emotional outcomes and the content of their conversation with teammates. Discussions of returning to sport were significantly related to reported feelings of disappointment, $\chi^2(4, N = 555) = 11.21$, $p = .024$[2]; sadness, $\chi^2(4, N = 553) = 22.82$, $p < .001$; worry, $\chi^2(4, N = 542) = 16.10$, $p = .003$; calm, χ^2 $(4, N = 541) = 16.37$, $p = .003$; nervousness, $\chi^2(4, N = 537) = 10.69$, $p = .030$; upset, $\chi^2(4, N = 545) = 21.51$, $p < .001$; fear, $\chi^2(4, N = 528) = 10.35$, $p = .035$; frustration, $\chi^2(4, N = 544) = 20.18$, $p < .001$; impatience, $\chi^2(4, N = 539) = 21.85$, $p < .000$; and anger, $\chi^2(4, N = 537) = 23.33$, $p < .001$. A significant relationship was also found between youths' reported feelings of worry, $\chi^2(4, N = 542) = 14.87$, $p = .005$; relief, $\chi^2(4, N = 536) = 12.27$, $p = .015$; nervousness, $\chi^2(4, N = 537) = 14.13$, $p = .007$; and motivation, $\chi^2(4, N = 541) = 13.16$, $p = .011$ and talking about drills with their teammates. Similarly, the topic of training was significantly related to reported feelings of nervousness, $\chi^2(4, N = 537) = 14.98$, $p = .005$), in addition to feeling upset, $\chi^2(4, N = 545) = 19.09$, $p = .001$. There was also a significant relationship between the topic of schoolwork and reported feelings of relief, $\chi^2(4, N = 536) =$

[2] See Footnote 1

10.14, $p = .038$. The topic of physical well-being was significantly related to multiple reported emotions including feeling nervous, $\chi^2(4, N = 537) = 19.14$, $p = .001$; afraid, $\chi^2(4, N = 528) = 15.84$, $p = .003$; frustrated, $\chi^2(4, N = 544) = 22.97$, $p < .001$; impatient, $\chi^2(4, N = 539) = 13.48$, $p = .009$; restless, $\chi^2(4, N = 526) = 16.80$, $p = .002$; overwhelmed, $\chi^2(4, N = 516) = 15.82$, $p = .003$; and angry, $X^2(4, N = 537) = 15.02$, $p = .005$. Finally, the topic of emotional well-being was significantly related with reported feelings of nervousness, $\chi^2(4, N = 537) = 15.63$, $p = .004$; fear, $\chi^2(4, N = 528) = 19.93$, $p = .001$; overwhelm, $\chi^2(4, N = 516) = 16.56$, $p = .002$; and anger, $\chi^2(4, N = 537) = 13.04$, $p = .011$. There was also a significant relationship between youths' reported feelings of worry, $\chi^2(4, N = 421) = 10.03$, $p = .040$, and discussions of physical well-being with the coach. As well, feeling motivated, $\chi^2(4, N = 424) = 9.70$, $p = .046$, was significantly related to discussions of emotional well-being with the coach. See Tables 9 and 10.

The same pattern emerged across every significant relation measured for negative emotional outcomes. For those who discussed any topic with either teammates or coaches, more youth than expected endorsed higher negative emotion ratings, and fewer than expected endorsed higher ratings if they had not discussed the respective topic. Meanwhile, for lower emotion ratings, more youth than expected endorsed low negative emotion ratings if they had not discussed the specific topic in questions, while fewer youth than expected who reported discussing the respective topic endorsed low emotion ratings. The opposite trend was found for feelings of calm, wherein more youth than expected reported higher ratings of calm if the had not discussed the return to sport with teammates and fewer than expected reported high ratings of calm if they had discussed the return to sport and vice versa. Significant findings related to feelings of relief demonstrated that more youth than expected reported low feelings of relief if they had discussed drills or homework with teammates, whereas those who did not discuss these

topics were less likely to report low feelings of relief. Finally, the opposite trend was seen with motivation, in that more athletes than expected reported high ratings of motivation if they had discussed drills with teammates or their emotional-well being with coaches, whereas for those who had not discussed these topics higher ratings of motivation were less frequent than expected.

Qualitative Phase

Participants

The qualitative phase involved 24 youth athletes from across Canada. Sports played by participants included football (*n = 12*), basketball (*n = 6*), soccer (*n = 3*), baseball (*n = 3*), hockey (*n = 3*), flag football (*n = 3*), wrestling (*n = 2*), track and field (*n = 2*), softball (*n = 1*), figure skating (*n = 1*), badminton (*n = 1*), and futsal (*n = 1*). Eleven interviewees played more than one sport competitively, and 23 participants were involved in sports year-round. Athletes in this sample ranged in age between 11 and 18 years old (M = 15.08, SD = 1.86), including 8 females and 16 males. Participants had one to 10 or more years of experience playing their sports. See Table 11 for complete demographic information.

Results of Qualitative Data Analysis

The results are presented in four sections. The first serves to provide context regarding the importance and meaning of sports to the youth who participated in the interviews. The following three sections explore athletes' experiences of the COVID-19 pandemic to answer the research questions. Specifically, the second and third section address the first qualitative research question by examining the impact of the COVID-19 pandemic on the functioning of the sport system and PYD climate, and youths' resulting engagement with the PYD climate, respectively. The fourth section addresses the second qualitative research question by discussing how athletes coped with the sport interruption and/or restrictions both in terms of the emotional impact of

COVID-19 and the strategies they used to manage their feelings about the situation. Participant identification codes are provided for each quote (F = Female; M = Male; S = Soccer; BB = Basketball; FB = Football, FF = Flag Football, W = Wrestling, BS = Baseball, SB = Softball, H = Hockey, TF = Track & Field). Identification codes include participants' initials, followed by gender, age and sport(s) played. See Table 9 for the final code guide.

Meaning of Sports Before COVID-19. Overall, the youth who were interviewed described sports as being central to their lifestyle and to their identity, demonstrating that sports are very important and meaningful to their daily lives. Most of the youth were involved in sport teams both within and outside the school setting and as a result were involved in sports year-round. Sports also appeared to represent a significant time investment for most youth. While they typically all described one sport as being their main sport, almost half of the interviewees were multisport athletes, mentioning at least one more sport in which they participate during the off-season of their main sport. Additionally, almost all athletes who were interviewed described a significant personal investment in their sport in terms of the level of competition in which they were involved, and their future goals related to sport participation. Approximately half of the interviewees cited a desire to play at the college and/or professional level in the future.

When asked about why their sport was important to them, or what they missed most about their sport during the interruption, three sub-themes emerged. First, athletes reported that their sport provided them with a strong sense of belonging and opportunities to connect with others. Every athlete mentioned the social aspect of doing their sport as central to their experience. They discussed the multiple friendships they made with teammates and how those friendships have evolved beyond the sport setting. Furthermore, some athletes discussed opportunities to interact with new individuals, such as other athletes and coaches during games

and tryouts for summer/tournament teams, as being a unique and important social opportunity that they access through their sport. With the pandemic, however, most of these opportunities were lost due to event cancellations across Canada and in the United States. Finally, football players often referred to the brotherhood in which they feel they are included. One female football player, EH, highlighted why football is an important, unique, and inclusive social environment: “there's a spot on the team for everybody, like any type of person can play.” (F; 18; FB, W)

The second sub-theme revolved around the idea of fun and enjoyment. It was difficult for most athletes to identify one thing about their sport that made it important to them. Rather, they broadly discussed their love for their sport and the fun and enjoyment it brought to their lives. Simply described, AT stated, “I just really like playing so I miss being out there and getting to play.” (F; 15; BS, SB)

Finally, athletes cited physical and mental health as reasons for which sports are important and meaningful for them. They discussed the benefits of physical activity, and the way in which sports provide opportunities and motivation to “stay in shape” and do “conditioning” to stay healthy. Some interviewees referred to physical skills development as well, such that sports “gets you quicker and stronger”. In addition to physical health, certain athletes related the physical benefits of movement to benefits for their mental health. HP described the impact of movement on his ability to concentrate at school; “I feel like having an ice time in between the middle of the day, I feel like it really helps because I have trouble sitting down for really long times.” (M;13; H). BB said: “dès que j’arrête, comme à long terme, un peu, je le vois direct, genre, que ça, ça m'affecte. […] C'est comme quand j'ai recommencé le flag [football] il y a deux semaines, j’ai vu que j'étais comme un peu plus genre j'étais plus contente *[as soon as I stop, like*

for a long time, a little bit, I see it straight away, like, that it, it affects me. [...] It's like when I re-started flag football again two weeks ago, I saw that I was like a little bit more like I was more happy]." (F; 18; FF) Finally, JH also described the link between the social aspect of sport participation and mental health, in that "it was just hard 'cause I'm usually pretty social with people so just not being able to see everybody was really, I don't know. It took a toll on my mental health." (M;14; W, H, TF)

Taken together, interviewees' depictions of their sport participation illustrated a strong sense of value and meaning for each athlete. It follows that each participant conveyed an undeniable recognition of what they lost when the COVID-19 pandemic started leading to significant sport interruptions. Their experience of this loss is described below.

Impact of COVID-19 Pandemic on the Sport System and the PYD Climate.

Participants were questioned on how the COVID-19 pandemic impacted their sport season and events. All participants referred to having their sport season cancelled or postponed due to COVID-19. Many participants revealed multiple stoppages over the course of restrictions due to their participation in multiple sports across geographical regions with varying restrictions. Specifically, around 80% of athletes reported their seasons had been cancelled and the remaining 20% had their seasons postponed. Most athletes reported having been in transition between sport seasons when the COVID-19 restrictions occurred. If athletes had started their season, few games and practices had occurred before shutdowns. In addition to season practices and games, training camps were also cancelled, including the closure of training facilities.

In addition to missed games or cancelled seasons, athletes reported having to miss out on opportunities in their sport. Missed tournaments and tryouts were mentioned most by athletes. Of particular importance to athletes were national or provincial playoffs that were cancelled prior to

beginning or amid taking place. Athletes further noted that working towards these tournaments were goals that could no longer be fulfilled. For example, many mentioned opportunities to become champions and prove their abilities at higher competitive levels. Many athletes also indicated having missed out on travel opportunities for tournaments and playoffs. One athlete was invited to a travelling tournament in the United States that was sponsored by a major sporting retail company, which he could no longer attend due to COVID-19 restrictions. Missed opportunities also came in the form of missed tryouts. Tryouts could not occur that would allow athletes to move up to a higher division or to a new team, representing major disappointments. Some athletes reported that this tryout season would have been their final chance to make a certain team due to age requirements. Athletes nearing the end of high school also mentioned lost opportunities for exposure to potential recruiters, creating possible longer-term impacts on their future college or university sport careers. Finally, seasons or tournaments that ended abruptly also limited the opportunity for athletes to say goodbye to their teammates or coaches, as one athlete noted.

In addition to the impact on the sport season, participants were also asked how COVID-19 restrictions had impacted their school or work environment, as these settings often interact with sport participation. School requirements, class time and expectations varied overtime and among athletes. This inconsistency was mostly felt at the beginning of the pandemic lockdown when schools shut down and no online school was taking place. Initially, most athletes reported having enjoyed the lockdown allowing them to sleep in and miss school, as two respondents disclosed. However, all participants eventually missed attending school in person and felt online schooling was a challenging part of the lockdown to get accustomed to. The main reasons participants found online schooling difficult were that it gave them no structure, minimal social

contact, and little motivation because grades did not count after stay-at-home orders began. AP said, “the school, it was kind of like frustrating to do 'cause no one’s ever really had to teach online.” (M; 13; BS) Some youth found it difficult to concentrate at home as well because they were not used to the high level of inactivity. AT explained she would “tend to use training as an outlet when school gets hard, and it was worse online,” (F; 15; BS, SB) and HP said, “I feel like having an ice time in between the middle of the day I feel like it really helps because I have trouble sitting down for really long times.” (M; 13; H) Two of the older athlete’s started working new jobs because of the COVID-19 restrictions, expressing that work provided structure and kept them busy while they waited to get back to their usual activities, namely sports. Those who had an easier time adapting to the new mode of learning found ways to create structure to organize the day. TI who was successful with the transition said, “I just did my best to organize my time like I just did school in the morning and then when that was done, I made my way to work out and then get everything else from there.” (M; 16; FB) Further, HP quickly adapted to the change, “because I already did online school before. So, I got ahead 'cause I had nothing else to do.” (M; 13; H) However, as restrictions continued and sports were at a stand still, athletes expressed less optimism regarding their schooling and sport participation, which appeared to be exacerbated by their uncertainties about the future and limited social interactions.

The most notable impact of the COVID-19 pandemic on the PYD climate, as expressed by the interview participants, was their limited social contact, particularly with teammates. While all interviewees mentioned that they continued to be in contact with teammates and coaches through social media, or virtual meetings, it was clear that the amount of social connection was significantly limited by the pandemic restrictions. As JH described, “a lot of them I haven't been in contact with 'cause the only time I would ever really see them was at school or through the

sports." (M; 14; W, H, TF) The quality of social interactions was also impacted, wherein many athletes shared HP's feelings about the sport interruption's impact on their well-being even though they continued to communicate with friends virtually: "Probably the hardest part was not seeing my friends [in person] for a really long time." (M; 13; H) The PYD climate was also affected by changes in interactions with coaches and parents, where coaches became more peripheral while parents became more central figures in youths overall engagement in physical activity and sport. These changes are more fully explored in the following section describing athletes' continued engagement with the PYD climate during the COVID-19 pandemic.

Youth Engagement with PYD Climate During Sport Interruption. Despite COVID-19 restrictions and sport interruptions, all the youth sport participants who were interviewed mentioned that they engaged with their PYD climate to varying degrees. Two broad but related themes emerged concerning participants' engagement with the PYD climate: communication and support.

In the absence of physical practice and weekly contact, all youth except one discussed being in contact with their teammates. Youth described various forms of communication through social media, video conference applications, project management applications and even video games. Overall, youth described that they mostly discussed topics related to their sports and the return to sport. Moreover, they were more likely to be in communication with teammates when there were signs that they would be allowed to return to playing sports, or in cases where teammates were also good friends outside of the context of sports.

In addition to communication with teammates, all but two youth discussed communication with their coaches. There was a wider range in terms of the amount of contact that athletes described having with their coaches. In some cases, youth mentioned having no

contact with their coaches from the beginning of the pandemic, while others mentioned frequent contacts with coaches. One youth reported that his coach called every athlete on the team and spoke with them at length about how they were coping with the pandemic. Another youth reported that the coach visited each athlete in person. The frequency or amount of contact with the coach appeared to vary according to how the beginning of the COVID-19 pandemic coincided with the timing of the sport season (pre-season, playoffs, end of season). Some athletes also demonstrated more initiative in reaching out to their coaches; these were often older athletes, competing at higher levels, or with a longer-term coach-athlete relationship. Athletes competing at higher levels, or in transition between high school and CEGEP or University, were more likely to reach out to coaches or trainers for help with training ideas and support. Meanwhile, youth who had less contact with coaches typically communicated with them about pandemic closures and restrictions, as well as procedures and protocols for the return to sport. While many of the youth appeared satisfied with the level of contact that they had with their coaches, one youth expressed frustration that he waited a long time before any coach reached out to him to provide simple administrative information about the return to sport (DD; M; 17; BB, FB). Finally, a smaller sub-theme of recruitment was identified among older athletes, particularly those in a year of transition to playing in CEGEP or university. These athletes discussed multiple contacts from potential coaches trying to recruit them to their teams. One athlete spoke at length about coaches using Twitter as a tool to reach out to him, share information, and speak about his potential future at their school. While this type of communication was not unusual, in the absence of summer tournaments and playoff seasons, this youth noticed a heavier reliance on social media for recruitment purposes than in the past.

Finally, approximately one third of the youth interviewed referred to communication from their league or sport organization. Approximately half of these participants, described satisfaction with league communications, citing they did a good job communicating guidelines and providing information and resources to athletes and parents to support them during the pandemic. The other half of athletes spoke about their dissatisfaction with the league. They expressed frustration and confusion over a lack of clarity in the return to play guidelines, delays in announcing plans for the upcoming competitive season, and an unwillingness to take responsibility for certain decisions related to return-to-sport guidelines and procedures. FL summarized the feelings shared by many older football players in Quebec:

> "[…] I guess qu'ils ont voulu se dissocier le plus possible de comme pas prendre le blâme de la RSEQ , […]. C'est plate d'avoir à attendre aussi longtemps pour avoir des informations. Moi, ce que j'aurais aimé qu'il fasse, qui me donne des certitudes par rapport à des incertitudes *[I guess they wanted to dissociate themselves as much as possible from taking the blame for the RSEQ, ... It's a shame to have to wait so long for information. Me, what I would have liked them to do, that they give me certainties in relation to uncertainties]*." (M; 16; FB)

Through their contact with their coaches and teammates, most athletes also expressed feelings of support they received from these individuals that varied from none to a lot of emotional and social support. Regarding coaches, all but one participant addressed their coach or coaches during the interview. As previously noted, few participants reported that they had not had any contact with coaches since the beginning of the pandemic. At the other end of the spectrum, AP's coach did home visits and stopped by every team member's house to check-in and ensure that the youth were coping well with the pandemic. However, despite their varying

level of support or involvement throughout the pandemic most coaches were described as understanding and welcoming when youth discussed their concerns. The way in which coaches offered support and connection also varied widely, from in-person visits to communication through social media. Many coaches organized team Zoom meetings while others called or saw their athletes one-on-one. Many coaches provided more pragmatic forms of support such as offering training programs and checking-in on progress. Younger athletes spoke about their coaches' efforts to lighten the mood, and maintain an uplifting and playful energy, especially during the return to play where they experienced many restrictions on their normal play. For example, GG mentioned that "nos coachs mettent de la musique au fond. Exemple pour nous motiver, il va crier et puis c'est vraiment le fun *[Our coaches play loud music, for example to motivate us, he will shout and it's really fun]*. " (M; 14; BS) Finally, athletes with the most long lasting and closest relationships with their coaches were most likely to report that their coaches offered more frequent and personalized support. For instance, as TI described:

> "One of the coaches, my offseason coaches, from the gym that I work out at, has been very key in success in me. Like pushing myself. He's been always behind me, he's driven me around, he's done basically everything to keep me motivated." (M; 16; FB)

Whereas all participants reported some level of communication with their teammates during the pandemic. Fewer than half of youth referred to the idea of receiving support, emotional or otherwise, from their teammates during the pandemic. In most cases the teammates who were said to be most supportive were teammates who were already friends or those who became good friends with the youth through many years being on the same team, as noted by TI: "There's my best friend too. He's been playing with me since day one." (M; 16; FB) Older athletes typically discussed feeling supported by their teammates in the context of working out

together which provided added motivation to stay active. This was described by JG, who illustrated the situation as follows:

> "You know, like, right now me and some of my friends are actually working out again together in Saskatoon. But we've only just started doing that again because, you know, we haven't been able to see each other or hang out or anything like that. And then also you know, everybody else trying to work out and you know, kind of pushing each other. When you're calling your friends and stuff like that and talking about the workouts. […] I think, you know, definitely communication with, with your friends and you know, talking with them lots and just kind of knowing that they're kind of in the same boat as you and feeling, feeling the same type of way." (M; 16; FB, BB, TF)

Younger participants were just as likely as older athletes to report feeling some level connection and support from teammates. However, younger participants were more likely to receive support through social media conversations where teammates spoke about being in this situation together. Participants found this helpful and JW (M; 11; FB) reported that it created hope as teammates spoke about looking forward to getting back to their regular sport practice, discussed drills and practices, and talked about common interests like gaming.

Finally, 12 participants referred to family support as being central to their experience during COVID-19, especially in the context of having no sports. For example, parents were described as helpful by encouraging their child to practice various exercises or simply to stay active. EH's mother "always told me that I should workout even though I didn't. Trying to get me to and stuff like that," (F; 16; FB, W) and AP's father was "just always encouraging us to work harder and he's always helping us, so that's a big factor." (M; 13; BS) ANI's parents encouraged family activities like "we go on bike rides." (M; 12; FB, BB) Parents also provided

reminders and motivation, not only to stay active, but also to work on specific sport practice. For example, JH noted “both my mom and dad are sharing the keep and I’m taking my shots and going outside.” (M; 14; W, H, TF) Additionally, siblings helped athletes remain active through outdoor play and extra motivation to practice. This was particularly powerful for participants like AT who had a sibling playing the same sport and who was familiar with the same training practices and rituals as them. In AT’s words:

> "I have a brother and he plays baseball as well. So, we've been like throwing around outside together and hitting wiffle balls. I think when it comes to throwing with my brother, we both miss playing, and so it's kind of just like, ‘this is as close as we're gonna get why don't we just do it?’” (F; 15; BS, SB)

Finally, EH, a high-level, multisport athlete, noted that her parents became concerned about her mental health early in the pandemic and encouraged her to reach out for professional help.

In sum, the interview data shows that youth sport participants continued to engage with their PYD climate throughout the early months of the pandemic. Almost all athletes maintained communication with teammates and coaches. Many also felt that they received support from coaches, teammates, and parents to remain motivated and to cope with the COVID-19 restrictions.

PYD Outcomes. Participants were asked questions to better understand the impact of the sport interruption on their well-being. As well, they were encouraged to discuss the strategies they used to cope with the personal, social, and emotional impacts of the pandemic.

Well-Being. Across participants’ discussions of the impact of the COVID-19 pandemic on their emotional well-being, six subthemes were identified, as elaborated below.

Ambivalence. All but five participants expressed some level of ambivalence about the COVID-19 situation. While many stated that they were disappointed about not being able to play their sport, they also expressed that they accepted it or had gotten used to the idea that they would be missing out this season or this year, as summarized by JW "I've gotten used to. I still wish I could play. But I've gotten used to it." (M; 11; FB) Most participants also expressed a similar ambivalence toward the coronavirus itself. This appeared to be due, in large part, to the age of the participants, wherein they felt that they were not at high risk of becoming seriously ill due to their youth and general level of health. However, JN expressed that he was more afraid of potentially transmitting the virus to someone who may be at higher risk of serious disease: "I think I'm healthy, kind of thing. But I'm worried about like, who I may have contact with if I do catch it. Like so, that's my worry, but I'm not worried if I get it." (M; 17; FB, BB) This sentiment was followed by an acknowledgment and a willingness to respect the current health restrictions limiting their access to sports.

Confusion. The subtheme of confusion related to the uncertainty of returning to sports and the time spent waiting for news was discussed by almost half of participants, and best described by RD who said "c'est comme émotionnellement, c'est un peu comme un yoyo *[it's like emotionally, it's kind of like a yo-yo]*." SC further specified " mais c'est plus comme de l'incompréhension qu'on vivait parce qu'on ne savait pas. Puis tu sais, on attendait *[but it's more like incomprehension that we were going through because we didn't know. Then you know, we were waiting]*." (M; 18; FB)

Motivation. The subtheme of motivation emerged across all interviews except four. Most participants reported challenges with maintaining their motivation both for staying active and for schoolwork through the early months of the pandemic. Many of these youth reflected a lack of

structure, social support, and competition, making it more difficult to maintain healthy habits and the drive to continue working out and practicing their sport. EH described all these ideas in relation to her experience:

> "I like going and working out with people or I like going and playing on a team and doing competitive sports. But not being able to do that, it's I don't know. It's kind of like the slump or something. I didn't have much to do and I was not motivated to do really anything." (F; 16; FB, W)

For other athletes, typically older ones, the pandemic was seen as an opportunity to push themselves, to spend more time on their sport practice and to get ahead. For example, as JM said:

> "It was much better for me. I sort of took it as, 'Look I'm here at my house. I want to be able to look back on this time and say, 'I got better at this, I worked harder.' And I think that's the mindset I've sort of adapted within the past sort of month and a half, two months." (M; 14; BB)

Overall, youth who were able to create and add structure to their daily schedule reported being better able to maintain a regular level of activity and to find motivation. Some youth, like TI (M; 16; FB) and GG (M; 14; BS) also reported that their coach was a key factor encouraging them to keep training and practicing. Others relied on their parents to find motivation as well, such as JN who remained motivated "'cause my parents also push me." (M; 17; FB, BB)

Positive affect. Over half of participants expressed some feeling of positive affect during their interviews. Two scenarios stood out wherein, participants expressed relief and joy about the initial break from school at the beginning of the pandemic. ANI said, "around the start I was kind of excited that I wouldn't have to go to school." (M; 12; FB, BB) For others like JM (M; 14; BB),

SC (M; 16; S) and GG (M; 14; BS), the break from sports and their busy schedules was also a welcome relief, as JM described:

> "Near the beginning of the Covid I almost treated it as a break, because I was, physically, I was very exhausted [...] Playing on two teams and then doing training on top of that, it was just a lot for me. And then maintaining a social life [...] I was thankful for it 'cause I think at that time everyone was sort of mentally and physically exhausted". (M; 14; BB)

On the other side of the pandemic break, participants reported feelings of joy, excitement, anticipation, and happiness about returning to play, both for the game and to see teammates and coaches. For example, participants stated that they were "excited to go back. I'm ready" (TI; M; 16; FB) and that "it was good to go out and see everybody and see the coaches" (EH; F; 16; FB, W).

Negative affect. Twenty-six of the 27 participants described the pandemic as having a negative emotional impact. Youth felt upset, frustrated, disappointed, lazy, unmotivated, and bored. They also expressed that they missed their sport, and that the sport interruption took away the fun of training or practicing their skills. Many participants stated that they felt stressed, in large part due to the uncertainty around reopening, and that their new daily reality was difficult to cope with. Not knowing any details about the timeline and conditions for the return to sport made coping more difficult for youth who played summer and fall sports, while those who did return during the summer experienced some stress about being exposed to the virus and frustration about the restrictions and rules they had to follow to be allowed to play. Older athletes discussed the opportunities that they felt they missed due to the cancelation of special summer tournaments or recruitment opportunities. Others struggled with the loss of social contact and social support that come from sport, saying that they were "missing out on seeing everyone" (JH;

M; 14; W, H, TF). One participant said she felt “kind of like a slump” (EH; F; 16; FB, W) from the sudden lack of physical activity and limited motivation from being on her own all the time. For his part, JH (M; 14; W, H, TF) explicitly mentioned his mental health to describe the extent of the emotional impact of the sport interruption on his own life: “I don't know. It took a toll on my mental health.” Although, many athletes did not refer to their mental health per se, these feelings were broadly echoed across interviews and coupled with the shared sentiment that athletes did not recognize the full value and importance of their sport until it was taken from them. In sum, this sub-theme captures the important role of the PYD climate in creating an experience for youth that promotes PYD and overall well-being.

Hope and optimism. Despite the significant expressions of negative affect during the early months of the pandemic, many participating youths made statements related to hope and optimism about the future. For some, these feelings helped maintain their motivation to work hard until the return to sport, as stated by JG, “I guess what's continuing to keep me motivated is that, you know, like the hope that we're still gonna have a season this year and things like that.” (M; 16; FB, BB, TF) For others, optimism appeared in relation to community efforts to come together to contain the spread of the virus, such as described by HH: “But I feel like if everybody gets tested and it's all negative and there's no room for the coronavirus, then it shouldn't even be a problem.” (M; 16; FB, BB) Overall, participants were hopeful for a quick return to sport and a return to sport-as-usual with few or no restrictions. However, as time passed, hope turned into cynicism for some athletes who initially believed that the closures would only last 2 or 3 weeks before a total return to normal. This appeared to be more common for older athletes who had a greater awareness of the news and the ongoing uncertainty and changing beliefs about the nature of the pandemic.

Coping. Five subthemes emerged related to the strategies used by participants to cope with the sport interruption and restrictions caused by the COVID-19 pandemic.

Physical activity and training. The main way in which youth coped with their inability to access their sport was through continued physical activity and training. All study participants mentioned that they remained physically active during the pandemic to varying degrees. Some youth reported a lack of motivation to stay active, thus engaging in limited physical activity, while others did daily exercise and even found that they were in better physical shape upon their return to sport compared to their pre-pandemic level of fitness. Younger participants were more likely to engage in unstructured and informal types of physical activity with family and friends, such as bike rides (ANI; M; 12; FB, BB) or walks (CC; F; 13; H), whereas older athletes were more likely to access structured training programs, materials, and a home gym or a public gym when available to them. RD described:

> "J'ai réussi à emprunter comme 2-3 dumbells à mes amis puis non, j'ai quand même fait pas mal de training, puis j'allais courir 2 fois semaine, mettons du track. Mais non même au gym quand je suis revenu, sérieux, j'avais pas perdu même que j'en avais gagné un petit peu, là, c'est ça *[I managed to borrow like 2-3 dumbells from my friends and no, I still did a lot of training, then I was going to run twice a week, let's say track. But no, even at the gym when I came back, seriously, I hadn't lost any, I even gained a little bit, that's it]*." (M; 18; FB)

Overall, participants appeared more likely to maintain a regular exercise schedule in the context of social support such as having friends with whom to work out or training programs provided by a coach or trainer, like HH who "always [had] a couple teammates over to like work

out" (M; 16; FB, BB) at his home gym, or JH who did "this school program for hockey and we did have lots of meetings and workout sessions on that." (M; 16; FB, BB)

Sport-related practice. In addition to staying physically active and engaging in general training activities, approximately half of participants also engaged in sport-related practice. These youth were more likely to have siblings or parents who shared their interest in the sport and with whom they could practice drills and honing skills from home with limited equipment. Higher level athletes and those with access to additional resources such as a gym with equipment or a personal trainer for their sport also mentioned sport-specific practice while in lockdown. For example, JM explained that:

> "I have a guy that I work with in Mississauga, basketball training. What I'll do is I'll FaceTime him; I've done this throughout Covid. I'll FaceTime him and put the phone in my driveway and he'll give me drills and different things and he'll pretty much coach me through my phone." (M; 14; BB)

Others noted that it was difficult to run specific drills at home. Instead, they focused on fundamentals, like stick handling (CC; F; 13; H) or footwork (TI; M; 16; FB), or theoretical aspects of the game, such as learning the playbook in preparation for the upcoming season (FL; M; 16; FB).

Positive coping. Throughout the interviews, participants discussed the way they were thinking about their situation and gave insight into the mindset they adopted to better cope with the sport interruption. These strategies came together to make up the sub-theme encompassing positive forms of cognitive coping, including strategies like perspective taking, acceptance, finding the positives, looking forward to the future, and taking ownership of one's own physical development and training. Cognitive coping strategies took different forms for different athletes.

Mainly, interview participants practiced perspective taking in relation to the idea that everyone was in it together, as described by HH, “Ah just knowing that it's hard for everybody and not just me, makes it kind of a little better,” (M; 16; FB, BB), or by viewing the interruption within the frame of a larger sport context such as CC’s situation: “Yeah, my season was almost over anyways.” (F; 13; H) Additionally, some youth expressed a newfound appreciation for their sport and gratitude for their access to resources, as highlighted by JM:

> “I think that I come from a background in a place that is very privileged and very lucky, and I have all of the resources I could possibly need, and I have all of the support and positivity around me that I could need to succeed and be great and achieve whatever I really want to achieve. So, I’m like, “I don't want to let this go to waste.” (M; 14; BB)

Self-improvement and skill development. Another sub-theme that was closely related to the previous theme of positive coping, is the concept of self-improvement and skill development, which emerged in interviews with older or more highly competitive athletes. As a way of coping with the sport interruption, youth discussed taking online courses and training opportunities, such as SC who said, “Puis moi, j’en ai fais 2 d’entraîneur puis 1 d’arbitre que je n'ai pas encore fini. Tse j'ai fait sur internet *[And I did two as a coach and one as a referee that I haven't finished yet. You know I did [them] on the internet]*.” (F; 16; S) Others discussed using the time away from their regular schedule to hone their skills and get ahead, like TI who said “it's giving me more chance to like, keep working, keep pushing myself. So, like I've been able to do like more at home stuff.” (M; 16; FB) FL (M; 16; FB) and RD (M; 18; FB) also shared that they got jobs and worked throughout the pandemic as an opportunity to gain experience, learn new skills, make money, and take their mind off the stress of the pandemic. Meanwhile, JM talked about “picking up other hobbies like, sort of diving more into the music, and sort of exploring what that has to

offer. Learning more about health, [...] It's sort of part of, sort of like, the whole physical health thing." (M; 14; BB)

Social contact during lockdown. The final sub-theme that emerged within the overall theme of coping with the impact of the COVID-19 pandemic restrictions was participants' reliance on social contact during lockdown. All but three participants spoke of their contact with their teammates to help them get through lockdown. Whenever possible, youth tried to see their friends outdoors to spend time together or to play a game. Older athletes were more likely to do workouts and sport-specific training activities with their friends and teammates, whereas younger athletes were more likely to chat with friends through interactive videogames like Fortnite. One participant, GG (M; 14; BS), mentioned that he met new people during the pandemic through social media. Most youth used social media and digital communication to chat with friends as often as possible, many of whom were also their teammates. Finally, for some athletes, like BB (F; 18; FF) and EH (F; 16; FB, W), social contact with teammates was necessary to regain and preserve their mental health.

Overall, the interview results illustrate the many challenges faced by youth sport participants during the early months of the COVID-19 pandemic. Although the impact of the sport interruption on athletes' well-being was apparent throughout the interviews, participants also demonstrated resilience in their ability to rely on accessible resources and to find multiple strategies to cope effectively with the sport interruption.

Chapter V

Discussion

The cancellation or postponement of sports during the COVID-19 pandemic impacted access to sports, sport participation, and sport-related outcomes for all. A convergent parallel

mixed methods study was conducted to understand the immediate and short-term impact of the COVID-19 pandemic on the youth sport experience. The following discussion contains a summary of the results and answers to the research questions and hypotheses. Moreover, a critical analysis is included, integrating the results of the current study into the context of the existing PYD literature by confirming previous findings or assumptions, and by influencing the way in which PYD through sport is understood. Finally, relevance to clinical work, coaching and education are discussed, in addition to the limitations of the research project and recommended directions for future research.

Summary of Results

Context

To gain a better understanding of the study sample and the potential bias inherent in the study results, both survey participants and interviewees were asked to report on the extent to which they think it is important for them to participate in sports. The subsample that was interviewed mirrors the homogeneity of the larger survey sample wherein both samples are biased toward positive perspectives and feelings toward sport participation. Both survey and interview data sets showed that study participants rated sports participation as a highly important and valuable aspect of their life, with few exceptions. For example, only 3% of the survey sample rated the importance of sport as moderately or minimally important, and one interview participant expressed that sport was enjoyable but not central to her life and identity. Alternatively, almost all survey participants and interviewees reported that sport participation was very or extremely important to their daily functioning and their well-being. This was evident in study participants' responses to questions about the importance and meaning of sports and in

their commitment to sport. Many participants played sports competitively, were multisport athletes, and invested many hours per week over many years in their sport.

Despite the study samples' favorable bias toward sport and sport participation, a closer look at the subthemes that emerged in the qualitative data, highlights the power of the sport environment as a vehicle for PYD and the potential ramifications of losing access to sports. Notably, one of the athletes' primary desires to return to sport was because of the aspect of enjoyment. Fun and enjoyment are cited in the literature as one of the primary reasons why sport is a unique and ideal environment for learning new skills and achieving PYD outcomes (Holt & Neely, 2011; Jones et al., 2011; Larson, 2000; Larson & Seepersad, 2003; Swann et al., 2018). The microsystem, or the relational context in which PYD occurs, should be well-structured and designed to promote fun and learning (Holt et al., 2017). Although youth were eventually able to restart schooling and regain learning opportunities and social contact through alternative means, online schooling in the early days of the COVID-19 pandemic likely lacked the motivational climate often offered by sports, representing a potentially important loss of learning opportunities.

The theme of fun is also representative of part of the personal domain of PYD outcomes defined by Holt and colleagues (2011, 2017). Additionally, the other subthemes identified in the qualitative analysis are consistent with the PYD outcomes defined in the grounded theory of PYD through sport (Holt et al., 2017). When ask to reflect on the most meaningful aspects of sports, athletes highlighted the personal domain through fun, enjoyment, and mental health; the social domain through belonging and connection, and the physical domain through physical health (Holt et al., 2017). The abrupt interruption to sport inevitably caused a real change in terms of how youth sport participants spent their time, beyond the changes in their routine related

to school and other leisure activities. Athletes lost access to daily opportunities for structured physical activity and social contact in addition to the mental health benefits that these activities and interactions entail (Bruner et al., 2017; Côté et al., 2014; Gould & Carson, 2008; Holt et al. 2017), increasing the potential for greater negative impacts on well-being and PYD outcomes.

COVID-19 and the PYD Climate

All models of PYD include a component describing social connections as a core feature. For example, Lerner's 5 Cs model includes constructs of caring and connections. The developmental assets framework refers to social support a key component of multiple external assets (Search Institute, 2005). Sport-specific PYD models include relationships with coaches and other individuals in the sport context, as well as a rich social environment as being necessary features for PYD through sport (Côté et al., 2014; Gould & Carson, 2008; Petitpas et al., 2005). Holt and colleagues (2017) further emphasize the relational nature of the sport context through which PYD outcomes can be achieved by defining the PYD climate as comprised of multiple social relationships. Both the quantitative and qualitative results of the current study were consistent in finding that athletes continued to connect with and rely on the social relationships that constitute the PYD climate (i.e., relationships with parents, teammates, and coaches) throughout the early months of the COVID-19 pandemic despite the sport interruption. Most survey respondents and interviewees reported being in contact with their teammates and coaches at least one time over the first few months of the pandemic. In the context of a public health crisis requiring individuals to isolate at home, the social connections and relational aspects of sports can no longer be maintained in-person. Nonetheless, through technology and other means, participants in this study demonstrated a desire to maintain regular social contact with individuals in their PYD climate, as defined by Holt et al. (2017). The extent and the breadth of

communication between youth sport participants and their teammates and coaches during the pandemic supports the notion that the sport context is a critical relational system through which life skills and development are promoted (Holt et al. 2017). The current data also highlight both athletes' reliance on the social system built into the sport environment and the adaptability of the sport context. Despite the absence of formal, in-person, sport activities, athletes continued to engage with the sport environment suggesting that that Holt and colleagues' (2017) definition of the microsystem as a relational system rather than a physical environment in which learning must occur, may be a more useful way of thinking about how life skills learning and PYD can occur through sport. This perspective allows for a flexible understanding of life skills transfer and how research using the grounded theory of PYD through sport (Holt et al., 2017) perspective may be conducted to develop versatile life skills programming to promote PYD on and off the field.

Extracurricular activities such as sport participation, offer youth connections with peers and team membership providing them a sense of identity (Graupensperger et al., 2020). Youth who participate in extracurricular sports and feel a sense of belonging to groups that provide positive social identities, demonstrate high levels of well-being, and increased PYD outcomes (Bruner et al., 2017). Survey respondents and interviewees reported discussing a range of topics with teammates and coaches during their frequent continued communication. The most frequently discussed topics of conversation with both teammates and coaches were return to play and training, followed by drills, and physical well-being. Athletes also discussed schoolwork frequently with their teammates. Frequent communications with teammates and coaches about sport-related topics or even schoolwork, may have allowed study participants to remain connected to their athletic identity throughout the early days of the pandemic. As seen through the qualitative data, many athletes felt a strong drive to maintain the social connections to their

sport, which may have been linked to a need for identity and the related sense of well-being they derive from that shared identity (Bruner et al., 2017). Alternatively, given the importance of sport for athletes in this samples, it is possible that strong pre-existing athletic identities acted as a protective factor driving athletes to reach out to teammates and coaches and engage in strong prosocial and resilient behaviours as coping mechanisms (Bruner et al., 2017; Gerbanis et al., 2018; Graupensperger et al., 2020). Similarly, strong pre-existing relationships with coaches may have been a key protective factor for youth who spoke about their emotional well-being with their coaches; wherein, coaches who develop strong interpersonal relationships and are perceived as trustworthy and supportive allow for youth to seek support and to talk about challenging topics such as mental health (Falçao et al., 2020; Newman et al., 2020; Swann et al., 2018). The same may also hold for athletes who discussed their emotional well-being with teammates. Previous research has shown that sports allow youth to develop close friendships built on common interests, in an enriching environment that is not only about sports, thus opening the door for psychological and emotional safety (Bean et al., 2014; Fraser-Thomas & Côté, 2009). Together with the finding that most study participants reported feeling supported by their teammates and coaches throughout the pandemic, closeness and trust in the relationships that make up the PYD climate warrant further research attention to explore the mechanisms underlying implicit processes that contribute to PYD outcomes.

COVID-19 and PYD Outcomes

Consistent with the existing literature (Bates et al., 2021; Graupensperger et al., 2020; McGuine et al., 2021), the impact of sport interruptions caused by the COVID-19 pandemic on athletes' well-being and mental health was apparent based on the survey results and the interview data. To assess their emotional responses to the sport interruption, survey participants were asked

to rate their experience of several emotions both negative and positive, and interviewees were probed throughout the interviews about their feelings related to the sport interruption. Study participants were also asked to report the extent to which they felt they received support from the individuals in their PYD climate

Negative Emotional Impact. Overall, the current findings were consistent with the existing COVID-19 and youth mental health research demonstrating decreases in quality of life and increases in reported symptoms of anxiety and depression among high school and university level athletes (McGuine et al., 2021; NCAA, 2020). Most survey and interview participants reported strong negative feelings related to the sport interruption. For example, more than two thirds of the survey participants endorsed strong feelings of frustration, sadness, disappointment, impatience, and general upset. Approximately half of the survey participants also reported feelings of anger. Moreover, many of the youth who were interviewed described their sadness and disappointment about not having access to their sport. These feelings were likely exacerbated by increased screen time and sedentary behaviour, as well as limited access to social support, leading to feelings of loneliness and isolation as has been observed in other early pandemic research across the youth population (Ellis et al., 2020, Lee et al., 2020). It follows that approximately one third of survey respondents in the current study reported high levels of hopelessness and loneliness, both risk factors for mood disorders such as depression.

Interviewees, on the other hand, did not mention feeling lonely or hopeless. However, many interview participants discussed that they missed seeing their friends and felt more motivated to engage in everyday activities and training activities when they were with others, such as their teammates, coaches or even their parents and siblings. Previous research has highlighted the protective effect of social contact and perceived social support on youth well-

being and mood during the early months of the pandemic (Lee et al., 2020), which may further explain the relatively low reports of feelings of loneliness and hopelessness, when taken in the context of youths' engagement with the PYD climate. Many interviewed youths even described feelings or attitudes of hopefulness and optimism regarding the return to sport. One interviewee (EH) who alluded to experiencing severe mental health consequences due to the sport interruption, including symptoms of loneliness and hopelessness, was prompted by her parents to seek psychological support to address her emotional well-being. This example provides an illustration of both the significant possible impacts of sport interruption on youth athletes, and the significant potential of individuals in the PYD climate, such as parents, to provide necessary, appropriate, and highly impactful support to athletes (Harwood et al., 2017).

Additionally, while none of the interviewees described feelings of anger, they expressed high levels of frustration or dissatisfaction which were further intensified by the uncertainty and confusion about when and how they would return to their sport. It is possible that feelings of disappointment and frustration were further heightened by the fact that many athletes had their seasons cut short and lost opportunities to go to playoffs, compete in season finals and, for older athletes, be seen by potential recruiters for future playing opportunities in prep school or university and college. Reactions of frustration and disappointment in addition to a preoccupation with returning to sports were expected, as such emotional reactions are typically seen among youth who are forced to stop playing their sport unexpectedly (Renton et al., 2021). This is particularly true for youth with strong athletic identities, such as older athletes who hope to play sports long term, through college and university (Renton et al., 2021). However, athletes who experience sport interruptions due to injury often experience fears related to their ability to perform upon returning to play, or about feeling disconnected from the team, as well as a certain

pressure to rehabilitate and return quickly to their sport (Podlog & Dionigi, 2010; Whatman et al., 2018). Athletes in this sample did not express notable concerns about their physical fitness or ability to return to play, rather recognizing that the entire team would need to regain their fitness level, perhaps removing some performance-related pressure that might typically be experienced by an injured player (Podlog & Diogini, 2010). Although participants in the current study expressed a strong desire to return to sport, they were less likely to endorse feelings of fear or worry related to the sport interruption or return to sport. Rather the frustration and lack of motivation appeared to stem from a global loss of control, with no specific plan for a return, much like the reactions of Olympic athletes to the postponement of the 2020 summer Olympics (Oblinger-Peters & Krenn, 2020). Moreover, the fact that all athletes were forced to stop playing sports at once, may have had some protective effect against feelings of social isolation. For example, interviewees described conversations regarding their feelings about the pandemic restrictions, and how they were able to turn toward acceptance, hope and optimism knowing that they and their teammates were all experiencing the same challenges. The knowledge that everyone on the team was living a shared experience, and their continued efforts to reach out and connect with their coaches and teammates likely allowed athletes to avoid feelings, or fears of social isolation in the same way that an injured player might experience feelings of isolation being the only one removed from the team setting during their recovery period (Podlog & Diogini, 2010; Renton et al., 2021; Whatman et al., 2018).

The survey findings and interviews were less consistent regarding feelings of worry, nervousness, and restlessness. These feelings were endorsed more highly in the survey than may have been expected based on the interview data. Although interviewees did mention some feelings of worry and slight nervousness related to the coronavirus itself and the safe return to

sport, this was expressed through feelings of ambivalence. When asked about feelings of worry or restlessness, interviewees typically turned to discussions of coping, such as changing their mindset or engaging in active strategies to remain busy and keep their mind off their worries. These findings are consistent with another qualitative study conducted by Oblinger-Peters & Krenn (2020), in which Olympic hopefuls reported engaging in various coping strategies such as distancing themselves from their training, cognitive reframing, appealing for acceptance, and planning behavior. Unlike Olympic athletes, youth sport participants rarely have access to high-level training and mental preparation. However, it is possible that their experience of PYD through sport better prepared them to engage in positive coping behaviours during the pandemic due to higher levels of emotional intelligence and resilience afforded by their sport participation (Mon-López et al., 2020). Nonetheless, the current data and other early pandemic research data (McGuine et al., 2021; NCAA, 2020) demonstrate that the COVID-19 pandemic has had important psychological repercussions on youth athletes overall, highlighting the need for the youth sport context to be better-equipped to address athletes' psychological needs. Though certain outcomes differ, the sport injury literature points to promising strategies and interventions that may be integrated into life skills programming to address these needs through explicit PYD mechanisms (Holt et al., 2020; Reese et al., 2012).

Perceived Support. Overall, study participants reported high levels of perceived support from all individuals in the PYD climate, namely coaches, teammates, and parents. Both survey and interview participants were most likely to endorse support in the form of help and discussion about training and sport-related drills from teammates and coaches. These findings are consistent with previous literature showing that the sport context allows for close and enriching relationships to be formed with peers and caring adults based on common goals and interests

(Bean et al., 2014; Swann, 2018); wherein, one may expect the support offered to be related to sports. It also follows, that youth reported generalized social support from teammates, in the form of playing games and empathizing, given that friendships with teammates often go beyond sports (Bean et al., 2014; Fraser-Thomas & Côté, 2009). Support from parents was reported to be instrumental and emotional in nature, as has been found in previous research by Dohme et al. (2021), Harwood et al., (2017), and Knight et al. (2017). Parents were able to provide athletes with access to equipment and sport-related opportunities despite COVID-19 restrictions. They were also able to adapt their involvement to help keep their youth motivated to stay active, and they behaved in supportive ways to protect their youth's mental health, as seen throughout the interview data. The level of support offered by youth's community of coaches, teammates and parents during the COVID-19 pandemic speaks to the rich social structures embedded in the PYD climate, allowing them to maintain a sense of identity and belonging despite their physical distance form the sport environment (Bruner et al., 2017; Holt et al., 2009; Strachan et al., 2011; Turnnidge et al 2012).

As hypothesized by McGuine et al. (2021), social connectedness leads to better mental health outcomes. This hypothesis is broadly supported in the literature showing that athletes who feel connected and supported by their coaches, teammates, and parents within the sport context consistently demonstrate greater acquisition of PYD outcomes (Bruner et al. 2017; Graupensperger et al., 2020; Holt et al., 2017; Swann et al., 2018). It follows that the participants in the current study may have also benefited from strong pre-existing relationships within the PYD climate and a strong sense of belonging to a caring community, given the high reported levels of perceived support. Survey respondents and interviewees even endorsed some positive feelings related to the sport interruption. Almost half of survey respondents reported feeling high

levels of motivation and more than one third reported feelings of hope and optimism. Even more, a quarter of survey participants reported feeling calm throughout the early months of the COVID-19 pandemic. This was consistent with interview data suggesting that multiple youth, despite experiencing negative affect related to the sport interruption, were also able to recognize positive aspects of their situation and to rely on various resources, namely the individuals in their PYD climate to help them remain calm, motivated to train, and hopeful for a full and quick return to sport. As previously noted, perceived social support may represent a key implicit process through which the PYD climate contributes to PYD outcomes (Holt et al., 2017).

Coping. Though the COVID-19 pandemic took a toll on youth sport participants' emotional well-being, as highlighted both in the present study and in other research investigating the impact of COVID-19 on youth athletes (McGuine et al., 2021; NCAA, 2020), an unexpected outcome of this study was the data regarding athletes' resilience and coping mechanisms that emerged from the qualitative interviews. One possible hypothesis to explain athletes' expressed resilience and positive outcomes is the simple the passage of time. Valster and colleagues (2021) found time-related variations in psychological distress among NCAA athletes, demonstrating the fluid nature of mental health and athletes' susceptibility to environmental changes over time. The current interview data also showed variability in youths' well-being and emotional states at different points in the pandemic. In the earliest days of the pandemic, youth felt happy and relieved to have a break from school. Simultaneously, many youths expressed frustration regarding the sport interruption but remained hopeful that sports would quickly resume and therefore did not experience significantly high levels of negative affect in the immediate aftermath of the COVID-19 shutdowns. However, over time frustration regarding online schooling, in addition to the lack of or limited access to sports, began to outweigh the perceived

benefits of the initial interruption. Meanwhile, athletes who had begun to regain access to their sport at the time of the study, through summer sports leagues and by virtue of playing a sport where social distancing can be easily implemented, such as baseball and softball, reported new increases in positive affect despite small frustrations regarding new rules and COVID-19 protocols. Although it cannot be known with certainty, it is likely that the current results were influenced by timeline variables dependent on the sport played by the athlete and the specific time at which they participated the study.

In addition to typical fluctuations in stress and well-being, the interview data showed that youth intentionally engaged in a range of coping strategies. This aspect of PYD outcomes had not been considered in the conception of the survey, which was designed to explored engagement with the PYD climate and emotional outcomes related to the sport interruption. However, coping strategies accounted for such a large portion of the athlete interviews that they could not be discounted in the analysis and discussion of PYD outcomes as impacted by the COVID-19 pandemic. The types and sophistication of the coping strategies described by youth varied, particularly by age; younger athletes were more likely to use external supports, such as parents and coaches, and older athletes showed more initiative and intrinsic motivation to engage in behaviours to help them manage their emotions and thoughts about the COVID-19 pandemic. These differences in coping strategies by age are expected as they rely on developmentally appropriate skills sets (Williams & McGillicuddy-De Lisi, 1999). Coping strategies ranged from movement and other sport-related behaviours such as engaging in physical activity, training, and practicing sport-related drills, to relational strategies like reaching out for social support, to cognitive strategies such as engaging in adaptive cognitive emotion regulation strategies, like perspective taking, acceptance, and planning for the future. Many of these coping strategies

resemble those often recommended to injured athletes (Podlog & Diogini, 2010; Reese et al., 2012), further highlighting the potential value of their implementation in life skills programming to explicitly teach these skills and make them accessible to all youth sport participants (Gould & Carson, 2008; Holt et al., 2017).

Although the COVID-19 pandemic had a negative and, in some cases, devastating impact on youth mental health, the results of the current study add valuable nuance, by allowing youth to describe how they worked through some difficult and negative emotions in their own words. Based on the assumptions of the grounded theory of PYD through sport and other PYD through sport models, it is possible that coping strategies were learned by youth over years of participating in sports, either through implicit or explicit mechanisms, ultimately preparing them to rely on these skills when faced with significant life challenges (Gould & Carson, 2008; Holt et al., 2017; Petitpas et al., 2005). Alternatively, or in parallel, access to a network of social resources inherent to the PYD climate may have provided a key protective factor to youth who might have been less successful in their ability to cope with stress in the absence of caring adults and close and unique friendships found through sport (Holt et al., 2017).

Relationships Among Variables

A series of Chi square analyses was conducted to investigate the relationships between PYD climate and PYD outcome variables. Specifically, the goal was to determine whether athletes' engagement with the PYD climate (e.g., frequency and content of communication with teammates and coaches) was related to their reported emotional outcomes and perceptions of receiving social support.

The frequency of contact between athletes and the individuals in the PYD climate was not significantly related to the reported intensity of their emotional reaction to the sport

interruption caused by the COVID-19 pandemic. Similarly, the frequency of contact between youth and their teammates was not related to their perceptions of being supported by their teammates. Only one significant finding emerged in which the frequency of contact with coaches was associated with youths' perception of feeling emotionally supported. Previous research has shown that youth are more likely to connect and communicate with coaches they deem to be trustworthy and supportive (Falçao et al., 2020; Swann et al., 2018). Notably, in the survey data only approximately one quarter of athletes who had contact with their coaches during the pandemic reported feeling emotionally supported by their coach. As such, those athletes who felt emotionally supported by their coach are likely those who were also more likely to have more frequent contact with their coach outside of the sport context (e.g., more than once per week).

More significant findings emerged when exploring the content of athletes' communications with their teammates and coaches. Youth who had discussions about sport-related topics, like training and drills, were more likely to report higher feelings of support from coaches and teammates. They were also more likely to report higher feelings of support associated with discussions about schoolwork and the return to sport. Athletes were more likely to report feelings of emotional support from teammates with whom they discussed their physical well-being, emotional well-being, schoolwork, and the return to sport. The same was true for discussions with coaches, in addition to feelings of emotional support associated with sport-related topics of discussions. As with frequency of contact, the contact with coaches, regardless of topic of conversation was associated with perceived emotional support. Again, this appears to be consistent with previous research findings demonstrating that youth are more likely to connect with coaches with whom they have trust and closeness (Falçao et al., 2020; Swann et al., 2018), indicating the possible need for a high-quality relationship within the dyad for athletes to benefit

from positive outcomes, such as feelings of social and emotional support, regardless of the way in which youth chose to engage with their coaches (Davis & Jowett, 2014). Meanwhile, with teammates there appears to be a distinction between the topics of conversation (e.g., emotional well-being, physical well-being, schoolwork, return to sport) associated with perceived emotional support, and those (e.g., training, drills) related to general perceived social support. As seen in the literature, athletes report the social benefit of sport participation as being able to develop friendships based on common interests that are not just about sports (Bean et al., 2014; Fraser-Thomas & Côté, 2009). Given the variability in types of peer relationships (Brown, 2004), it is possible that, in line with the current data youth seek support from different peers, or different types of interactions with peers to meet different social and emotional needs. For example, discussing topics that evoke more emotion or vulnerability with specific peers who can offer emotional support, versus discussing more general interest related topics when simply seeking general social support from peers. Within the sport environment, this supports the notion that athletes benefit from a multitude of social experiences that give rise to various social-emotional learning opportunities (Schilling et al., 2007; Turnnidge et al 2012).

Many significant associations were also found between reported emotional reactions to the COVID-19 pandemic restrictions and the content of athletes' communications with their teammates. Overall, most topics of conversation were related to higher ratings of negative emotionality, including discussions about return to sport, sport-specific content, physical well-being, and emotional well-being. Return to sport was the topic associated with the widest range of negative emotions. This is likely a reflection that returning to sports was the most widely discussed topic among teammates. However, the topic of training was as frequently discussed and was not associated with reportedly high levels of as many negative emotions. As suggested

by the qualitative data, return to sport was likely the topics that elicited the most emotionally intense conversations among peers, perhaps indicating youths' emotional attachment to their sport and strong desire to return to their sport, to have fun and to connect with others (Bruner et al., 2017; Swann et al., 2018). Fewer associations were also found between athletes' reported emotional outcomes and the content of conversations with coaches. Specifically, an association between worry and discussions of physical well-being was found, perhaps indicating one of athletes' main concerns when discussing the possible impacts of the COVID-19 pandemic with their coaches. Additionally, conversations about drills, schoolwork, and the return to sport did not appear to help athletes feel relief or calm but rather tempered those feelings. Such findings are consistent with the negative emotional outcomes and concerns often expressed by athletes who experience significant sport interruptions due to injury (Podlog & Diogini, 2010; Renton et al., 2021) and may be reflective of the lack of certainty that athletes experienced regarding the return to sport. Conversely, a significant association was found between conversations with coaches about emotional well-being and higher reported feelings of motivation. Moreover, greater feelings of motivation were associated with discussions of sport-specific drills with peers. Perhaps conversations about things over which youth felt they had more control engendered a greater drive for some athletes to improve their situation and allowed youth to further benefit from the social support they received for teammates and coaches. This is consistent with the qualitative data showing that athletes engaging in positive coping strategies, such as physical exercise and maintaining social contact, often felt more motivated and reported feelings of acceptance regarding their situation. Similar findings were also found among a sample of Canadian youth who had lower levels of distress when adopting various coping strategies

including physical activity, safe peer interactions, and hobbies during the first wave of the COVID-19 pandemic (Ferguson et al., 2021).

Finally, a counter-intuitive pattern of results was found when investigating the association between athletes' reported emotional outcomes and perceived emotional support by teammates and coaches. With teammates, the intensity of emotional reactions to the COVID-19 restrictions was significantly related to reported feelings of emotional support for a range of negative emotions, including sadness, worry, feeling upset, fear, frustration, overwhelm, loneliness, and anger. With coaches, reports of perceived emotional support were related to higher feelings of frustration and loneliness. The same pattern of results emerged across all contingency tables wherein, athletes who reported high levels of negative emotions were more likely than expected to report that they felt emotionally supported by their peers or coaches, while those reporting the lowest intensity of negative emotion were significantly less likely than expected to report feeling emotionally support. The current findings are not expected, as the literature consistently shows that athletes who experience close and trusting relationships with peers and coaches, which presupposes a certain level of emotional support, typically experience more positive PYD and mental health outcomes (Bean et al., 2014; Falçao et al., 2020; Holt et al., 2017; McGuine et al., 2021; Swann et al., 2018). However, previous research has generally sought to understand the occurrence of PYD outcomes resulting from variables existing in stable environments over longer periods of time, whereas the current data reflects the short-term impacts of a stressful life event. It is possible that athletes who were more likely to feel negative emotions, sought support from others more actively and were more likely to feel that they received emotional support from peers and adults because they already had relationships with these individuals due to their sport participation and a positive pre-existing PYD climate.

Alternatively, Ellis and colleagues (2021) found increased symptoms of depression despite decreased feelings of loneliness among youth spending significant amounts of virtual time with peers. Given the emotionally heightened context in which peers were interacting in the early days of the pandemic, youth may have tended to feel more negatively about their situation after speaking with others about the COVID-19 pandemic and the lack of access to sport, suggesting possible negative peer influences (Fraser-Thomas & Côté 2009).

Taken together, these findings are valuable in exploring the link between the PYD climate and PYD outcomes hypothesized by the grounded theory of PYD through sport (Holt et al., 2017). Particularly, the differences seen between outcome-related interactions with coaches compared to interactions with teammates both within and outside the sport environment, are important to consider when investigating the implicit mechanisms underlying skill transfer and personal growth. Given the different qualities that individuals bring to their relationship with the athlete, future research may consider the different ways in which each relationship can be harnessed to foster PYD outcomes, in addition to how the various relationships interact to produce optimal PYD outcomes. Additionally, findings related to the frequency and content of communication with the PYD climate highlight a significant distinction between the variables in the way they contribute to the quality and benefits of athletes' relationships with teammates and coaches. Considerations regarding the impact of frequency versus the content of what is being communicated with athletes may have important implication when designing PYD programs and studying explicit mechanisms for life skills learning through sports (Holt et al., 2017).

Meta-inference

Research Question 6: To what extent do the qualitative results help explain and add context to the quantitative survey results?

With few exceptions, the qualitative results are consistent with the quantitative survey results and provide important contextual information that adds meaning to the interpretation of the quantitative data. Certain results within the quantitative data set seem counter-intuitive at first glace, such as the high proportion of respondents who reported strong feelings of motivation, or that some athletes reported feeling happy or relieved because of the pandemic lockdowns. Based on the interviews, it is understood that there may be factors beyond but related to the sport interruption contributing to feelings of happiness and relief, such as a break from school or a busy schedule. The interviews also showed how these emotional states varied over time. For example, study participants felt relieved at first, but grew discouraged and restless as the restrictions extended over the course of several months. Alternatively, some athletes felt instantly shocked and disappointed about the sport interruption but were able to adapt and find motivation to cope with the restrictions and work on their skills independently. As such, survey responses must be viewed as a snapshot of a certain population at a specific point in time. This is especially true in a rapidly changing environment such as the COVID-19 pandemic. For instance, reported rates of hopelessness and sadness may have been different if the survey had been completed one or two months earlier, whereas rates of optimism may have been even higher than expected if the survey data had been collected in the fall months as return to play became more widespread. Having been conducted in parallel with the survey, the interview data thus provides valuable context for understanding the survey results at the specific point in time at which data was collected (Creswell, 2015). Finally, in addition to adding nuance and confirming the quantitative

data, the qualitative findings added significant value to the study. A major theme that was not originally considered at the outset of the study emerged during the interviews: the theme of coping. This central aspect of the youth sport participant experience and their well-being during the COVID-19 pandemic would have been overlooked in the absence of the mixed methods approach.

Research Question 7: What can be learned about PYD through sport by comparing and integrating both data sets: the quantitative survey data on communication with the PYD climate and youths' emotional experience during COVID-19 restrictions, and the qualitative data about athlete coping and well-being?

Evaluating the quantitative and qualitative data together gives rise to overarching conclusions regarding the unquestionable impact of the sport interruption on youth sport participants. Above and beyond the losses that all youth experienced, such as school and leisure activities, youth sport participants lost immediate access to an important aspect of their daily social support and physical activity. For most athletes, the sport interruption had a negative impact on emotional well-being. This was consistently found across various research studies investigating the mental health and well-being impacts on amateur and professional athletes in the first few months of the COVID-19 pandemic (Graupensperger et al., 2020; Mon-López et al., 2020; Pillay et al., 2020; Schinke et al., 2020; Wong et al., 2020). Few studies examined the youth sport population; however, the experience for athletes appears to be universal. For example, a group of Olympic hopefuls for whom the prospect of being able to compete in the Olympics was no longer certain similarly described feelings of confusion, disappointment, lack of motivation and, for some, feelings of relief and an opportunity for performance improvement and recovery (Oblinger-Peters & Krenn, 2020). Mehrsafar and colleagues (2020), noted a

significant increase in the demand for sport psychologists to help athletes cope with fears related to COVID-19 infections as well as anxiety concerning the limited of access to fitness centers, disturbed sleep and eating habits, family conflicts, and an overall inability to effectively cope with the sport interruption. In addition to the sport interruption, athletes were faced with other significant changes related to sport participation that likely exacerbated feelings of negative affect, such as sudden decreases in physical activity, changes in routine, diet, and sleep patterns, increases in screen time and overall isolation resulting from social distancing measures (Pillay et al., 2020).

Despite their shared experience of the sport interruption, youth sport participants are a heterogeneous group. As the pandemic evolved, its differential impact on individuals with varying demographic features became increasingly clear, as highlighted through the interview data. Specifically, older, more competitive athletes expressed greater concerns about the negative impact of the sport interruption on their continued growth as athletes and prospects within the sport, often related to missed summer tournaments and scouting opportunities. Furthermore, female athletes appeared to experience more distress regarding the social isolation and limited access to their peers. Pons et al. (2020) found higher rates of anxiety and depression symptoms among female athletes. As well, a large study of high school athletes by McGuine et al. (2021) similarly found higher levels of anxiety symptoms among female athletes, while older athletes reported the lowest levels of functioning on the Pediatric Functional Activity Brief Scale. As reflected by McGuine et al. (2021), given the results of the current study, it is likely that older athletes experienced an additive effect of multiple losses in addition to the sport interruption, such as cancelled graduations, proms and other rites of passage usually experienced during the late adolescent and young adulthood years. For some, this sport interruption may have signalled

a sudden ending of a sport career or an unexpected transition out of sports, which has been found to be more difficult than when an athlete has notice or has made an autonomous decision to end their sport career (Reardon, et al., 2019).

Of particular concern, and central to the research questions posed in this study, is the impact of social isolation on youth sport participants. From a PYD through sport perspective, the power of the PYD climate lies in the connections that youth create with the people with whom they interact in their sport environment (Holt et al., 2017). Thus, pandemic health restrictions such as social isolation and distancing are antithetical to a core active ingredient of PYD through sport. Given that youth experience increased desire for social connectedness and autonomy, particularly during the adolescent years, limiting youths' ability to access social support, inherent in the PYD climate, may have amplified the distress caused by such unfamiliar social isolation measures (Davis et al., 2020; Ellis et al., 2020). Indeed, social isolation measures imposed at the beginning of the COVID-19 pandemic have been found to have significant negative impacts on youth at large, affecting important PYD outcomes. For example, among non-athlete youth physical distancing measures were associated with significant decreases in physical activity, increases in social media, internet use and screen time, as well as more time spent alone, and decreased happiness (Moore et al., 20202; Munasighe et al., 2020). Social media use, particularly more time online with friends, was associated with higher levels of loneliness (Ellis et al., 202). Social distancing has also been associated with significant increases in symptoms of anxiety and depression both among non-athlete youth and athletes (Ellis et al., 2020; Pons et al., 2020; Waselewski et al., 2020). Limited access to resources such as social support and training, that might typically be made available through the PYD climate, was also associated with poorer outcomes for youth (Jagim et al., 2020; McGuine et al., 2021; Pons et al., 2020; Qi et al., 2020;

Waselewski et al., 2020). Overall, the current survey data assessing youth sport participants' emotional reactions to the sport interruption appears to align with other research findings, in that a high prevalence of negative affect was reported including significant feelings of sadness, frustration, upset, impatience, and anger, in addition to a relatively lower albeit concerning prevalence of significant feelings of loneliness and hopelessness. However, the survey findings also show approximately half of youth reporting strong feelings of motivation and optimism. Combined with the qualitative interview data, it becomes apparent that while it may be true that many youth athletes experienced significant negative affect, the emotional experience related to the sport interruption appears to be more complex. Lacking a PYD perspective, other research studies focus solely on the negative impacts, or the pathology-related outcomes associated with the experience of social isolation. They fail to consider the resources that continue to be available to athletes through the PYD climate even in the absence of face-to-face contact, which may help to explain reported positive affect and positive coping by youth sport participants.

Based on the current findings, the youth sport context, and more specifically the PYD climate, appeared to be an important protective factor for youth during the early months of the COVID-19 pandemic. The emotional impacts of the sport interruption were certainly felt and were evident both in survey data and in the qualitative descriptions provided by youth. However, it is also clear that the PYD climate played an important role in youths' ability to cope with these challenges. Many youth engaged with, relied on, and felt supported by their PYD climate. Teammates, coaches, and parents were vital in helping youth feel less socially isolated, maintain optimism, and increase their motivation to stay active and prepare for the return to sport. Taken together, the data show that the PYD climate extends beyond the bounds of the playing field and transcends the physical sport context by way of the meaningful relationships that define it;

teammates become friends, coaches act as mentors and role models, and parents provide care for the whole child. In the absence of sport itself, the relationships that define the PYD climate likely continued to protect and promote mental health and PYD throughout the sport interruption.

The support received by athletes appeared to be particularly meaningful in this time of crisis and unknown caused by the COVID-19 pandemic, and differed from other experiences of sport interruption, such as those due to injury. Of note, most athletes surveyed and interviewed reported high levels of overall perceived support from every aspect of the PYD climate (i.e., teammates, parents, and coaches). When asked specifically about emotional support, the survey results showed that youth were more likely to receive emotional support from their parents and less so from teammates, followed by coaches. However, interview data suggests that youth may not have been explicitly aware of the emotional support they received, particularly from teammates and coaches, but rather benefited from emotional support as a by-product of their social contacts with these individuals. These findings are consistent with previous research demonstrating that athlete performance and injury recovery benefit from routine interpersonal interactions, emotional sharing and processing, and social recovery within the sport context (Davis et al., 2020; Heidari et al., 2019). Furthermore, youth with fewer negative outcomes resulting from social distancing are those who remained connected to others, reported higher levels of perceived social support, and engaged in more family time (Ellis et al., 2020; Moore et al., 2020; Qi et al., 2020). However, some findings caution that online relationships can differ in their level of supportiveness thus influencing youth outcomes (Ellis et al., 2020). Among NCAA athletes, Graupensperger et al. (2020) found that those who received higher levels of social support and felt more connected to teammates, maintained a stronger athletic identity throughout their social isolation. Athletes with a stronger athletic identity ultimately reported better mental

health outcomes and well-being during the early month of the COVID-19 pandemic (Graupensperger et al., 2020). Thus, having strong links to the PYD climate appears to mitigate some of the potential negative effects cause by imposed social isolation protocols in the COVID-19 context. One possible explanation for this is that connection with others, such as teammates and coaches, decreases feelings of loneliness which give rise to symptoms of depression (Ellis et al., 2020; Lee et al., 2020). As such, whereas it may be assumed that team sport participants may have had more difficulty coping during the pandemic and experienced more loneliness and depressive symptoms, due to a greater loss of social contact (Lee et al., 2020), those athletes who are able to maintain strong, supportive social connections through the PYD climate may in fact have better outcomes (Eime et al., 2013).

In addition to the social and emotional benefits of engaging with the PYD climate beyond the bounds of the sport arena, supportive relationships with coaches and parents may have also allowed athletes to extend the life skills learning they achieved while playing sport into their home environment during social distancing mandates. Athletes who connect with key adult figures, like coaches, through strong and supportive relationships gain greater PYD outcomes such as self-control, social responsibility, and social competence, and more readily transfer these skills to other areas of their lives (Newman et al., 2020). It follows that athlete who came from positive and caring PYD climates would be better equipped to comply and cope with social distancing mandates, and to further continue growing given the additive effects of having strong connections with multiple key adults (Newman et al., 2020). During lockdown, coaches who continued to provide a caring climate, through their contact with athletes, may have been able to influence youths control over their emotions, their sense of well-being, their perceptions of support, and their ability to transfer those skills to their life at home (Gerabinis et al., 2018).

Furthermore, a caring climate can also decrease feelings of burnout and increase athletes' feelings of belonging and athletic identity which may further serve to mitigate the negative impacts of isolation and possible feelings of loneliness (Gerabinis et al., 2018; Into et al., 2019; Newton et al., 2007).

Another key player in the PYD climate is the parent. Though parents may, at times, be somewhat removed from the sport context giving the appearance of being a less present or important part of the PYD climate, their presence during the COVID-19 pandemic is undeniable. Across survey and interview participant responses, parents appeared to play an important role in terms of providing pragmatic support and tools for coping with the daily challenges related to the sport interruption and to the COVID-19 pandemic more generally. Parents were also central figures in providing emotional support to their youth. These findings are consistent with research by Harwood and colleagues (2015; 2017) describing parents' key supportive role in the sport context. Early pandemic research also demonstrated that youth who spent more time with their families were more likely to report higher levels of well-being and lower negative affect or negative outcomes (Moore et al., 2020; Ourgin, 2020; Palaez & Novack 2020). In addition to providing support, parents were able to reinforce life skills learning and transfer, thus giving athletes continued opportunities for PYD growth through the hardships of the COVID-19 pandemic. For example, interviewees reported that their parents helped them stay organized and motivated to stay active despite being at home every day. Besides parent support, the interview data provided invaluable insight into one of the limitations of the grounded theory of PYD through sport by Holt and colleagues (2017). Although the model includes parents as a key component of the PYD climate, it fails to address other family members, thereby excluding the value and possible support of siblings or chosen family, which may be more common or relevant

among disadvantaged youth populations. Multiple interviewees discussed the important role of their siblings during the stay-at-home orders. Often siblings also played sports, practiced skills with study participants, provided additional opportunities for fun and enjoyment, and gave athletes a safe and supportive space to share their challenges; all fundamental processes involved in the promotion of PYD through sport (Bean et al., 2014; Fraser-Thomas & Côté, 2009; Swann et al., 2018). Arguably siblings and other chosen family members (e.g., peers or important adult figures) should be included in the PYD climate to provide for a more inclusive and comprehensive model.

Finally, throughout the COVID-19 pandemic, sport organizations were faced with multiple administrative and logistical challenges (Rich et al., 2021). Interview participants' reports were consistent with other research findings demonstrating that while some organizations struggled with communications and decisions making, others took on these challenges with leadership and success (Galily, 2021). While resources differ significantly, the youth sport community may learn lessons from the high-performance domain in terms of how to best support athletes (Schinke, 2020). For example, through calls for more sport psychologists and better access to mental health support for athletes (Schinke, 2020). Although this may not be a feasible solution for youth sport level organizations, creative interpretations of such ideas may be beneficial to enhance youth well-being. For example, initiatives could include training and support for coaches to better address mental health concerns, or funding for community-based mental health support as an added prong to the PYD climate. Finally, life skills programming may also be intentionally designed to offer explicit coping skills training through psychoeducation that can be implemented both in the sport environment and at home.

Implications for Research and Practice

In their 2017 meta-synthesis proposing a grounded theory for PYD through sport, Holt and colleagues put forth five broad hypotheses to guide future research. The current study does not directly address the hypotheses but may offer insight related to the first three hypotheses and give rise to relevant research questions. First, Holt and colleagues (2017) posit that "distal ecological systems and individual factors influence PYD through sport" (p.38). The authors note that the distal ecological system is not the focus of the grounded theory of PYD through sport. However, they explain that this is partly because distal ecological systems have yet to be thoroughly addressed in research. Observations made in this study suggest that the macrosystem warrants further research attention as its potential to significantly impact and reshape the sport context (i.e., microsystem) may have been previously underestimated. This is particularly true in the current socio-political climate that is giving rise to increasing uncertainty regarding the state of the distal ecological systems in which sport programs exist. Although the current data does not specifically examine the interaction between the sport system and the distal ecological system, it highlights the interconnected nature of both distal and proximal systems, and the resulting impact on athletes' daily lives and well-being. As was observed during the pandemic, and as seen in the interview data, there exists significant variability in sport organizations' ability to respond quickly and to adapt to major events in the distal ecological system (Galily, 2021; Rich et al., 2021). Some sport programs were relatively well-equipped to address sudden and major changes to the sport environment and are resilient enough to get athletes back on the field quickly; however, many programs lacked the infrastructure and resources to do so during the early days of the COVID-19 pandemic, leaving many youths without sports for significant periods of time, or permanently (Aspen Institute, 2021; Galily, 2021). Whereas major theories (Côté et al., 2014;

Gould & Carson, 2008; Petipas et al., 2005), thus far, have focused on the intra-and interpersonal aspects of PYD through sports, the findings of the current study lend further support for maintaining a social-ecological perspective and investigating the broader context when studying PYD through sport.

The second hypothesis proposed by Holt and colleagues (2017) suggests that the PYD climate on its own can produce PYD outcomes. Within the context of the current study, the removal of the sport practice allows for a clearer focus on the meaning of the PYD climate as defined by Holt et al. (2017). It also makes it easier to conceptualize the PYD climate as a network of interconnected relationships that extends outside of the sport environment and that can have its own unique impact on youth outcomes. As shown by the current study, athletes continue to interact with the PYD climate in the absence of physical sport practice. Thus, although the PYD climate is something that comes to exist because of sport participation and practice, the PYD climate, in itself, can theoretically rely solely on the relationships comprised within it for youth to derive developmental benefits; sport then becomes a vehicle through which the active ingredients of those relationships contribute to PYD outcomes. The results of this study highlight the need to further investigate the implicit mechanisms through which PYD outcomes arise from the relationships that define the PYD climate. For example, frequency of contact does not appear to be a critical factor underlying the quality and the impact of the relationship that athletes have with their teammates or coaches. The confirmation of such a hypothesis could have significant implications in settings where coaches and athletes have access to fewer resources or practice less frequently. In addition to investigating one-on-one relationships between athletes and their teammates, coaches, and parents respectively, it would be valuable to investigate questions related to the way in which the relationships that make up

the PYD climate interact. For instance, previous research has found that the quality of coach-athlete relationships can vary based on the extent to which athletes integrate their parents' views of their coach (Harwood et al., 2017). It follows, that interactions between various relationships may impact athletes' ability to derive PYD outcomes from the PYD climate which could have significant practical implications. The findings of this study also offer evidence to suggest a broadening of the way in which the PYD climate in conceptualized. The current definition of the PYD climate (Holt et al., 2017) includes teammates, coaches, and parents, which may simply reflect the limitations of the existing research from which the model was developed. Nonetheless, based on the current study results, it can be argued that the parent component of the PYD climate should be expanded to include all potential family or chosen family members, such as siblings or close family friends, with whom youth athletes interact in relation to their sport and who have the potential to influence life skills transfer and youth development overall.

Finally, the third hypothesis postulated by Holt et al. (2017), states that PYD outcomes can be attained if a life skills focused program is in place in the presence of a PYD climate. Although the current study did not investigate life skills programming or life skills attainment, the high frequency and quality of contact between athletes and the members of the PYD climate supports the potential for life skills learning and transfer beyond the sport environment. As outlined by Gould and Carson (2008), life skills development depends on athletes' internal and external assets, experiences created by coach competencies and methods, and the social environment in which learning occurs. With COVID-19, this study showed that athletes continue to engage with and benefit from the existing external assets that contribute to positive development and life skills learning. It also provides for a more flexible approach to studying life skills transfer, which usually places the onus on the coach to be providing life skills lessons that

are built into the sport practice. In contexts resembling the early days of the COVID-19 pandemic, pressure may be taken off the coach as life skills programming can no longer occur during sport practice. The observer can then more easily shift their focus to evaluate how coaches and parents interact to offer life skills learning to their youth, as well as how parents can provide continuity for life skills transfer outside the sport setting. From a research perspective, this lens shifts the responsibility away from the coach, to be viewed as a more evenly shared responsibility across all stakeholders. Intentionally designed life skills programming should account for the complex relational dynamics within the PYD climate, where transfer of life skills may be achieved through continued communication between individuals within the PYD climate across time and space.

Overall, these study findings confirm the need to further investigate and perhaps broaden the scope of what are the active ingredients underlying both the implicit and explicit mechanisms that drive PYD through sport. Consistent with the grounded theory of PYD through sport (Holt et al., 2017), the PYD climate within the context of this study can indeed be understood as the relationships between athletes and their coaches, teammates, and parents, and as a construct that offers opportunities for athletes to feel supported and to grow as individuals, even through challenging life events. Additionally, the current findings give rise to important clinical and mental health implications, as they speak to the value of investing in relationships early in the sport life cycle to ensure that PYD outcomes can be more effectively attained through implicit processes. As well, life skills programming, if mindfully designed to involve all players in the PYD climate may be particularly effective in supporting positive mental health and well-being outcomes and providing opportunities for continuity and growth while athletes are not actively playing sports, whether it be during a global pandemic, due to injury, or during the off-season.

Limitations

Limitations exist both related to each research method included in this mixed methods design and to the restrictive nature of conducting research in a global pandemic. First, despite efforts to recruit a broad representative sample of the Canadian youth sport population, the survey sample is skewed both toward football playing and male participants. This was mostly due to the recruitment methods. Given the drive to be in touch with participants in real time, the environmental circumstance, and the principal investigator's pre-existing relationship with the Football Canada organization, recruitment within that participant pool was widespread and significantly promoted by the organization itself. Meanwhile, recruitment through other organizations, though supported by each participating sport organization, was not as heavily promoted. As a result, most participants were football players, or multisport athletes who played football as one of their sports. From that, the sample was skewed toward male participants. Although this is consistent with the gender distribution in sport participation among Canadian youth, a more gender-balanced sample may have given rise to different, more equitable, insights.

Furthermore, the sample was likely biased due to voluntary nature of the study. As described above, most study participants viewed sports as an important aspect of their lives, and many were multisport athletes. As such the impact of a sport interruption is likely more significant or disruptive for these individuals compared to youth who do not identify as much with sports or who play sports for reasons other than their own choosing.

The design of the survey should be addressed as a limitation as well. Although the questions were compiled using the grounded theory of PYD through sport as a framework, they are not based on standardized measures of PYD outcomes used in PYD research or those used in mental health research. As such, the results of this study cannot be directly compared to other

research findings and may also be limited in their construct validity. While the goal was not to measure pathology, as that is antithetical to PYD as a theoretical framework, there may have been value in using a standardized measure of depression, anxiety or general functioning and well-being. Again, this may have allowed for the results of the survey to be directly compared to other studies investigating mental health and youth well-being during the COVID-19 pandemic.

Finally, given the overwhelming and encompassing nature of the COVID-19 pandemic, limitations related to both designing and conducting resource-intensive research in a short time make it impossible to infer causality from the research findings. For one, the study design is limited in its lack of a comparison group comprised of non-athlete youth. As well, data was collected at a single time point using a cross-section of athletes who were at different stages of their sport season when COVID-19 restrictions were implemented and in relation to their return to sport. Efforts were made to pose specific questions linking outcomes to the sport interruptions. However, it is impossible to know as a researcher, and even as a study participant, whether outcome measures are specifically linked to the sport interruption or to the school interruption, for example. Indications of this were seen during the interview process, wherein school was discussed by every study participant, and was a significant confounding factor. Rather, the results of this study are best understood as one piece of a complex and evolving network of interacting variables and should be interpreted with caution.

Directions for Future Research

The COVID-19 pandemic has introduced new generations to the existential threats posed by globalisation and climate change, and the reality that more major public health crises and disruptive environmental events are likely to occur (Cluver et al., 2020). Society at large has resultingly changed and will likely never return to baseline. These are changes that impact global

systems that in turn impact youth and youth development. Thus, while many are seeking ways to return to a status quo that existed before the COVID-19 pandemic began, it may be worthwhile to consider how to adapt current systems to support PYD moving forward. Regarding the sport context, this means ensuring that youth sport systems are flexible enough to adapt and manage crises as they arise, while remaining accessible and inclusive for all youth. The youth sport system is a crucial vehicle for PYD for millions of youths across the globe, particularly those with limited resources. Therefore, is it important to consider what can be done to harness its power, by optimizing life skills transfer and mental health support, so youth can continue to acquire PYD benefits beyond the playing field. Based on years of research, it is abundantly clear that teammates and coaches play and integral role in PYD, in addition to parents. The current findings illustrate the value of conceptualizing the PYD climate as defined by Holt et al. (2017), as many youths continue to rely on these resources, namely teammate and coach support, even in the total absence of physical sport.

The COVID-19 pandemic also highlighted many disparities that exist in the current society both locally and on a global scale. This is true for youth sport participants as well. Due to disparate allocation of resources, some youths were able to return to play much more quickly than others; some youth had access to training facilities while others did not; some youths were able to remain connected with teammates and coaches while others were not; and these are but a few examples of the inequalities that exist in the youth sport domain. With this, an entire generation of children may have missed out on accessing sport and its benefits altogether. Signs of this have already been seen across several leagues that have reported significantly lower participation rates since the return to sport, both in terms of dropout and failure to start (RSEQ, 2021; Watson & Koontz, 2020). For some children and youth who have either dropped out or did

not enter sports over the last two years, sport may have been a crucial factor for optimal PYD. With the insights gained from the current research study, there may be future opportunities to engage youth in PYD through sport in ways that do not necessarily involve a high initial commitment to sport itself. For example, sport programs designed for beginners with PYD in mind may aim to maximize life skills learning and connecting lessons to the home environment while keeping sport participation accessible, engaging and fun. By extension, youth sport organizers may seek creative ways to extend the youth sport context and PYD climate into the home. Rather than being a place where parents drop off their children for a discrete amount of time, the youth sport setting should aim to build community based on strong relationships where meaningful bonds and partnerships are formed between organizers, coaches, parents, and youth. The focus of research and development efforts should be to increase access for the most vulnerable youth as "all youth deserve a sports and physical activity infrastructure that provides a foundation for lifelong health and success" (Watson & Koontz, 2020).

A key finding of this study is that the reach of the PYD climate extends beyond the playing field. Youth are able and willing to engage with the PYD climate even when not physically engaged in their sport, and they additionally appear to derive benefits from such contacts. As such, it is important to find ways to enhance the potential for greater PYD outcomes within these PYD climate interactions. One approach may be to engage and strengthen families to respond to needs and care for the youth in questions (Harwood et al., 2017; Watson & Koontz, 2020). As well, the COVID-19 pandemic has prompted a need to think about life skills learning and transfer in a more intentional way. Though this need not be done through explicit life skills learning, coaches and parents may be encouraged to be more creative and intentional in the way they model behaviours and harness teachable moments to further promote and enhance life skills

learning and transfer even if done through implicit pathways (Bean et al., 2020). Another way in which life skills learning and transfer can become more intentional is through yearlong engagement and implementation, rather than stopping at the end of the sport season. For instance, innovative technology can be designed to allow coaches to continue working with their athletes during the offseason in a systematic way, and to monitor their progress whether on sport-specific skills, or life skills practice. Throughout the pandemic, many curricula, such as SEL programs, were adapted and migrated to online platforms with varying levels of success, both in schools and in sport settings (Stojanovic et al., 2020). Consistent communication, and an intentional and caring approach toward athletes and between teammates, can strengthen relationships thus enhancing youths' sense of belonging and ultimately increasing their opportunities for PYD outcomes (Falçao et al., 2017; Falçao et al., 2020; Gould & Carson, 2008; Harrist & Witt, 2012; Holt et al., 2017; Petitpas et al., 2005).

Finally, while global pandemics do not occur frequently, sport injuries are unfortunately common among young athletes. One recent Canadian study reported injury rates of 29 % among high school sports and recreational activity participants (Black et al., 2021). As previously discussed, sport injuries can have a profound negative impact on athletes' mental health, leading to symptoms like depressions, anxiety, anger, among others (Reese et al., 2012). While some post-injury psychological interventions have been found to show promise in helping athletes maintain their psychological health and return to play successfully, much research in this area is still needed, particularly pertaining to the youth sport population. Lessons learned from the current research study provide important perspectives and possible new approaches for addressing how athletes cope with sport interruptions. Using a PYD perspective to address injury prevention and relying on the strengths of the PYD climate to reduce feelings of isolation during

rehabilitation, may lead to better outcomes for injured athletes. Lessons and life skills learned through interactions with the PYD climate can also help young people cope with adversity both within and outside of the sport setting, as demonstrated by the findings of this research study.

Conclusion

The COVID-19 pandemic disrupted many aspects of life, including schooling and sports. Youth who are in a vulnerable developmental period in terms of their desire for social connection, exploration, and self-regulation, have been prone to particularly negative outcomes related to COVID-19 health restrictions and social isolation measures. The results of the current study add to the existing research on the emotional toll that the public health measures had on youth sport participants in the early months of the COVID-19 pandemic. Nonetheless, although these youth experienced the loss of an important aspect of their daily functioning, sport participation, the results further demonstrated that the PYD climate built within the sport context transcends the sport itself. Youth sport participants surveyed and interviewed in this mixed methods research study demonstrated considerable resilience through their ability to engage with and rely on their PYD climate to help them cope with the negative impacts of the COVID-19 pandemic. While a significant sport interruption may have been assumed to represent a significant and painful loss, overall, the youth sport context appeared to be a significant protective factor for youth sport participants during the early months of the COVID-19 pandemic.

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Table 1

Survey Sample Demographic Characteristics (N = 635) for Quantitative Phase

Measure	*N*	*%*	*M*	*SD*
Gender				
Male	465	73.3		
Female	168	26.5		
Non-binary	1	.2		
Age			15.91	2.26
Province				
Nova Scotia	6	.9		
New Brunswick	1	.2		
Québec	351	55.3		
Ontario	71	11.2		
Manitoba	1	.2		
Saskatchewan	39	6.1		
Alberta	138	21.7		
British Columbia	20	3.1		
Other	6	.9		
Marital Status (Parent)				
Single	70	11.0		
Common law	92	14.5		
Married	328	51.7		
Separated	55	8.7		
Divorced	53	8.3		
Widowed	8	1.3		
Other	7	1.1		
Sport				
Baseball	104	16.4		
Basketball	101	15.9		
Football	353	55.6		
Hockey	107	16.9		
Rugby	32	5		
Soccer	169	26.6		
Track & Field	71	11.2		
Volleyball	34	5.4		
Other	100	15.7		
Years playing			7.92	2.58
Days per week			4.52	1.27
Multi-sport	274	43.2	1.72	1.02

Impact of pandemic		
Cancelled season	253	39.8
Cancelled playoffs	159	25.0
Cancelled spring training	354	55.7
Delayed start to the season	265	41.7
Other	78	12.3

Table 2

Quantitative Phase: Survey Results – Sports (N = 635)

Variable	*N*	*Percent*	*M*	*SD*
Importance			4.74	.52
Not at all	0	0		
A little	2	.3		
Important	18	2.8		
Very Important	122	19.2		
Extremely Important	488	76.9		

Table 3

Quantitative Phase: Survey Results – PYD Climate

	Teammates (*N* = 559)		Coach (*N* = 433)	
Variable	*N*	*%*	*N*	*%*
Contact	559	88.0	433	68.2
Frequency				
Multiple times per day	12	2.15	46	10.62
Once a day	13	2.33	64	14.78
Multiple times per week	45	8.05	93	21.49
Once a week	94	16.82	116	26.79
2-3 times per month	227	40.61	86	19.86
Once a month	50	8.94	11	2.54
Less than once a month	116	20.75	15	3.46
Content				
Training	435	77.82	357	82.45
Sport-specific drills	232	41.50	240	55.43
Physical well-being	257	45.97	219	50.58
Emotional well-being	201	35.96	167	38.57
School work	307	54.92	144	33.26
Return to play	449	80.32	308	71.13

Table 4

Quantitative Phase: Survey Results – Perceived Support & Emotional Reaction (N = 635)

Measure	*M*	*SD*	Response (%)				
			1	2	3	4	5
Perceived Support							
Parents	4.41	.87	1.6	2.8	7.4	28.3	58.7
Teammates	4.09	.91	1.7	3.8	14.6	42.2	35.7
Coaches	4.17	.92	1.9	3.6	12.4	37.6	42.5
Emotional Reaction							
Afraid	2.06	1.26	44.6	19.4	15.0	8.8	6.0
Angry	3.31	1.49	16.7	14.6	17.2	16.4	30.9
Calm	2.58	1.30	26.1	20.9	26.0	13.2	9.9
Disappointed	4.48	.82	.8	2.0	9.8	22.7	64.1
Frustrated	3.68	1.44	12.4	10.9	12.9	19.5	41.3
Happy	1.63	1.09	66.1	11.2	10.6	5.0	3.3
Hopeless	2.74	1.45	26.8	18.1	20.6	12.9	17.0
Impatient	3.85	1.33	8.3	8.8	15.7	18.7	44.4
Lonely	2.82	1.51	28.3	13.4	19.8	14.5	19.4
Motivated	3.16	1.49	20.5	13.9	17.2	19.7	25.5
Nervous	2.56	1.35	29.1	19.2	22.2	14.6	10.4
Optimistic	2.98	1.32	15.9	19.1	25.8	17.8	15.7
Overwhelmed	2.52	1.39	30.2	19.2	19.5	11.3	12.0
Relieved	1.48	.91	68.7	14.6	7.9	2.7	1.9
Restless	3.09	1.47	20.0	14.3	20.9	15.3	23.6
Sad	3.94	1.20	4.9	9.4	17.3	22.7	44.6
Upset	3.67	1.353	11.3	8.8	16.1	25.8	35.4
Worried	3.31	1.331	12.9	12.9	25.7	21.6	23.3

Table 5

Contingency Tables for Perceived Emotional Support by Emotional Reaction

	Perceived Emotional Support from Teammates									
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Reported level of emotion	Not at all		Slightly		Moderately		Very		Extremely	
Sadness**	6	25	16	44	40	70	63	81	132	151
Worry*	26	56	27	55	66	97	66	71	68	80
Upset**	21	51	15	41	51	51	61	103	107	118
Afraid**	97	186	58	65	47	48	26	30	22	16
Frustrated***	18	61	20	49	32	50	60	64	123	139
Lonely**	62	118	39	46	48	78	52	40	50	73
Overwhelmed*	62	130	52	70	52	72	37	35	37	39
Angry***	22	84	37	56	49	60	48	56	94	102
	Perceived Emotional Support from Coach									
Frustrated*	13	66	9	60	26	56	38	86	59	203
Lonely*	29	151	27	58	27	99	25	67	35	88

*$p < .05$. **$p < .01$. ***$p < .001$

Table 6

Contingency Table for Perceived Emotional Support by Frequency of Contact with Coach

	Perceived Emotional Support	
Frequency of Contact	Yes	No
1 –Less than once a month	7	39
2 –Once a month,	15	49
3 –2-3 times per month,	21	72
4 –Once a week,	38	78
5 –Multiple times per week,	33	53
6 –Once a day,	6	5
7 – Multiple times per day,	7	8

$\chi^2(6) = 17.09$, $p = .009$

Table 7

Contingency Tables for Perceived Support by Content of Conversation

	Perceived Support from Teammates									
	Strongly Disagree		Disagree		Neither Agree nor Disagree		Agree		Strongly Agree	
Topic Discussed	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Training**	3	4	14	3	44	24	189	52	180	38
Drills*	2	5	3	14	25	43	92	149	107	111
	Perceived Support from Coach									
[a] Training*	2	3	7	4	30	10	131	27	182	32
[a] Drills**	2	3	3	8	17	23	80	78	136	76
[a] Schoolwork*	2	3	2	9	5	35	55	103	79	135
[a] Return to Sport**	4	1	4	7	21	19	112	46	164	50

[a] More than 10% of cells have a cell-count of less than 5

*$p < .05$. **$p < .01$. ***$p < .001$

Table 8

Contingency Tables for Perceived Emotional Support by Content of Conversation

	Perceived Emotional Support from Teammates			
	Yes		No	
Topic Discussed	Yes	No	Yes	No
Physical Well-Being***	137	109	120	193
Emotional Well-Being***	138	108	63	250
Schoolwork*	148	98	159	154
Return to Sport***	213	33	233	80
	Perceived Emotional Support from Coach			
Training*	113	15	244	61
Drills*	81	47	159	146
Physical Well-Being***	91	37	128	177
Emotional Well-Being***	91	37	76	229
Schoolwork***	71	57	73	232
Return to Sport*	100	28	208	97

*$p < .05$. **$p < .01$. ***$p < .001$

Table 9

Contingency Tables for Content of Conversation with Teammates by Emotional Reaction

	Topic Discussed									
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Reported level of Emotion	Not at all		Slightly		Moderately		Very		Extremely	
	Return to Sport									
[a] Disappointed*	4	0	8	2	35	18	94	30	303	61
Sad***	14	12	35	17	74	18	96	29	222	36
Worried**	46	21	49	22	115	29	106	18	117	19
Calm**	126	27	101	15	120	30	54	19	30	19
Nervous*	120	38	76	30	113	22	69	10	50	9
Upset***	41	18	27	17	76	15	110	31	183	27
Afraid*	186	63	88	21	73	14	42	7	32	2
Frustrated***	44	24	39	17	51	15	87	22	212	33
Angry***	57	31	57	22	77	15	81	18	157	22
	Drills									
Worried**	31	36	21	50	46	98	59	55	66	70
Relieved*	170	218	37	49	11	30	1	11	6	3
Nervous**	61	97	31	75	63	72	40	39	31	28
Motivated*	46	63	31	50	29	64	41	71	77	69
	Schoolwork									
Relieved*	216	172	52	34	13	28	6	6	6	4
	Training									
Nervous**	115	43	77	29	107	28	72	7	51	8
Upset**	37	22	34	10	62	29	113	28	178	32
	Physical Well-Being									
Nervous**	59	99	38	68	71	64	43	36	36	23
Afraid**	97	152	58	51	40	47	32	17	19	15

Frustrated***	22	46	16	40	23	43	61	48	127	118
Impatient**	12	31	25	23	31	58	50	53	130	126
Restless**	34	75	33	47	54	60	49	38	72	64
Overwhelmed**	68	96	44	63	47	67	44	22	34	31
Angry**	29	59	30	49	39	53	53	46	96	83
	Emotional Well-Being									
Nervous**	48	110	28	78	54	81	40	39	25	34
Afraid**	70	179	50	59	29	58	23	26	19	15
Overwhelmed**	45	119	34	73	47	67	33	33	31	34
Angry**	19	69	28	51	30	62	40	59	77	102

[a] More than 10% of cells have a cell-count of less than 5

*$p < .05$. **$p < .01$. ***$p < .001$

Table 10

Contingency Tables for Content of Conversation with Coach by Emotional Reaction

	Topic Discussed									
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Reported level of Emotion	Not at all		Slightly		Moderately		Very		Extremely	
	Physical Well-Being									
Worried*	17	32	21	28	58	55	61	40	55	54
	Emotional Well-Being									
Motivated*	31	50	31	34	22	56	28	61	50	61

*$p < .05$. **$p < .01$. ***$p < .001$

Table 11

Interview Sample Demographic Characteristics (N = 24) for Qualitative Phase

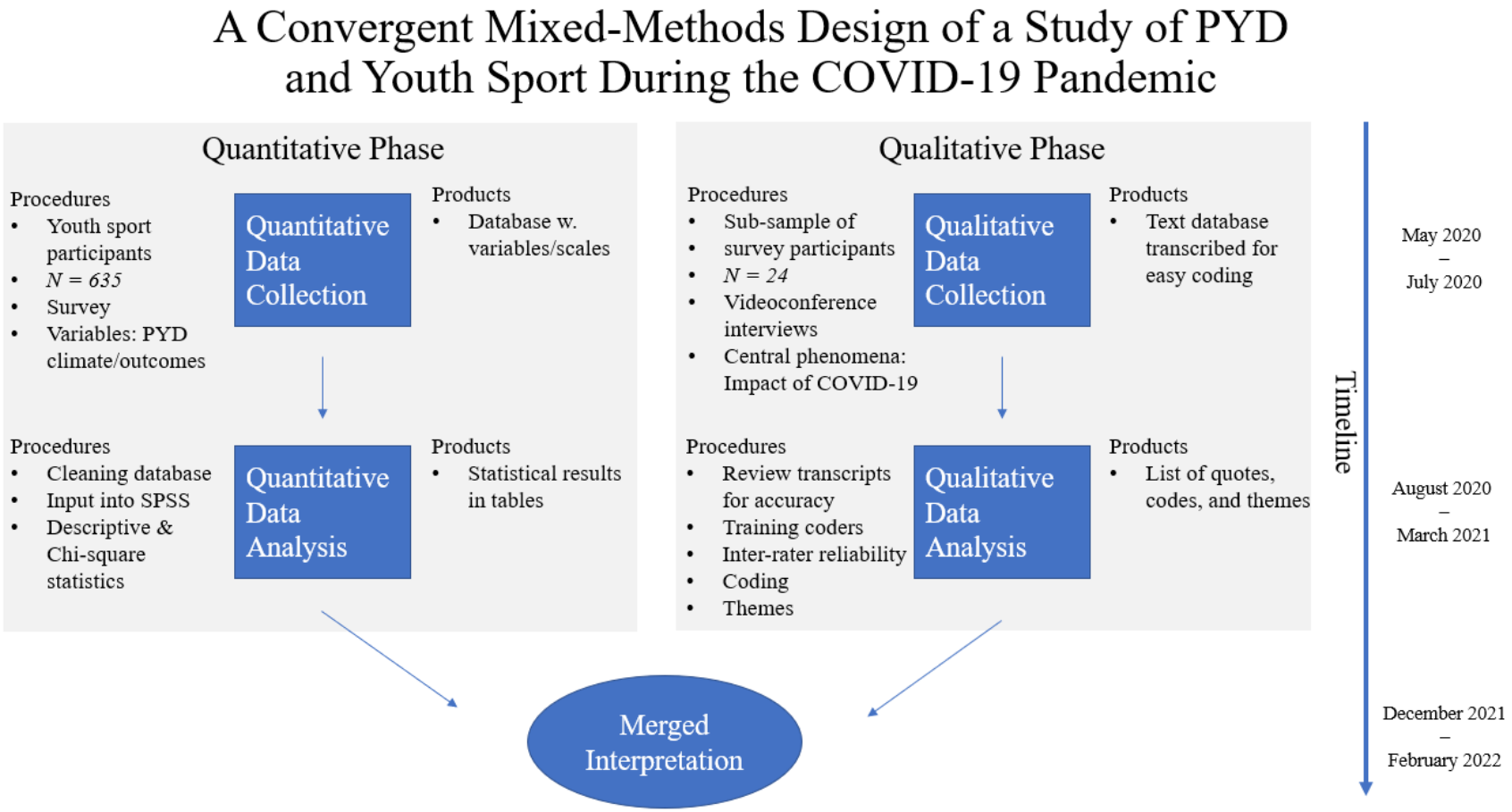
Variable	*N*	*%*	*M*	*SD*
Gender				
Male	16	66.67		
Female	8	33.33		
Age			15.08	1.86
Language				
English	17	70.83		
French	7	29.17		
CEGEP				
Year 1	1	4.17		
Year 2	2	8.33		
High School				
Grade 6	1	4.16		
Grade 8	4	16.67		
Grade 9	3	12.50		
Grade 10	3	12.50		
Grade 11	8	33.33		
Grade 12	2	8.33		
Sport				
Badminton	1	4.17		
Baseball	3	12.50		
Basketball	7	29.17		
Figure Skating	1	4.17		
Flag Football	3	12.5		
Football	12	50.00		
Futsal	1	4.17		
Hockey	3	12.50		
Soccer	3	12.50		
Softball	1	4.17		
Track & Field	2	8.33		
Wrestling	2	8.33		
Multi-sport	11	45.83		

Appendix A

(1)	Distal ecological systems and individual factors influence PYD through sport.
(2)	A PYD climate (based on relationships between athletes and peers, parents, and other adults) can produce PYD outcomes (i.e., through implicit processes).
(3)	PYD outcomes can be attained if a life skills program focus (involving life skill building activities and transfer activities) is in place (i.e., through explicit processes) and in the presence of a PYD climate.
(4)	The combined effects of a PYD climate and a life skills focus will produce more PYD outcomes than a PYD climate alone.
(5)	Gaining PYD outcomes in and through sport will facilitate transfer and enable youth to thrive and contribute to their communities.

Appendix A. Hypotheses proposed by Holt et al. (2017) to test relationships posited in the grounded theory PYD through sport.

Appendix B


A Convergent Mixed-Methods Design of a Study of PYD and Youth Sport During the COVID-19 Pandemic
Quantitative Phase
Procedures
• Youth sport participants
• N = 635
• Survey
• Variables: PYD climate/outcomes
Quantitative Data Collection
Products
• Database w. variables/scales
Procedures
• Cleaning database
• Input into SPSS
• Descriptive & Chi-square statistics
Quantitative Data Analysis
Products
• Statistical results in tables
Qualitative Phase
Procedures
• Sub-sample of survey participants
• N = 24
• Videoconference interviews
• Central phenomena: Impact of COVID-19
Qualitative Data Collection
Products
• Text database transcribed for easy coding
Procedures
• Review transcripts for accuracy
• Training coders
• Inter-rater reliability
• Coding
• Themes
Qualitative Data Analysis
Products
• List of quotes, codes, and themes
Merged Interpretation
Timeline
May 2020 – July 2020
August 2020 – March 2021
December 2021 – February 2022

Appendix C

Survey and Interview Questions for Data Collection

Table C1

Survey Questions for Quantitative Phase

Section	Questions	Answer choices
Demographics	How do you identify?	Male, Female, Non-Binary, Transgender, Other
	When is your birth date?	Month, Year
	Where do you live?	Country, Province/State
	What is your parents' marital status?	Single Common law, Married, Separated, Divorced, Widowed, Other:
	Are you in High School, CEGEP, University? What grade/year are you in?	High School, CEGEP. University
Sport-Related Information	What organized sport(s) do you play? (Select all that apply)	Swimming, Basketball, Soccer, Volleyball, Track & Field, Baseball, Hockey, Football, Flag Football, Dance, Rugby, Other:
	How many years have you played sports?	1 year or less, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 or more years
	How many days per week do you usually practice/play an organized sport?	1, 2, 3, 4, 5, 6, 7

	How many hours per week do you usually practice/play an organized sport?	1-2 hours, 3-4 hours, 5-6 hours, 7-8 hours, 9-10 hours, more than 10 hours
Impact of the COVID-19 Pandemic *If you were playing more than one sport when the social distancing measures began, please think of the sport that was most affected by the measures while answering the following questions:*	How did the pandemic affect your season?	Cancelled season, cancelled playoffs, cancelled spring training, delayed start to season, other:
	How important is it for you to be able to play this sport?	5-point Likert scale 1 = not at all important 5 = extremely important
Communication	Have you been in touch with your teammates since the beginning of the pandemic? If so, how? (select all that apply) How often? What have you talked about? (Select all that apply)	Yes, no Social media (e.g., Facebook, Twitter, Instagram), Video chat (e.g., Zoom, Skype, FaceTime), Phone, Email, Text message, In person Multiple times/day, Once a day, Multiple times per week, Once a week, 2-3 times per month, Once a month, less than once a month Training, Sport-specific drills, Physical well-being, Emotional well-being, School work, Return to play, Other

	Have you been in touch with your coach since the beginning of the pandemic? If so, how? (Select all that apply) How often? What have you talked about? (Select all that apply)	Yes, no Social media (e.g., Facebook, Twitter, Instagram), Video chat (e.g., Zoom, Skype, FaceTime), Phone, Email, Text message, In person Multiple times per day, Once a day, Multiple times per week, Once a week, 2-3 times per month, Once a month, Less than once a month Training, Sport-specific drills, Physical well-being, Emotional well-being, School work, Return to play, Other
Well-being & Coping	Please provide a rating for each of the following ways you might feel about not being able to practice your sport: Disappointed, Sad, Worried, Hopeless, Happy, Relieved, Calm, Nervous, Upset, Afraid, Motivated, Frustrated, Impatient, Lonely, Restless, Optimistic, Overwhelmed, Angry	5-point Likert scale 1 = Not at all 5 = Extremely
	Please rate the following statements: I feel supported by my parents I feel supported by my teammates I feel supported by my coach	5-point Likert scale: Strongly disagree, Disagree, Neither agree nor, disagree Agree, Strongly agree

Table C2

Interview Questions for Qualitative Phase

Section	Questions
Demographic information	How do you identify? How old are you? What grade are you in?
Sport Information	What organized sport(s) do you play? How many years have you played sports? What does your sport mean to you? Why is it important?
Impact of the COVID-19 Pandemic	How did the pandemic affect your season? How do you feel about not being able to play sports or go to school? What has it been like for you? Have you been in contact with your coach/teammates? How do you stay connected? What do you talk about? Have they done anything to help you stay motivated? Has your family done anything to help you stay motivated during the pandemic? What do you miss the most about playing you sport? How do you feel about going back to sports? Is there anything else you would like to share?

Appendix D

Qualitative Phase Thematic Analysis

Section	Broad Theme	Sub-Theme
Meaning of sports before COVID-19.	Sport	Meaning (how the participant defines the sport, the components of the sport that make it what it is for that participant) Importance (How much space or time it takes up in a participant's life) Team sport/peer relationships Health (sport for physical and/or mental health)
Impact of COVID-19 pandemic on the sport system & the PYD climate.	Impact of COVID-19	Season (how the season was impacted) School (any mention of school) Uncertainty about future Missed opportunities (e.g., special team or competition opportunities, recruitment etc) Self-reflection/self-evaluation (usually related to their reaction to the shutdown, or how they see themselves doing during the shutdown or in their return to play) Limited social contact
Youth Engagement with PYD Climate During Sport	Communication	Contact with coaches (reference to frequency or content) Contact with teammates (reference to frequency or content) Communication from league (any communication from the league regarding shutdown or return to play)

Interruption and Restrictions.	Support	Family support Peer support Coach support
PYD Outcomes	Emotions	Ambivalent/Unaffected Hope/optimism Confusion Motivation/lack of motivation Negative affect (Any sign of low mood or distress, e.g., sadness, frustration, anger, boredom etc.) Positive Affect
	Coping	Physical activity/training (anything that is not specific to the sport) Sport-related practice (drills that are specific to the sport) Positive self-talk (any kind of reframing to help them get through tough situations) Social contact during quarantine (getting to see friends or teammates) Self-improvement/skill development (sport-related or not)