

**Examining Motivational Climates and Psychosocial Developmental Outcomes in
Adolescent Girls' High Performance Soccer in Canada**

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Abstract

Youth sport is an important context for positive youth development (PYD); however, it is dependent on program delivery. While mastery-oriented climates are associated with positive developmental outcomes, high-performance sport is often characterized by performance-oriented environments that may pose developmental risks. Given the limited research on motivational climates in high-performance girls' sport, this exploratory study examined perceived coach- and peer-created motivational climates and their relationships with PYD experiences in high-performance girls' soccer in Canada. Athletes completed self-report measures assessing motivational climate and developmental experiences. Results indicated that athletes perceived relatively high mastery-oriented climates alongside moderate performance-oriented climates and reported moderate-to-high PYD outcomes. Regression analyses revealed mastery-oriented climates were positively associated with goal setting and inversely associated with negative experiences. Overall, findings suggest high-performance girls' soccer can support PYD, with developmental outcomes shaped by the motivational climates created by coaches and peers.

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Chapter 1: Introduction

Youth sport is a popular pursuit, with rapidly increasing opportunities for youth engagement in high-level sports. This trend is especially evident in girls' soccer across Canada, where growth has been driven by grassroots development, the visibility of the women's national team, and expanded competitive opportunities supported by Canada Soccer (Canada Soccer, 2024). In 2024, over 269,000 Canadian girls and women participated in organized soccer programs (Canada Soccer, 2024). However, despite these promising numbers, girls' high dropout rates within soccer continue to be a concern, given the role of organized sport in supporting healthy development. Within Canadian sport programs, girls remain underrepresented in comparison to boys, with participation declining sharply during adolescence, as one in five drop out in their late teens (Canadian Women & Sport, 2024). Given both the rapid growth and the risk of dropout, it is essential to examine the implications that high-performance soccer programs may have for girl athletes.

High-performance youth sport programs are typically designed as pathways for athletes to progress to higher competition levels, such as provincial, national, collegiate, and professional stages. In recent decades there has been growth in high-performance youth sport programs across Canada and around the world, driven in part by the aspirations of athletes and parents for athletic success (Fraser-Thomas & Strachan, 2014). As such, a growing body of research has examined the potential benefits of youth engaging in high-performance sports, with trends indicating the majority of youth athletes do not transition to professional careers in their respective sports (Fraser-Thomas & Strachan, 2014; Rongen et al., 2020; Rongen et al., 2021). Further, research indicates that Talent Identification and Development Systems (TIDS) have limited efficacy

(Rongen et al., 2021), and opportunities to pursue sport professionally are scarce especially for girls and women. These realities raise important questions about the value of high-performance youth sport programs, leading researchers to examine the value of high-performance sport in fostering positive youth development (PYD).

PYD is a theoretical approach emerging from developmental psychology, that focuses on fostering youth's strengths through appropriate and intentional opportunities, rather than solely addressing youth's problems or deficits (Gill & Hemphill, 2020; Holt et al., 2017). Extensive research has been conducted on environments that facilitate PYD, suggesting that sport can be an optimal context to foster youth's psychosocial development and life skills; however, research suggests the need for an intentional programming that supports this approach (Fraser-Thomas et al., 2005; Holt et al., 2017). Given the strong emphasis on winning in high-performance sport, there is often limited explicit focus on psychosocial and life skill development compared to recreational sport programs (Taylor & Bruner, 2012), raising questions regarding the value of high-performance sport environments in fostering PYD.

A large body of research has shown that developmental outcomes of sport participation are strongly influenced by the motivational climate created within the sport environment (Gould et al., 2012; MacDonald et al., 2011, Ntoumanis et al., 1999). Through the Achievement Goal Theory, Nicholls (1984) proposed that a mastery-oriented climate focuses on effort, learning and skill development, while a performance-oriented climate focuses more on outperforming peers, and extrinsic rewards. Research has shown mastery-oriented climates tend to be associated with supportive relationships and a sense of belonging, which contribute to the holistic development of youth (Lundqvist & Raglin, 2015; Ntoumanis et al., 1999). This is consistent with other

research indicating the social environment created within a sport program (i.e., coach-athlete relationships, team cohesion, social inclusion) correlates with positive developmental experiences (Taylor & Bruner, 2012). However, concerns have been raised that high-performance sport often adopts a performance-oriented motivational climate, which may be counterintuitive in the development of psychosocial skills (Erikstad et al., 2021; Fraser-Thomas & Strachan, 2014). Collectively, this research underscores the importance of considering motivational climates in youth sport program design.

While some research suggests that high-performance soccer programs can promote positive psychosocial outcomes such as resilience, confidence, and coping skills (Rongen et al., 2021), there remains limited evidence specific to the experiences of girls and women in high-performance sport contexts. Related research has shown that athletes on girls' teams experience sport differently than those on boys' teams, whether this be win-orientation, parents' beliefs, recognition within the sport, or opportunities athletes are presented with (Fredricks & Eccles, 2005; Gould & Carson, 2011). These differing experiences highlight the need for more research focused on girls' experiences in sport, specifically in relation to motivational climates, and potential subsequent differences in developmental experiences. Further, the relative importance of coach-created and peer-created motivational climates on perceived PYD of youth, and specifically girls is not well understood (Gould et al., 2012).

There remain important gaps in the literature on PYD and high-performance youth sport, particularly regarding the relationship between motivational climate and developmental outcomes for girls in high-performance youth soccer in Canada. Examining which motivational climates exist within these environments, and how they shape athletes' developmental

experiences, is essential to advancing understanding in this area. This study's purpose was to address this knowledge gap, with potential to support the well-being and psychosocial growth of girl athletes while informing broader policy and practice. Specifically, the purpose of this study was to examine the relationship between motivational climates and developmental outcomes among girls in high-performance youth soccer in Canada, through three specific objectives: (a) to identify which motivational climates exist within high-performance girls' soccer programs, (b) to gain understanding of the developmental experiences of adolescent girls in high-performance soccer, and (c) to explore the relationships between motivational climate and PYD outcomes in girls' high-performance soccer. Insights from this work may extend beyond soccer, offering guidance for coaches, sport organizations, and policymakers in designing high-performance programs that foster positive youth development.

Chapter 2: Literature Review

Positive Youth Development

Positive Youth Development (PYD) is a strengths-based approach that prioritizes promoting youths' potential through intentional and developmentally appropriate opportunities, rather than focusing exclusively on problems or deficits (Gill & Hemphill, 2020; Holt et al., 2017). Central to PYD is the creation of supportive environments that enable young people to develop skills, interests, and capacities that prepare them for successful transitions into adulthood (Fraser-Thomas & Strachan, 2014). The theoretical foundations of PYD in sport draw heavily on developmental psychology, particularly Bronfenbrenner's Ecological Systems Theory (1994) and Lerner's developmental systems theory (1998), both of which emphasize the interplay between individual strengths and environmental influences in shaping developmental outcomes (Lerner et al., 2000).

Ecological Systems Theory

Bronfenbrenner's (1994) Ecological Systems Theory (EST) emphasizes the critical role of environmental contexts in human development (Bronfenbrenner, 1994). Central to the theory are proximal processes; the interactions individuals have with caregivers, peers, teachers, and others, which serve as primary mechanisms for fostering competence and growth. The microsystem refers to direct interactions within an individual's immediate environment, such as relationships with teammates and coaches, while the mesosystem captures the interconnections between these microsystems and their combined influence on development. The exosystem encompasses external environments that indirectly affect the individual, and the macrosystem represents broader societal and cultural influences, including norms and expectations. Lastly, the

chronosystem accounts for temporal dimensions, such as life transitions and historical changes. Collectively, the EST provides a framework for understanding how young people develop, shaped by family dynamics, community relationships, societal structures, and life events, highlighting the importance of cultivating supportive environments that enable all youth to thrive within multiple, nested systems.

PYD Frameworks and Outcomes

Within the PYD approach, several models and frameworks have been developed to identify, understand, evaluate, and predict outcomes associated with positive or optimal development. Clearly defining these outcomes is essential, as they provide direction for the design and implementation of youth programs.

One of the most influential models of PYD is Lerner et al.'s (2005) 5Cs framework, which outlines five core indicators of positive development: competence, character, connection, confidence, and caring. These outcomes encompass attributes such as self-worth, respect for rules, the ability to build meaningful relationships, responsibility, and empathy. Importantly, the development of such attributes within organized activity settings is argued to be transferable to broader life contexts, thereby supporting successful transitions into adulthood (Rongen et al., 2021). The 5Cs have also been widely applied in sport research, where participation is viewed as a particularly powerful context for fostering competence and confidence, while simultaneously strengthening social connections and promoting caring and character (Holt et al., 2017). Collectively, the framework has guided both research and practice in shaping sport programs that support PYD, with the goal of fostering holistic growth across social, emotional, cognitive, and physical domains.

PYD work has also drawn on additional frameworks that outline the essential features of settings conducive to positive development. One prominent model is the National Research Council and Institute of Medicine's (NRCIM, 2002) eight features of developmental settings: physical and psychological safety, appropriate structure, supportive relationships, opportunities to belong, positive social norms, support for efficacy and mattering, opportunities for skill building, and integration of family, school, and community efforts. These features are regarded as critical for promoting the physical, intellectual, psychological, and social growth necessary for healthy development into adulthood. Integrating and ensuring these features are present in developmental settings demonstrates how to intentionally structure environments to support PYD.

Participation in PYD programs has been associated with a range of positive outcomes, including improved social competence, higher self-esteem, and enhanced academic and career success (Roth et al., 1998; Fraser-Thomas et al., 2005). Youth engaged in such programs are also more likely to contribute to their communities and demonstrate a strong sense of responsibility. Furthermore, PYD has been shown to foster coping skills and resilience, enabling youth to navigate challenges and adversity more effectively (Rongen et al., 2021). Nonetheless, it has been argued that it is essential to recognize the diverse needs of different youth populations; adapting PYD frameworks to account for these differences, while refining program delivery and accessibility, may strengthen their capacity to support optimal psychosocial development (Schailleé et al., 2017).

Positive Youth Development Through (High-Performance) Sport

Positive youth development in sport contexts has gained significant attention as a growing area of research within the field of sport psychology, and specifically youth sport. Sport provides opportunities for physical, psychological, and social development (Fraser-Thomas et al., 2005), positioning it as a powerful context for promoting PYD outcomes. Through sport, athletes may develop autonomy, build meaningful relationships, and cultivate a positive self-concept (Rongen et al., 2020). However, the traditional emphasis on performance and competition within high-performance sport raises concerns that opportunities for optimal psychosocial development may be compromised.

Positive and Negative Outcomes of High-Performance Sport

Although high-level sport is often associated with performance-oriented climates that place limited emphasis on psychological and social development (Fraser-Thomas & Strachan, 2014), emerging research has highlighted both potential for the development of positive assets, as well as the constraints within high-performance youth sport. In terms of positive developmental outcomes, Wilkes and Côté (2010) found that competitive sport programs were linked to stronger developmental outcomes than recreational programs, due to unique features within the high-performance sport context, including greater time commitment, advanced coaching, competitive experiences, and expanded opportunities. Similarly, Rongen et al. (2020) found that high-performance soccer players often reported that their basic psychological needs (i.e., experiencing autonomy, competence, relatedness) were met in high performance sport, fostering their well-being. Further, a longitudinal study by Rongen et al. (2021) reported that participation in academy soccer fostered personal skills, resilience, confidence, coping abilities,

and social competencies. Nonetheless, research has also identified some negative or concerning outcomes associated with high-performance youth sport. Competitive athletes have reported higher levels of stress compared to their recreational counterparts (Wilkes & Côté, 2010), and in some instances high-performance sport participation has been linked to reduced well-being (Noon et al., 2015). Further, physiological demands such as fatigue, soreness, and inadequate recovery can undermine motivation and contribute to burnout (Rongen et al., 2020). Specifically, high-performance soccer players have described experiencing constant pressure to perform, feeling overwhelmed by the intensity of competition, and being unprepared for life beyond sport (Rongen et al., 2021). Moreover, high performance demands can also diminish athletes' basic psychological needs: autonomy is constrained by rigorous schedules, competence is challenged by frequent scrutiny, and belonging is threatened by competitive environments, all of which may hinder PYD outcomes (Rongen et al., 2020; Noon et al., 2015). Collectively, these findings suggest that high-performance sport can provide both meaningful opportunities for PYD, in addition to potential negative implications for psychosocial development.

Research has also begun to explore potential gender differences in youth's PYD-related experiences and outcomes through sport. For instance, boys have been found to score significantly higher than girls on measures of self-confidence, perceived competence, antisocial behavior, coach relationships, and cognitive skills, whereas girls more often report stronger social behaviours (Kavussanu & Boardley, 2009; Lirgg, 1991; O'Connor et al., 2020). These differences may be shaped by distinct broader societal experiences, including the influence of traditional gender stereotypes, expectations from coaches and parents, future sport opportunities, and athletes' personal goals, as differences in PYD outcomes have also been demonstrated in

school settings (Årdal et al., 2018). Together, these findings highlight PYD outcomes of sport appear to differ across genders, reinforcing past research highlighting the complexity of gendered experiences in sport.

The apparently contradictory and/or paradoxical findings showing positive and negative developmental outcomes within high-performance sport settings, suggests that youth's developmental outcomes may depend on how programs are structured and delivered. Multiple contextual factors shape youth experiences in sport. For example, Bruner et al. (2014) found that group cohesion significantly influenced perceptions of PYD in competitive high school athletes, with higher levels of task and social cohesion associated with greater personal and social skills, initiative, and goal setting among adolescent athletes on high-school sports teams. Increased cohesion was also linked to fewer negative experiences. Similarly, research with high-performance boys' soccer players demonstrated that athlete satisfaction was positively associated with team cohesion and strong coach–athlete relationships, which were in turn linked to goal setting, emotional regulation, and leadership, while negatively related to social exclusion (Taylor & Bruner, 2012).

Additionally, key social agents such as coaches, parents, and peers play a critical role in shaping developmental outcomes. Specifically, the motivational climate created by coaches can profoundly influence athletes' motivation, self-efficacy, and enjoyment (Strachan et al., 2011; Schallée et al., 2017). Parents are also key social agents, with autonomy-supportive behaviors, encouragement, and promotion of balanced lifestyles linked to more positive developmental outcomes (Kramers et al., 2023). Peers have also been identified as key contributors in shaping youth's experiences in sport, particularly influencing enjoyment and self-efficacy (Ntoumanis &

Vazou, 2005). Together, these findings highlight that psychosocial development in high-performance sport requires an intentional approach, delivered by supportive social agents, and that contextual nuance within high-performance sporting environments may explain the variability in outcomes reported across the literature.

Personal Assets Framework in Sport

Drawing upon the extensive research over the past two decades in PYD through sport, Côté and colleagues (2016, 2020) proposed the Personal Assets Framework (PAF) in sport. The framework underscores the importance of sport environments that extend beyond the development of athletic skills, to foster holistic growth, highlighting how appropriate settings, quality relationships, and positive personal engagement interact to influence both immediate (4/5Cs of PYD) and long-term developmental outcomes (i.e., 3Ps; participation, personal development, performance). The PAF offers a framework for understanding how sport can support athletes' broader well-being, suggesting that appropriate environments can cultivate psychosocial development as well as physical skills, increasing the likelihood of sustained sport participation, personal development, and performance, and in turn facilitating the transfer of these benefits into other life domains.

Achievement Goal Theory & Motivational Climates

One prominent theory in sport psychology literature that can offer a framework for understanding the specific environment in which youth sport is being delivered is Nicholls' (1984, 1989) Achievement Goal Theory (AGT). AGT posits that individuals pursue achievement through different goal orientations. A mastery orientation (i.e., task-orientation) reflects motivation driven by self-improvement, where ability is judged relative to one's past

performance. In contrast, performance orientation (i.e., ego-orientation) emphasizes outperforming others and achieving extrinsic rewards. These orientations shape behavior and are influenced by the broader motivational climate. Rooted in goal perspective theory, motivational climate refers to the social and environmental cues that signal what is valued in achievement contexts such as sport (Ames, 1992). A mastery-oriented climate emphasizes effort, learning, and teamwork, whereas a performance-oriented climate highlights outcomes, competition, and social comparison (Mossman et al., 2021). Social agents such as coaches, parents, and peers play a key role in creating these climates, which in turn have a powerful influence on athletes' behavioural and psychological development (Mossman et al., 2021).

Motivational Climates and PYD Through Sport

Researchers have extensively examined the effects of both mastery-oriented and performance-oriented social climates across sport contexts. Mastery-oriented climates, which emphasize skill development, effort, and intrinsic motivation, have consistently been associated with positive developmental experiences and outcomes including personal and social skills, goal setting skills, initiative, increased self-efficacy, reduced anxiety, ethical behaviours, and greater athlete satisfaction and enjoyment (Erikstad et al., 2021; Gould et al., 2012; MacDonald et al., 2011; Mossman et al., 2021; Schailée et al., 2017; Smith et al., 2007). In contrast, performance-oriented coaching climates have been more strongly associated with negative experiences and maladaptive developmental outcomes including peer conflict, heightened anxiety, higher rates of dropout, and negative associations with constructive leadership (Gould et al., 2012; Erikstad et al., 2021; MacDonald et al., 2011; Schailée et al., 2017).

Collectively, these findings underscore the significant role of mastery-oriented environments in supporting holistic youth development in sport (Fraser-Thomas & Strachan, 2014). However, importantly, motivational climates are not mutually exclusive; a context perceived as highly mastery-oriented may simultaneously exhibit ego-oriented characteristics, as different social agents (such as parents, coaches, or peers) can emphasize distinct values within the same environment (Roberts & Nerstad, 2020).

Motivational Climates and PYD in High-Performance Sport

While initial research examining motivational climate and PYD outcomes explored athletes' experiences in various community recreational, competitive, and school sport settings, more recent research has begun to focus more explicitly on high performance settings. For example, one study by Haugen et al. (2020) investigated the relationship between perceived motivational climate, supportive coach behavior, and satisfaction among adolescents competing in a national-level soccer tournament in Norway. Results showed athletes perceived both mastery-oriented and performance-oriented climates; mastery-oriented climates and supportive coach behaviors were positively associated with athletes' satisfaction, whereas performance-oriented climates were negatively related to athlete satisfaction. Complementing this work, Alfermann et al. (2013) examined motivational climates, perceived coach support, and satisfaction among high-performance youth swimmers from Germany and Japan. Athletes in this study also reported perceptions of both mastery-oriented climates and performance climates, with greater perceptions of a performance climate in swimmers from Japan, underscoring that motivational perceptions may be embedded in cultural contexts, further demonstrating the need to investigate different populations. Further, both studies reported higher perceptions of a

performance climate than studies pertaining to recreational sport (Alfermann et al., 2013; Hausen et al., 2020), aligning with the idea that high-performance sport settings prioritize performance related goals (Duda & Nicholls, 1992).

A longitudinal study by García-Calvo and colleagues (2014) investigated motivational climates among male soccer players competing in a Spanish professional league (i.e., third division). Again, athletes perceived both mastery and performance-oriented climates. Coach-created mastery climates were positively associated with athlete-group cohesion and satisfaction with sport participation, while peer-created mastery climates were also positively related to perceived team cohesion. These findings highlight that both coaches and peers play a critical role in shaping motivational environments, reinforcing the value of considering peer-created motivational climate alongside coach influences when examining PYD outcomes.

Motivational Climates and PYD in Girls' Sport

Finally, in addition to research focused specifically on motivational climates and PYD within high-performance sport settings, limited research has also focused specifically on motivational climates in girls' sport contexts. In one study, Schailée and colleagues (2017) examined the influence of coach- and peer-created motivational climates on PYD among disadvantaged girls participating in urban dance and martial arts programs in Belgium. Consistent with past research in other contexts, they found that when coaches fostered mastery-oriented climates, athletes experienced greater initiative, goal setting, personal and social skills, and cognitive skills development. Contrary to prior literature, the study also suggested that perceived coach- and peer-created performance-oriented climates could also be associated with cognitive development.

Rationale and Purpose

Collectively, the above reviewed studies consistently demonstrate that mastery-oriented motivational climates are linked to positive outcomes including enjoyment, increased self-efficacy, ethical behaviours, life skill development, and reduced anxiety (Gould & Carson, 2011; MacDonald et al., 2011; Mossman et al., 2021; Smith et al., 2007). Positive developmental experiences, such as improved personal and social skills, initiative, and goal setting, are also strongly predicted by mastery-oriented climates (Gould et al., 2012; MacDonald et al., 2011). In contrast, scholars argue that high-performance sport environments often emphasize performance-oriented climates that prioritize winning and comparison, which may compromise psychosocial development (e.g., peer conflict, heightened anxiety, higher rates of dropout, negative associations with constructive leadership) (Fraser-Thomas & Strachan, 2014; Gould et al., 2012; Erkistad et al., 2021; MacDonald et al., 2011; Schailée et al., 2017).

This raises questions about whether the PYD outcomes typically associated with sport participation are truly optimized within high-performance contexts, or whether they may be hindered by the counterintuitive effects of performance-driven climates. Motivational climates in high-performance sport may not be inherently facilitative or detrimental to PYD; rather, developmental outcomes likely depend on the interactions within the sport contexts (e.g., motivational climate, coaching behaviors, broader culture), reinforcing the need to examine motivational processes in high-performance sport. Although several recent studies have focused on high-performance athletes' potential benefits from their sport participation, showing they may develop resilience, confidence, coping skills, social development, and enjoyment (Alfermann et al., 2013; García-Calvo et al., 2014; Haugen et al., 2020), these outcomes are contingent on how

programs are structured and delivered (Rongen et al., 2021). Importantly, much of this work has focused on male athletes or mixed-gender samples, leaving significant gaps in understanding how motivational climates may be experienced, and influence developmental outcomes of girls in high-performance sport. Prior studies suggest that boys and girls experience sport differently due to factors such as gender stereotypes, cultural expectations, parental and coaching pressures, and differences in recognition and opportunities (Fredricks & Eccles, 2005; Gould & Carson, 2011). These differences likely translate into distinct developmental outcomes, underscoring the importance of examining girls' sport experiences.

The purpose of this study was to examine the relationship between motivational climates and developmental outcomes among girls in high-performance youth soccer in Canada. Specifically, the study had three key objectives. First, this study identified which motivational climates exist within high-performance girls' soccer programs, by examining both coach-created and peer-created climates. Considering the role of peers alongside coaches was essential, as peer-created climates have been shown to exert strong influence on life skill development, self-esteem, and intrinsic motivation (Mossman et al., 2021). By capturing both coach- and peer-created climates, this study provided a more complete understanding of motivational environments in girls' high-performance sport.

Secondly, the study offered a general understanding of the developmental outcomes of adolescent girls in high-performance soccer. This included examining whether athletes reported personal and social skills, cognitive skills, goal setting, initiative, as well as identifying potential negative experiences such as pressure, exclusion, or burnout.

Finally, this study set out to explore the relationships between motivational climates and PYD outcomes in girls' high-performance soccer. By considering both coach and peer influences, the analysis aimed to identify how athletes' motivational environments related to their developmental outcomes. The study's exploratory nature offers preliminary insight into whether motivational climate significantly impacts developmental experiences, providing insight to inform future research.

Chapter 3: Methods

Participants

Participants included 34 girl high-performance soccer players (aged 16-18) from three high performance leagues across Canada. The participants had a mean age of 16.47 years old ($SD = 0.61$). Participants were recruited from the Ontario Player Development League (OPDL), British Columbia Soccer Premier League (BCSPL), and Alberta Player Development League (APDL). High-performance sport has been described as the coordinated integration of resources and systems (including financial and managerial support, coaching, sport science and medical services, talent pathways, facilities, and competition) that collectively enable athlete development and success (Sotiriadou, 2013). Participants were specifically recruited from these three leagues because they embody the characteristics of high performance sport and represent the highest level of competitive youth soccer in the three respective provinces. Each league emphasizes specific focus on technical/tactical player development, strict training standards, and exposure for future opportunities (e.g., university, professional and national).

The researcher contacted representatives from the 41 soccer clubs with provincial high-performance development league licenses (i.e., with teams eligible to be a part of the study). Specifically, there were 23 clubs contacted across Ontario, 11 in British Columbia and 7 in Alberta. Of all the organizations contacted, coaches and administrators of 12 clubs agreed for their team members to participate and distributed the social media post and/or survey link to athletes and/or parents/guardians of athletes for athlete completion. Participants respondents were representative of four clubs in Ontario, six in British Columbia and two in Alberta. Within these organizations, 60 athletes chose to participate in the study, with only 34 athletes (57%) of

athletes fully completing the study; participants' attrition across the survey was likely due to the length of the three questionnaires. Only participants that provided responses for all three surveys were not included in the study (N=34) to ensure data quality and consistency.

Data Collection

Procedure

Once approval was obtained from York University's Research Ethics Board, the primary researcher contacted prospective participants through representatives (administrators and/or coaches) from the 41 clubs across Canada. Athletes who agreed to participate were provided with a study briefing, during which the aims, expectations, and procedures were explained, and confidentiality measures were outlined. Participants were also invited to ask questions, which were addressed by the primary researcher. Participants were then provided with a survey link (through Survey Monkey), where they completed the informed consent form followed by the Youth Experience Survey for Sport (YES-S) (MacDonald et al., 2012), the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) (Selfriz et al., 1992), and the Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ) (Ntoumanis & Vazou, 2005). The participants were also asked demographic questions to gather data on factors that could potentially have a confounding effect as follows: (a) athletes' age, (b) when the athletes began playing soccer, (c) how long they have played on their current team, (d) what their main objective is in their sport (e.g., play professionally, play at the collegiate level etc.) and (e) gender of team support staff.

Instruments

Youth Experiences Survey for Sport. The Youth Experience Survey for Sport (YES-S) (MacDonald et al., 2012) is a 37-item questionnaire that assesses youth's developmental experiences of organized sport. The questionnaire is broken down into several domains: (a) personal and social skills, (b) cognitive skills, (c) goal setting, (d) initiative experiences, and (e) negative experiences. Participants scored items on a 4-point Likert scale which ranges from 1 (not at all) to 4 (yes definitely), describing the extent to which they resonated with a given experience in sport (e.g., I set goals for myself in this activity). The YES-S is a sport specific adaptation of Hansen and Larsen's (2005) Youth Experiences Survey (YES) 2.0. While the original YES 2.0 did not demonstrate adequate factorial validity in sport contexts, the revised YES-S was specifically developed and tested for factorial validity with youth athletes, and has been shown to be a reliable and appropriate instrument for measuring both positive and negative developmental experiences in organized Sport (MacDonald et al., 2012).

Perceived Motivational Climate in Sport Questionnaire. The Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Selfriz et al., 1992) assesses athletes' perceptions of their sport environment. The questionnaire includes 33 items measuring both performance-oriented and mastery-oriented climates within a team in a random order. Originally developed for a basketball context, the items were later adapted to a broader sport context by changing the wording from "On this basketball team..." to "On this team..." (Erikstad et al., 2021), making it applicable to soccer. Responses are scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The PMCSQ has demonstrated predictive validity where

perceptions of a mastery-oriented climate have been positively associated with satisfaction in team membership and negatively related to performance-induced stress (Walling et al., 1993).

Peer Motivational Climate in Youth Sport Questionnaire. The Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005) is used to assess peer-created motivational climates. The instrument consists of 21 items divided into mastery-oriented and performance-oriented climates. Mastery-oriented items capture domains such as improvement, relatedness/autonomy support, and effort, while performance-oriented items capture intra-team competition and intra-team conflict. These domains are not disclosed to participants, and all items are presented in random order to reduce bias. Participants rate each item beginning with the prompt “On this team, most athletes...” using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The PeerMCYSQ has demonstrated factorial validity, internal consistency, and test-retest reliability (Ntoumanis & Vazou, 2005), providing valuable insight into peer-created motivational climates in youth sport.

Data Analysis

Given the exploratory nature of the study, all analyses were designed to identify potential patterns and relationships across the variables of interest, that may inform future research. All the YES-S (MacDonald et al., 2012), PMCSQ (Selfriz et al., 1992), and PeerMCYSQ (Ntoumanis & Vazou, 2005) scores were recorded in SPSS 31.0 (Statistical Package for the Social Sciences) for analysis.

Descriptive statistics were examined to develop an understanding of the motivational climates present within high-performance girls’ soccer contexts (i.e., first objective) and the developmental outcomes experienced by athletes (i.e., second objective). While developmental

experiences and perceived motivational climates may reasonably differ across programs, analyses were not conducted by team or province, as separating the data in this way was not feasible due to ethical considerations, including the need to preserve participant confidentiality and avoid the potential identification of individuals or specific teams/programs.

To address the third objective, the PMCSQ and PeerMCYSQ scores were treated as independent variables, while the YES-S scores served as the dependent variables. To address the third objective, Pearson's correlations were first run to explore the relationships between all independent and dependent variables. Subsequently, various multivariate regression models were run, examining each developmental experience subscale (personal and social skills, cognitive skills, goal setting, and initiative, negative experiences). To simplify the interpretation of results of the overall model, the four positive experience subscales (personal and social skills, cognitive skills, goal setting, and initiative) were combined into a single overall positive experience score. This decision was based on initial multivariate regression analyses, which indicated that none of the individual positive experience subscales were significantly predicted by coach- and peer-created motivational climates. Negative experiences were analyzed separately. Additional regressions were computed for coach-created and peer-created motivational climates, while YES-S subscales remained separate to ensure that any meaningful associations could be detected. Additionally, individual predictors within the regression models were examined and interpreted even when the overall model was not statistically significant; this approach was adopted to allow for a more comprehensive examination of potential relationships among variables and to identify patterns that may warrant further investigation in future research. Results are presented using regression models for clarity.

Methodological Rigor

Several steps were taken to ensure methodological rigor and data quality in this study. First, we used well-established instruments with demonstrated validity and reliability in sport contexts, including the YES-S (MacDonald et al., 2012), the PMCSQ (Seifriz et al., 1992), and the PeerMCYSQ (Ntoumanis & Vazou, 2005). These measures have been tested for factorial validity, internal consistency, and test–retest reliability in previous research, supporting their appropriateness for assessing developmental experiences and motivational climates in youth sport. Second, standardized procedures were followed to maintain consistency across participants. Surveys were administered online, ensuring anonymity and confidentiality, and all athletes received the same briefing before completing the questionnaires. This minimized potential bias in responses and encouraged honest reporting. Finally, data were screened for quality prior to analysis. Incomplete responses were excluded, and statistical assumptions underlying regression analyses (e.g., normality, linearity, and multicollinearity) were checked to ensure the robustness of findings. Normality of residuals was examined using histograms and Normal P–P plots, which indicated that the residuals were relatively normally distributed. Linearity and homoscedasticity were assessed using scatterplots of standardized residuals and standardized predicted values. The plots showed no evidence of curvature or heteroscedastic patterns, suggesting that both assumptions were met. Multicollinearity was assessed by examining Variance Inflation Factor (VIF) values and tolerance statistics. All VIF values were below 5, and all tolerance values exceeded .20, indicating no issues with multicollinearity. Lastly, independence of errors was evaluated using the Durbin–Watson statistic, which fell within the acceptable range (1.5–2.5). Cronbach’s alpha values ranged from .62 to .93 across

subscales, indicating generally acceptable to excellent internal consistency for an exploratory study. Together, these steps strengthened the reliability and validity of the study's results (Tabachnick & Fidell, 2019).

Chapter 4: Results

Descriptive Statistics: Motivational Climates and Developmental Experiences

Table 1 provides descriptive statistics for coach- and peer-created motivational climates and athletes' developmental experiences. Addressing the study's first objective, the girls perceived the coach-created climate of their high-performance soccer programs to be mainly mastery-oriented ($M = 3.74$, $SD = 0.46$, with a maximum score of 5), with the coach-created performance climate scores being lower ($M = 2.92$, $SD = 0.62$). Participants indicated that peers initiated a mainly mastery-oriented climate ($M = 5.51$, $SD = 0.99$, with a maximum score of 7), with scores for the peer-created performance climate being lower ($M = 3.89$, $SD = 0.62$). Specifically, participants reported the highest scores on the peer-created mastery subscales for effort ($M = 5.86$, $SD = 0.96$), followed by relatedness and support ($M = 5.57$, $SD = 1.05$), and improvement ($M = 5.02$, $SD = 1.20$). The peer-created performance climate subscale ratings were lowest in intra-team conflict ($M = 3.44$, $SD = 1.45$), with intra-team competition scoring higher ($M = 4.25$, $SD = 1.04$).

To address the second objective, scores for positive developmental experiences (personal and social skills, cognitive skills, goal setting, and initiative) were high ($M = 3.20$, $SD = 0.34$, with a maximum score of 4). The positive subscale scores indicated that developmental experiences related to initiative were perceived highest ($M = 3.65$, $SD = 0.42$), followed by goal setting ($M = 3.39$, $SD = 0.51$), personal and social skills ($M = 3.37$, $SD = 0.34$), and cognitive skills ($M = 2.37$, $SD = 0.65$). Perceived negative experiences scored lower ($M = 1.80$, $SD = 0.50$).

Relationships Between Perceived Motivational Climates and Developmental Experiences

To address the study's third objective, to explore the relationship between predictor (i.e., motivational climates) and outcome (i.e., developmental experiences) variables, Pearson correlation coefficients were first computed to examine relationships among the main variables. As shown in Table 2, a strong, statistically significant positive correlation was found between perceived coach-created performance climate and negative experiences ($r = .526, p < .01$), and between peer-created performance climate and negative experiences ($r = .583, p < .01$), suggesting that both coach- and peer-created performance climates were associated with more negative experiences. Conversely, a significant negative correlation was found between coach-created mastery climates and negative experiences ($r = -.726, p < .01$), and between peer-created mastery climate and negative experiences ($r = -.681, p < .01$), suggesting that perceived mastery oriented motivational climates were associated with fewer negative experiences. Additionally, a significant negative correlation was found between coach-created performance climate and cognitive skill development ($r = -.325, p < .05$); both coach- and peer- created mastery climates were positively correlated with goal setting ($r = .346, p < .05$; $r = .361, p < .05$, respectively); and peer-created mastery climate was positively associated with initiative ($r = .373, p < .05$). Collectively, these correlations suggest a negative relationship between coach-created performance climates and cognitive skills, and positive relationships between mastery climates and goal setting and initiative.

Motivational Climates Predicting Positive and Negative Experiences

Multiple linear regression analyses were conducted to further investigate and determine the extent to which coach-created and peer-created motivational climates predicted youth's

developmental experiences in sport. Initially, five multivariate regressions were conducted, examining how the independent variables (i.e., coach and peer created climates) may predict each of the five developmental experiences (i.e., personal and social skills, cognitive skills, goal setting, initiative, and negative experiences). As none of the four positive experiences yielded significant results, the four positive experiences subscales were combined for reporting purposes and examined within a single overall positive experience regression model. As such, the final analyses involved two multiple linear regression models: one model examining how motivational climates may predict positive experiences (Table 3) and one examining how motivational climates may predict negative experiences (Table 4).

The first overall model (Table 3), examining motivational climates and positive experiences, was not significant, $F(4, 29) = 2.48, p > .05$ indicating that motivational climates together accounted for only 15% of the variance in positive experiences; however, peer-created performance climates emerged as a significant individual predictor of positive experiences ($\beta = .482, p < .05$). The second overall model (Table 4), examining motivational climates and negative experiences was significant, $F(4, 29) = 11.72, p < .001$, indicating that motivational climates together accounted for 57% of the variance in negative experiences. Examination of the standardized coefficients revealed that coach-created mastery climate was a significant negative predictor of negative experiences ($\beta = -.434, p < .05$), indicating that higher perceptions of coach-created mastery were associated with fewer negative psychosocial experiences.

Coach- and Peer-Created Climates Predicting Developmental Experiences

To further explore the relationship between motivational climates and developmental experiences, separate analyses were conducted for coach-created and peer-created motivational

climates, and each of the five developmental experiences, as presented in Tables 5 and 6. When examining the relationships between coach-created motivational climates and each of the five developmental experiences (Table 5), only the model for negative experiences was significant, $F(2,35) = 24.80, p < .001$, with coach created climates explaining 56% of the variance in negative experiences. Coach-created mastery climates were negatively related to negative experiences ($\beta = -.613, p < .001$) (i.e., higher mastery climates were associated with lower negative experiences scores), and coach-created performance climates were positively related to negative experiences ($\beta = .269, p < .05$) (i.e., higher performance climates were associated with higher negative experiences). Additionally, while overall models were not significant, coach-created performance climates significantly negatively predicted cognitive skills ($\beta = -.411, p < .05$) (i.e., higher performance climates were associated with lower cognitive skills), and coach-created mastery climates significantly predicted goal setting ($\beta = .374, p < .05$) (i.e., higher mastery climates were associated with higher goal setting scores).

When examining the relationships between peer-created motivational climates and each of the five developmental experiences (Table 6), two models emerged as significant; goal setting and negative experiences. Specifically, peer-created climates were a significant predictor of goal setting, $F(2, 31) = 4.40, p < .05$, explaining 17% of the variance in goal setting experiences. Peer-created mastery climates were positively related to goal setting ($\beta = .254, p < .01$), aligning with associations between coach-created mastery climates and goal setting (outlined above). Further, peer-created climates were a significant predictor of negative experiences, $F(2, 31) = 16.05, p < .001$, explaining 48% of the variance in negative experiences. Within this model, peer-created mastery climates emerged as a negative predictor of negative experiences ($\beta = -.519, p <$

.05) (i.e., higher mastery climates were associated with lower negative experiences), while peer-created performance climates were not a significant predictor of negative experiences.

Chapter 5: Discussion

The purpose of this study was to examine the relationship between motivational climates and developmental experiences among high-performance girl soccer players in Canada. Specifically, analyses aimed to (a) identify which motivational climates exist within girls' high-performance soccer, (b) understand athletes' developmental experiences in high-performance soccer programs, and (c) explore the relationships that exist between motivational climate and PYD outcomes (i.e., developmental experiences) within this population. Drawing upon the experiences of 34 adolescent (i.e., aged 16-18) girl high performance soccer players within three high performance leagues across Canada, findings suggest that overall, participants experienced a more mastery-oriented climate from coaches and peers, although they also experienced elements of a performance-oriented climate, while experiencing moderate-high positive developmental experiences, and low-moderate negative developmental experiences. The relationships found between motivational climate and positive developmental experiences reinforce past research in sport settings (García-Calvo et al., 2014; Schailée et al., 2017), showing that mastery orientated climates fostered by both coaches and peers are associated with positive experiences. Additionally, coach- and peer-created mastery-oriented motivational climates were associated with higher goal setting and fewer negative experiences, while coach-created performance climates were associated with more negative experiences. Collectively, these findings reinforce the importance of team cultures (i.e., created by coaches and peers) that promote supportive relationships with an emphasis on effort (Schailée et al., 2017).

Perceived Motivational Climates in High-Performance Girls Soccer

Addressing the first objective, the findings of this study suggest coach-created motivational climates were perceived as mainly mastery-oriented, with mean scores notably higher for mastery climate than for performance climate. This indicates that coaches in these programs tended to emphasize effort, learning, and personal improvement rather than normative comparison or outperforming others. Similarly, participants reported that peers primarily initiated a mastery-oriented climate, with peer mastery scores exceeding peer-created performance climate scores, suggesting that teammates reinforced values such as cooperation, effort, and mutual support, contributing to a positive social environment (Mossman et al., 2021). Given the competitive nature of high-performance sport, the presence of a strong mastery-oriented peer climate is particularly noteworthy and may serve as a protective factor against excessive pressure or maladaptive social comparison.

However, it is worth noting scores indicating that participants perceived moderate coach-created and peer-created performance climates as well. The findings of the study align with previous research suggesting that motivational climates are not mutually exclusive (Roberts & Nerstad, 2020), as various key social agents, such as coaches and peers can exhibit performance-oriented characteristics within a highly mastery-oriented context. These findings are not unexpected given the high-performance context, where selection, ranking, and performance outcomes are inherent features of the environment. Importantly, the coexistence of intra-team competition/conflict alongside strong mastery-oriented climates indicates that competitive demands did not appear to overshadow opportunities for effort, improvement, and support.

In comparison to previous studies examining motivational climate among mixed-gender high-performance swimmers in Germany and Japan (Alfermann et al., 2013), and high-performance Norwegian soccer players (Haugen et al., 2020), the present findings indicate higher perceptions of a mastery-oriented climate and marginally lower perceptions of a performance-oriented climate. It is important to note that the cultural context may represent a potential confounding factor, as these studies were conducted with athlete populations in Europe and Asia. Nevertheless, these comparisons suggest that Canadian adolescent girl athletes participating in high-performance soccer demonstrate mastery climate perceptions that are consistent with (albeit slightly higher than) other high-performance sports based on the existing literature, indicating that this population exhibits the goal orientation patterns that were expected.

When compared with research on mixed-gender adolescent samples in recreational sport settings (Eys et al., 2013; Macdonald et al., 2011; Mossman et al., 2021), athletes in this study had higher performance climate scores, while mastery climate scores were comparable but marginally lower. This was also observed in studies pertaining to intermediate level athletes (high school or regional-level competition), where athletes scored slightly higher on coach-created mastery and slightly lower on coach-created performance when compared to the present study (Miller et al., 2004; Scott et al., 2021; Habeeb et al., 2023). Finally, when comparing findings of this study to research involving an all-girls sample of disadvantaged youth (Schailée et al., 2017), disparities were even more pronounced, with high-performance girl athletes in this study scoring higher on coach- and peer-created performance climates and notably lower on coach-created mastery-oriented climates. Although this study is exploratory in nature, the consistencies and inconsistencies in findings between this study and previous work in diverse

contexts, perpetuates the notion that high-performance sport tends to adopt more performance goal orientations than recreational or intermediate level sport.

Perceived Developmental Experiences in High-Performance Girls Soccer

Addressing the second objective, focused on examining athletes' developmental experiences measured by the YES-S, findings suggest that participants generally reported positive developmental experiences within their high-performance soccer context, but also some negative experiences. Overall, scores indicated considerable experiences related to personal and social skill development, initiative, and goal setting, suggesting that participation in these high-performance programs provided opportunities for athletes to develop transferable life skills in addition to sport-specific competencies. These findings are consistent with previous research suggesting that the structured, challenging, and socially supportive nature of high-performance sport environments guided by coaches and peers may foster PYD outcomes (MacDonald et al., 2012; Strachan et al., 2011; Taylor & Bruner, 2012). Findings of this study also indicated that athletes experienced some negative experiences relating to stress, inappropriate adult behavior, and negative peer interactions, similar to past research in diverse youth sport contexts (Gould et al., 2012; MacDonald et al., 2011; Rongen et al., 2020); while less frequent, the presence of negative experiences nonetheless warrants consideration. Collectively, these findings highlight the potential for high-performance girls' soccer to serve as a context not only for athletic development, but also for broader PYD when key developmental assets are present, but that even generally supportive and developmentally rich sport environments may still expose athletes to certain challenges or stressors.

In comparing the developmental experiences scores of high-performance athletes in this study to previous research, scores were generally consistent with those of athletes studied across a range of youth sport programs; however, some specific differences and nuances warrant consideration. Specifically, the developmental experience scores reported by high-performance girls soccer players in the present study were slightly higher than those observed in other mixed-gender diverse Canadian youth sport contexts (Bruner et al., 2017; MacDonald et al., 2011), and higher than those observed in an all-girl sample of disadvantaged youth in urban dance and martial arts programs in Belgium (Schaillée et al., 2017). Meanwhile, developmental experiences scores in the present study were comparable to those reported among mixed-gender youth high-performance soccer players in Australia (O'Connor et al., 2020). The similarities within high-performance sport, and slight differences in other youth sport contexts may reflect unique features of high-performance environments, such as increased structure, resources, or coach support (Sotiriadou, 2013). It is also important to note that although athletes in the current study reported slightly higher scores for positive developmental experiences, overall scores for negative experiences were also marginally higher than those observed in other youth sport settings (Bruner et al., 2017; MacDonald et al., 2011; O'Connor et al., 2020; Schaillée et al., 2017). Higher negative experiences could potentially be attributed to the high expectations and competitive pressures that characterize high-performance sport (Gould et al., 2012; MacDonald et al., 2011), while underscoring the need for further context-specific research to better understand how developmental experiences may vary across levels of competition, in addition to gender, age group, sport type, and culture.

Relationships Between Perceived Motivational Climates and Developmental Experiences

The main objective of this study was to examine the relationship between coach- and peer-created motivational climates, and the PYD outcomes girls experience from their participation in high-performance soccer. This study aimed to build upon past research indicating that relationships exist between coach- and peer-created motivational climates and developmental experiences (García-Calvo et al., 2014; Mossman et al., 2021; Schailée et al., 2017); however, no studies to date have examined these relationships in a sample of high-performance adolescent girl athletes, specifically in the sport of soccer in Canada.

The main effects observed in the present study, indicate that greater emphasis on a mastery-oriented motivational climate was associated with increased positive developmental outcomes, while greater emphasis on a performance-oriented climate was associated with higher negative experiences. The findings are consistent with AGT (Nicholls, 1984, 1989), which proposes that mastery-oriented environments emphasizing effort, learning, and self-referenced improvement encourage more adaptive psychological and developmental outcomes (Ames, 1992; Duda & Nicholls, 1992; Gould et al., 2012), while performance-oriented climates prioritizing normative comparison and outcome-based success are linked to increased pressure and maladaptive experiences (MacDonald et al., 2011; Gould et al., 2012).

Mastery Climate and Positive Developmental Experiences

Focusing on relationships between mastery-oriented climates and specific developmental outcomes, both coach- and peer-created mastery climates were positively associated with goal setting experiences, aligning with previous studies in youth sport contexts (MacDonald et al., 2011; Schailée et al., 2017). This finding suggests that goal setting behaviors are more likely to

occur when athletes are immersed in mastery-oriented environments that emphasize positive peer relationships, collective effort, and self-referenced improvement rather than normative comparison. More specifically, these findings may be explained given mastery-oriented environments involve athletes' self-regulation, intrinsic motivation, and taking personal responsibility for their improvement - key mechanisms underlying effective goal setting behaviours (Ames, 1992).

Additionally, peer-created mastery climates were significantly correlated with initiative; however, this relationship did not emerge as significant in the regression analyses. Although the present findings do not allow for causal inferences, this pattern nonetheless suggests that peer-created mastery climates may play a meaningful role in fostering initiative among athletes, as such environments emphasize shared effort, cooperation, and proactive engagement within teams. This finding also aligns with previous work in more recreational settings, showing mastery climates were positively associated with initiative (MacDonald et al., 2012). When peers reinforce mastery-oriented values, athletes may feel more encouraged to take responsibility for their own progress, demonstrate persistence, and actively contribute to the team. Overall, there appears to be a need for further research examining this potential relationship within high performance sport settings, and to in turn gain understanding of potential mechanisms underlining this pattern.

Mastery Climate and Negative Experiences

In addition to associations between mastery climates and specific positive developmental experiences, (negative) relationships were also observed between coach-created and peer-created mastery climates and negative experiences, suggesting mastery climates may function as

protective contexts for youth in sport. This is particularly notable within high-performance settings where pressure, evaluation, and selection are inherent. When coaches de-emphasize competition and extrinsic rewards and instead orient team goals toward mastery (such as effort and personal improvement), athletes may experience reduced perceptions of threat and failure, which in turn may buffer against stress-related and maladaptive outcomes of sport (Gould et al., 2012; Smith et al., 2007). While coach behaviors have traditionally been positioned as the primary driver of motivational climate, emerging literature emphasizes teammates as key social agents in sport, particularly during adolescence, when peer approval and group norms may significantly shape athletes' perceptions and experiences (Schaillée et al., 2017); peer-created mastery climate may also be critical to reducing negative experiences such as stress, and feeling excluded by normalizing effort, cooperation, and mutual support (MacDonald et al., 2011). The present study extends understanding of peer-created mastery climates in mitigating negative experiences, within high-performance girls' sport environments.

Performance Climate and Positive Developmental Experiences

Coach-created performance climates were negatively associated with cognitive skill development, suggesting that environments emphasizing comparison, external evaluation, and outperforming others may be less conducive to the development of cognitive skills such as problem solving or decision making. This finding aligns with AGT (Nicholls, 1984, 1989), which suggests that performance-oriented climates may constrain opportunities for cognitive development by prioritizing outcomes over learning processes (Duda & Nicholls, 1992). Meanwhile, existing research posits that mastery-oriented coaching behaviours that support

youth working towards individual goals have been linked to cognitive skill development (Gould & Carson, 2010).

Despite the overall regression predicting positive experiences model not being significant, somewhat surprisingly, peer-created performance climates predicted positive developmental experiences overall. At a first glance, this finding may suggest that peers' facilitation of a performance driven climate can foster athletes' PYD. However, when broken down into the sub-domains of positive experiences (i.e., personal and social skills, cognitive skills, goal setting and initiative), this relationship did not hold any significance. Additionally, a positive correlation between peer-created performance climates and negative experiences also suggests overall adverse effects of a performance-oriented climate cultivated by peers. Despite this, there may be some positive outcomes associated with peer-created performance climates, emphasizing a need for further exploration of this potential relationship and underlying mechanisms.

Though performance climates have traditionally been linked to negative experiences (Duda & Balaguer, 2007), studies have also found that performance climates are sometimes associated with PYD (MacDonald et al., 2011). Performance climates that emphasize competitive challenge amongst peers may support motivation, focus, or performance-related learning for some athletes, particularly in high-performance contexts. However, such potential benefits are likely contingent on factors such as athlete maturity, perceived competence, and the extent to which performance demands are balanced with mastery-oriented support. Therefore, further research is necessary to substantiate these claims.

Performance Climate and Negative Experiences

Perceived performance-oriented motivational climates created by both coaches and peers were strongly associated with negative developmental experiences in the present study, reinforcing the potential risks of overly outcome-focused youth sport environments. These findings are consistent with previous work indicating that coach-created performance climates may increase athletes' perceptions of pressure, fear of failure, and reduce perceived autonomy, which have been consistently linked to stress-related and maladaptive outcomes in youth sport (Gould et al., 2012; O'Rourke et al., 2014). Similarly, peer-created performance climates may intensify negative experiences through social comparison, judgment, and competition within the team, particularly during adolescence when peer approval is highly valued. When teammates reinforce performance-based norms, athletes may experience increased anxiety, reduced psychological safety, and heightened concern about mistakes or status within the group (Mossman et al., 2021). In high-performance settings, where evaluation is inevitable, an unbalanced emphasis on performance may exacerbate negative experiences rather than enhance development, underscoring the need to carefully manage performance demands. Overall, these findings support the idea that mastery-oriented climates better promote athletes' psychosocial development and enjoyment, which is important for sustaining sport participation and supporting positive youth development during adolescence.

Strengths, Limitations, and Future Directions

Advancing Theory and Understanding

A key strength of this study was the exploratory nature of the design, whereby multiple analytical approaches allowed for the exploration of emerging patterns across predictors. Specifically, the study allowed for consideration of various means by which motivational

climates may influence positive and negative developmental experiences, and in turn, how this may advance theoretical understandings within youth sport.

The findings can be understood through AGT (Nicholls, 1989), which proposes that athletes' experiences are shaped by the goal orientations that exist within the sport environment. Consistent with this framework, mastery-oriented climates emphasizing effort and improvement were associated with more adaptive developmental outcomes, whereas performance-oriented climates centered on comparison and evaluation were linked to negative experiences. These results align with previous research demonstrating that mastery climates tend to promote more positive psychosocial outcomes in youth sport (MacDonald et al., 2011; Gould et al., 2012). While previous studies have begun to document similar motivational patterns in high-performance settings (Alfermann et al., 2013; Haugen et al., 2020), the present findings contribute further evidence within the context of Canadian girls' soccer, an understudied population. In doing so, this study helps strengthen the applicability of AGT to high-performance youth sport and highlights the importance of considering motivational climates when examining developmental experiences in high-performance training environments.

The present findings can also be interpreted through the lens of the PAF (Côté et al., 2016, 2020), which highlights how quality relationships and appropriate sport settings interact to influence both immediate PYD outcomes (5Cs) and long-term developmental outcomes (3Ps) simultaneously. The motivational climate created by coaches and peers represents a central contextual feature shaping athletes' day-to-day sport experiences and, in turn, their developmental outcomes. The protective role of mastery-oriented climates observed in this study aligns with the PAF's assertion that environments emphasizing effort, learning, and supportive

relationships are more likely to facilitate personal asset development. Importantly, the findings of the present study highlight that both coaches and peers function as influential social agents within the sport environment, reinforcing the PAF's multidimensional view of development as emerging from the interaction between individuals and their social contexts. These results support the practicality of the PAF for understanding psychosocial development in high-performance sport, and underscore the need to intentionally structure competitive environments to promote asset-building experiences alongside performance outcomes.

Finally, another key strength of this study is the examination of both coach- and peer-created motivational climates, demonstrating that athletes' developmental experiences are shaped by the combined influence of multiple social agents, particularly peers, within the sport environment. This is in line with Bronfenbrenner's (1994) EST, reinforcing how proximal processes within the immediate sport environment contribute to youths' developmental experiences.

Limitations of Research Design

Nonetheless, given the exploratory nature of this study, the absence of additional significant findings was not unexpected and may reflect various study limitations, in turn informing avenues for future research. Firstly, recruitment challenges impacted the final sample size, reducing statistical power, particularly in regression analyses, and subsequently limiting the detection of smaller but potentially meaningful effects. Due to the lack of direct access to athletes, recruitment relied on intermediary contacts (e.g., coaches, administrators and/or parents/guardians), potentially reducing response rates and introducing potential selection bias. Individuals responsible for distributing the survey had varying backgrounds (e.g., coaching,

athlete development, administration); those with a background in sport psychology may have been more inclined to distribute the survey to their athletes, leading to a potential overrepresentation of environments that are conducive to positive development, thereby warranting caution when interpreting the findings.

The exploratory nature of the study also resulted in a more inclusive analytical approach whereby individual predictors were interpreted even when the overall regression model was not statistically significant. Although this approach facilitated the identification of potentially meaningful relationships for future investigation, it also increases the risk of Type I error (i.e., false positives). As such, findings should be interpreted cautiously and should be explored in future research.

Additionally, the study relied exclusively on self-report data, which introduces the potential for response biases such as social desirability or inaccurate recall. The study also did not account for demographic variables or structural barriers (e.g., socioeconomic status, ethnicity, or access to resources), which may influence athletes' experiences within sport environments and limit the ability to examine differential effects across subgroups. Further, the cross-sectional design limited our ability to draw directional conclusions regarding the relationships between motivational climate and developmental experiences. While meaningful associations were identified, the directionality of these relationships cannot be determined. Given the dynamic nature of athletes' lived experiences, it is likely that these relationships are reciprocal – meaning athletes' developmental experiences may also shape their perceptions of their motivational climates.

Finally, measurement-related limitations have previously been outlined regarding the negative experiences subscale of the Youth Experience Survey for Sport (YES-S) (MacDonald et al., 2012). While the inclusion of negative developmental experiences has been intentionally structured to address a broad range of experiences across various stages of adolescence (MacDonald et al., 2012), the breadth of this subscale may limit interpretability, as it does not differentiate between specific types or sources of negative experiences. Consequentially, it is unclear whether reported negative experiences reflect factors such as interpersonal conflict, performance-related pressure, organizational stressors, or broader psychosocial challenges within the sport environment, constraining the possibility of making precise conclusions about the mechanisms through which motivational climates may contribute to negative developmental outcomes. Another measurement-related limitation relates to the cognitive skills subscale of the YES-S, and may help explain the relatively lower scores observed on this subscale. Specifically, the subscale's items (i.e., pertaining to reading, writing, math, and computer skills) may not adequately capture sport-specific cognitive development such as decision-making, game awareness, or learning through mistakes. As a result, athletes may not fully recognize or report how their sport environment supports the development of these cognitive capacities, suggesting that future adaptations of the YES-S could better reflect the transfer of learning and thinking skills within high-performance sport contexts.

Advancing Future Research

To mitigate some of the above outlined limitations, future research should draw upon qualitative approaches to capture athletes' lived experiences, to more deeply understand how athletes interpret goal orientations, how these orientations are reinforced through various

interactions, as well as better capturing the nature, context, and sources of negative experiences in high-performance sport settings. Future research may also consider drawing upon longitudinal approaches to gain a better understanding of how high-performance environments can be structured to support both athletic success and PYD over time. This would enable researchers to understand how coach- and peer-created climates evolve across developmental stages and competitive transitions, and how these climates influence changes in developmental outcomes. Further, there is value in better understanding how various demographic and structural variables influence broader contextual factors within high performance athletes' development.

Another key consideration for further study would be the inclusion of parental influences in creating motivational climates, given they have been identified as key in shaping youth athletes' developmental experiences (Fraser-Thomas & Strachan, 2014; Kramers et al., 2023; Mossman et al., 2021). Parent-created motivational climates may uniquely interact with coach- and peer-created climates to influence both positive and negative developmental experiences, as cues within a sport environment can be perceived differently due to family influence (Fraser-Thomas et al., 2005; Mossman et al., 2021). Future research should consider examining parental influences alongside those of coaches and peers to better capture the complex, multi-level social environments that shape girls' developmental experiences in high-performance sport.

Finally, the study provides valuable insight into high-performance girl soccer players, an understudied group which is growing in relevance, particularly given the recent adoption of the National Soccer League in Canada, which may expand opportunities and developmental pathways for girl athletes. Findings contribute meaningfully to an emerging research focus among youth involved in high performance sport, aligning with the limited existing prior

research examining the relationship between motivational climates and psychosocial developmental outcomes. Nonetheless, the context-specific nature of the sample limits the generalizability, highlighting the value of continued research within high-performance sport, within other age groups (i.e., emerging adulthood), sports, populations, and cultures.

Preliminary Practical Implications

This study provides valuable insight into how high-performance girl athletes experience sport, at a time when competitive opportunities for girls' soccer continue to expand in Canada. Findings provide preliminary evidence that high-performance sport can serve as a context for psychosocial skill development, particularly when supported through a mastery-oriented motivational climate. Although this study did not compare perceived developmental experiences across different levels of competition and therefore cannot offer comparative conclusions, the findings suggest moderate to high scores for positive developmental experiences within high-performance sport contexts. Beyond the physical benefits and opportunities associated with progression to collegiate, university, or professional levels, high-performance sport appears to also provide meaningful experiences for psychosocial development. These findings are particularly relevant in the context of ongoing concerns about early specialization and dropout, suggesting value in continued participation in high-performance programs for athletes whose goals include elite competition. Essentially, findings underscore the importance of recognizing high-performance sport as a potential developmental context for personal growth, enjoyment, or social engagement, alongside performance-based goals.

Findings of this study also provide additional support for an intentional approach to psychosocial and life skill development (Fraser-Thomas et al., 2005; Holt et al., 2017). Although

the study did not consistently show a direct link between motivational climates and positive developmental experiences, findings demonstrated performance climates were linked to negative experiences, while mastery climates served as a protective factor against negative experiences. These results suggest that the structure and social environment of high-performance sport matters for athlete wellbeing, and that intentional efforts to foster mastery-oriented values may help mitigate some of the developmental risks associated with performance-driven settings. This information may be helpful to coaches as they try to best support their athletes' psychosocial development alongside their performance goals.

As findings demonstrated the importance of coaches cultivating a mastery-oriented motivational climate within high-performance settings, coaches should intentionally emphasize effort, learning, and personal improvement. Compared to recreational sport contexts, high-performance programs often operate with more formalized and regulated coaching structures, including licensing and certification requirements. This may represent a practical advantage, as coach education initiatives aimed at promoting mastery-oriented behaviors can be systematically implemented and monitored more closely. The present findings contribute preliminary support for the inclusion of PYD informed coaching strategies within coach education, offering evidence-based justification for the intentional promotion of mastery-oriented coaching practices in high-performance settings.

A final key takeaway relates to the significant impact of peers in shaping athletes' experiences. Previous work has found perceptions of a peer-created mastery climate to be related to greater enjoyment and increased self-esteem (Ntoumanis & Vazou, 2005). Given the heightened importance of peer relationships during adolescence, strategies that intentionally

support positive peer dynamics, such as team-based goal setting, leadership development, and team-bonding activities may further enhance athletes' developmental experiences. Relatedly, other researchers have suggested peer-created motivational climates are influenced by the broader coach-created climate (García-Calvo et al., 2014). Though this relationship has not been well studied, our correlation analysis suggested a very strong correlation between coach- and peer-created mastery climates. As a result, when mastery-oriented values are modeled and reinforced by coaches, they may contribute to the development of supportive peer climates. Creating team environments that encourage support amongst teammates, shared goal setting, and psychological safety may help reduce negative experiences associated with social comparison and internal competition.

In sum, while exploratory in nature, this study's findings reinforce the value of continuing to examine the relationship between motivational climates and developmental outcomes in high-performance sport using diverse methodological approaches. Expanding this work through longitudinal, qualitative, and mixed-methods research may provide deeper insight into how psychosocial development unfolds within high-performance sport and how these environments can be optimized. Such efforts may ultimately support the design of holistic sport programs that balance performance demands with athlete wellbeing and long-term engagement, contributing to more sustainable and developmentally supportive high-performance pathways.

Chapter 6: Conclusion

This study examined the relationships between motivational climates and developmental experiences among high-performance girl soccer players in Canada, addressing an important gap in youth sport research. Overall, the findings indicate that athletes perceive their environments as predominantly mastery-oriented while still experiencing elements of performance-oriented climates, reflecting the realities of high-performance sport. Importantly, mastery-oriented climates created by both coaches and peers were associated with more positive developmental experiences and fewer negative experiences, whereas performance-oriented climates were linked to greater negative experiences. Interestingly, peer-created performance climates were also associated with more positive developmental experiences, suggesting that certain performance-oriented elements among teammates may be experienced as motivating or socially reinforcing in this context. At the same time, coach-created mastery climates were particularly important in reducing negative developmental experiences, highlighting their protective role within high-performance environments. Collectively, these results reinforce the role of motivational climate as a meaningful contextual factor shaping athletes' psychosocial experiences in high-performance settings. Further, when interpreted through the lens of high-performance sport, where competitive outcomes are a priority, these findings suggest that mastery-oriented approaches should not replace performance demands, but complement them in ways that support both development and performance.

By examining both coach- and peer-created motivational climates, this study contributes to a more comprehensive understanding of the social processes that influence development within a team sport environment. The findings suggest that while coaches play a critical role in

structuring motivational climates, peers are also influential in reinforcing values and norms that shape athletes' day-to-day experiences. Results of this study underscore the powerful and distinct role of peers in shaping developmental outcomes, highlighting the importance of considering multiple social agents when designing developmentally supportive high-performance programs.

Despite its exploratory nature, this study provides valuable insight into an understudied population and offers preliminary evidence that high-performance sport can support positive youth development when social environments emphasize effort, learning, and supportive relationships. As competitive pathways for girls' soccer continue to expand in Canada, these findings are timely and underscore the need to intentionally integrate developmental priorities alongside performance objectives. Collectively, this research supports continued investigation into how high-performance sport environments can be structured to promote both athletic success and psychosocial wellbeing, contributing to more sustainable and holistic athlete development pathways.

Tables

Table 1. Descriptive statistics for dependent, independent, and control variables (means and standard deviations) (N = 34).

	Mean	SD
Age	16.46	0.58
Coach-Created Motivational Climate		
Mastery	3.74	0.46
Performance	2.92	0.62
Peer-Created Motivational Climate		
Mastery	5.51	0.99
Improvement	5.02	1.20
Relatedness/Support	5.57	1.05
Effort	5.86	0.96
Performance	3.89	1.08
Intra-team Competition	4.25	1.04
Intra-team Conflict	3.44	1.45
Developmental Experiences		
Personal and Social Skills	3.37	0.34
Cognitive Skills	2.37	0.65
Goal Setting	3.39	0.51
Initiative	3.65	0.42
Negative Experiences	1.80	0.50

Notes: YES-S: Likert scale anchors between 1–4; PMCSQ: Likert scale anchors between 1–5; PeerMCYSQ: Likert scale anchors between 1–7; M = Mean; SD = Standard deviation.

Table 2. Pearson's Correlations for Predictor and Outcome Variables

	1	2	3	4	5	6	7	8
1. Coach-Created Mastery								
2. Coach-Created Performance	-.420**							
3. Peer-Created Mastery	.760**	.479**						
4. Peer-Created Performance	-.463**	.409*	-.610**					
5. Personal and Social Skills	.088	.267	.208	.056				
6. Cognitive Skills	-.032	-.325*	-.138	.288	.412**			
7. Goal Setting	.346*	-.089	.361*	.019	.357*	.324*		
8. Initiative	.270	-.078	.373*	-.197	.312*	.157	.490**	
9. Negative Experiences	-.726**	.526**	-.681**	.583**	-.112	-.161	-.462**	-.292

* p<. 05, ** p<. 01

Table 3. Multiple Regression Predicting Positive Psychosocial Experiences from Motivational Climates

	β	t	Sig.
Coach-Created Mastery	-.049	-1.96	.846
Coach-Created Performance	-.376	-2.02	.052
Peer-Created Mastery	.358	1.27	.213
Peer-Created Performance	.482*	2.35	.026

$R^2 = .255$, *Adjusted R*² = .152, $F(4, 29) = 2.48$, $p > .05$ (* $p < .05$, ** $p < .01$)

Table 4. Multiple Regression Predicting Negative Psychosocial Experiences from Motivational Climates

	β	t	Sig.
Coach-Created Mastery	-.434*	-.244	.021
Coach-Created Performance	.172	.130	.206
Peer-Created Mastery	-.126	-.063	.537
Peer-Created Performance	.235	.160	.121

$R^2 = .618$, *Adjusted R*² = .565, $F(4, 29) = 11.72$, $p < .001$ (* $p < .05$, ** $p < .01$)

Table 5. Multiple Regression Predicting Psychosocial Experiences from *Coach-Created* Motivational Climates

	R ²	Adjusted R ²	β	t	Sig.
Personal and Social Skills	.072	.019			.270
Mastery			-.030	-.17	.869
Performance			-.280	-1.56	.128
Cognitive Skills	.140	.091			.071
Mastery			-.205	-1.19	.244
Performance			-.411*	-2.38	.023
Goal Setting	.123	.073			.100
Mastery			.374*	2.15	.039
Performance			.068	.39	.700
Initiative	.074	.021			.259
Mastery			.288	1.61	.118
Performance			.043	.24	.813
Negative Experiences	.586*	.563*			<.001
Mastery			-.613*	-5.12	<.001
Performance			.269*	1.25	.031

* p<. 05, ** p<. 01

Table 6. Multiple Regression Predicting Psychosocial Experiences from *Peer-Created* Motivational Climates

	R ²	Adjusted R ²	β	t	Sig.
Personal and Social Skills	.096	.038			.207
Mastery			.386	1.79	.083
Performance			.292	1.35	.186
Cognitive Skills	.085	.026			.251
Mastery			.060	.28	.783
Performance			.325	1.50	.144
Goal Setting	.221*	.170*			.02
Mastery			.593*	2.96	.006
Performance			.380	1.90	.067
Initiative	.140	.085			.096
Mastery			.402	1.92	.065
Performance			.049	.23	.817
Negative Experiences	.509*	.477*			<.001
Mastery			-.519*	-3.27	.003
Performance			.266	1.67	.105

* p<. 05, ** p<. 01

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