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Examining the impact of the Respect in Sport Parent Program on the psychosocial experiences of minor hockey athletes

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ABSTRACT

Models of positive youth development suggest that athletes may be influenced by parent education programmes; however, there is little research examining the impact of such programmes on athlete outcomes. This study examined the impact of the Respect in Sport Parent Program on athlete outcomes among minor hockey players over three years. This study consisted of cross-sectional and longitudinal online surveys measuring athletes' positive and negative developmental experiences, prosocial and antisocial behaviours, parental support and pressure, and sport enjoyment and commitment. Athletes completed at least one online survey during the study period ($N = 366$; 84.2% males; 14–19 years of age; $M = 15.4$ years), and 83 athletes completed multiple surveys for longitudinal analyses. Cross-sectional results comparing athletes in leagues adopting the programme at different time points indicated significant differences in prosocial behaviours towards teammates. Multilevel longitudinal analyses revealed improvements in athletes' antisocial behaviours towards opponents, initiative, goal setting, and cognitive skills over time, regardless of whether they were in a league that implemented the programme. However, athletes in leagues that implemented the programme during the study reported greater improvements in antisocial behaviours towards opponents, and there were trends with respect to improved personal and social skills. These findings provide suggestions to improve the delivery and impact of parent education programmes in youth sport.

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Introduction

Youth sport settings are important contexts for the promotion of positive developmental outcomes such as emotion regulation and prosocial behaviours (Gano-Overway et al., 2009; Gould & Carson, 2011), social and physical competence, physical and global self-worth (Ullrich-French et al., 2012), setting personal standards and making friends (Bean & Forneris, 2016), and the development of personal and social skills, cognitive skills, goal setting, and initiative (MacDonald et al., 2011, 2012). However, these developmental outcomes are not automatically conferred upon youth participating in sport (Coakley, 2016), and there are multiple social and structural factors that have been implicated in the development of positive outcomes among youth in sport (Bean & Forneris, 2016; Gano-Overway et al., 2009; Holt et al. 2008; Neely & Holt, 2016). In a recent review and meta-synthesis of the qualitative literature on positive youth development in sport, Holt et al. (2017) proposed a model of positive youth development (PYD) to explain the factors and relationships that influence the development of positive outcomes among athletes. The model suggests that PYD outcomes may be developed implicitly within sport contexts that have a suitable PYD climate (e.g., positive and supportive relationships with parents, peers, and leaders/coaches) and that PYD outcomes may also be developed through explicit processes within sport settings (e.g., through programmes

that are structured around life skill building and transfer activities). At a broader level, Holt et al. (2017) model specifies that distal ecological systems factors such as community, policy, and culture also influence PYD processes in youth sport. This position is consistent with ecological perspectives of youth development suggesting that policies and programmes implemented at a macro level can influence youths' developmental contexts by creating a safe environment for youth to build and pursue healthy lives (Harwood et al., 2019; Lerner et al., 2002). Given the desire to promote positive developmental outcomes among youth athletes and minimize negative experiences that youth may face in sport, researchers have begun to focus on examining intervention strategies and approaches to promote more positive experiences for young athletes (Dorsch et al., 2017; Thrower et al., 2018).

Parents are thought to be a key target group for interventions to promote positive developmental outcomes among athletes, as they play an important role in socializing the experiences of youth sport athletes (Tamminen et al., 2017; Holt et al., 2008). There is a strong body of research documenting the negative and positive influences of parents in youth sport settings (for reviews, see Harwood et al., 2019; Knight et al., 2017). For example, research on parental involvement in youth sport indicates that athletes may perceive parental pressure as a source of stress (e.g., Kanters et al.,

2008; O'Rourke et al., 2011) and that parents' presence at competitions can be associated with heightened competitive anxiety for young athletes (e.g., Bois et al., 2009). Athletes' perceptions of parental expectations to win in competitions and concerns about criticism from parents have been linked to negative outcomes such as unhealthy forms of perfectionism (Sagar & Stoeber, 2009), reduced perceived competence (Babkes & Weiss, 1999), and heightened anxiety (Elliott & Drummond, 2017). Furthermore, athletes whose parents display more controlling or authoritarian parenting styles report lower self-esteem (Gagné, Ryan, & Bargmann, 2003) and greater likelihood to engage in norm-breaking behaviours (Juntumaa et al., 2005). Conversely, athletes typically display more positive outcomes such as higher sport satisfaction, intention to continue in sport, enjoyment, competence, and confidence when their parents display autonomy-supportive parenting styles that support athletes' self-determined involvement and motivation in sport (Gagné et al., 2003; Juntumaa et al., 2005) and when parents emphasize task improvement and effort rather than winning and out-performing other athletes (e.g., Keegan et al., 2010; Knight et al., 2016). Parents also play a key role in socializing and interpreting values and communicating life skills to athletes (Fredricks & Eccles, 2004), and as such parents represent a key agent or pathway through which athletes' sport experiences may be improved.

Due to their significant involvement and influence on youth athletes' experiences, efforts have been made to engage parents and provide them with education to help improve athletes' experiences in sport. For example, researchers have developed and delivered interventions and education programmes to support youth sport parents (Thrower et al., 2018), and there is evidence to suggest that these interventions have helped to increase positive outcomes among youth athletes, including improved parent-athlete relationships, parental support, enjoyment, competence, decreased stress and parental pressure (Dorsch et al., 2017), and improvements in athletes' goal involvement and cognitions related to performance tasks (Gershgoren et al., 2011). One example of the development and testing of a parent education programme was conducted by Dorsch et al. (2017), who reported the implementation of an evidence-based education programme focusing on youth sport participation, developmental processes in youth sport, participation rates in youth sport, communication, working with coaches, sport parent behaviour, and positive sport parenting. Eighty-eight parents participated in a project to assess the impact of the parent education programme on athletes' perceptions of parental pressure and support, parent-child warmth, parent-child conflict, as well as child enjoyment, competence, and stress in sport. Parents in the study assigned to a "full intervention" group ($n = 18$) received a face-to-face seminar as well as a sport parent guide, and parents assigned to a partial intervention group ($n = 36$) received only the guide but no seminar; a third group of parents served as a control group with no intervention ($n = 27$). Findings demonstrated that children whose parents received the full intervention reported more enjoyment, higher perceptions of competence, and lower levels of stress at the end of the season compared to athletes whose parents received the partial intervention or no

intervention. Thus, there is promising evidence that interventions and education programmes targeting parents in youth sport may positively influence athlete outcomes in sport.

Although parent education programmes show promise in improving outcomes among athletes, there have been calls for research examining novel formats and delivery methods such as web-based, online interventions. The benefits of online formats for delivering educational information and interventions include the ability to disseminate information to a wider group of participants at low cost compared to in-person, face-to-face interventions, and online formats can also be completed at a time and place that is convenient for participants rather than attending sessions in-person. There is also evidence that parents may prefer self-administered formats for the delivery of educational information compared to multi-week in-person groups (Metzler et al., 2012). To date, there is limited research empirically evaluating web-based parent education programmes in sport; however, one recent exception was provided by Thrower et al. (2018) who recruited 38 parents of youth tennis players to complete an online parent education programme consisting of eight videos covering various topics (e.g., supporting children in tennis, the Lawn Tennis Association's organizational system, child and talent development, competition roles for parents of youth athletes, and social support). Parents also had access to supplementary materials they could access and download in addition to the online videos. Of the initial sample of parents who signed up to complete the programme and participate in the study, 13 parents completed the programme and survey measures, and there were statistically significant improvements in these parents' perceptions of their efficacy in interacting with other parents in youth sport (Thrower et al., 2018). Parents also reported generally positive perceptions of the online programme in terms of its content and format, although some parents suggested that parent education programs should be made compulsory to ensure parents complete the program. One limitation of Thrower et al.'s evaluation was its limited reach and the small sample of parents who complete the online videos and the survey measures; the authors suggested that "large-scale dissemination of online (and face-to-face) parent education programs is likely to be achieved only through national governing body backing or promotion to parents directly" (Thrower et al., 2018, p. 18). Furthermore, this study did not examine the impact of the programme on athlete outcomes, and it remains to be determined whether online parent education programmes targeting parents have an impact on the psychosocial experiences of youth athletes.

Although there is evidence that interventions using parent education programmes are associated with positive youth outcomes in sport, the existing parent interventions and programmes that have been evaluated to date have been implemented within sport clubs or teams in a controlled manner (e.g., led by research teams). Such work is important to demonstrate that parent education and intervention does influence youth outcomes. However, there are numerous sport organizations that implement parent programmes and interventions at an organizational level across multiple clubs or sport organizations, and there is a lack of research examining these broad initiatives. Given suggestions that policy, culture,

and community-level changes are thought to influence PYD outcomes among youth (Holt et al., 2017; Lerner et al., 2002), it is important to explore how these types of initiatives, policies, and programme implementation at the macro level may impact youth athletes' experiences and developmental outcomes in sport (Harwood et al., 2019).

One such initiative targeting parents that may serve as an example of programme implementation at the macro level is the 'Respect in Sport Parent Program' (RiSPP; Respect Group, n. d.). The RiSPP is a parent education programme that has been developed and implemented widely in sport leagues across Canada. It was developed in 2008 and initially implemented in 2010 as a preventative programme intended to provide parents with education and knowledge on a broad range of topics to contribute to a positive culture in youth sport and ultimately promote positive sport experiences among young athletes. The programme was developed by youth sport advocates with input from subject matter experts (e.g., Canadian Red Cross), sport parents, coaches, and sport psychology consultants, and it was designed to address multiple elements of children's youth sport experiences with the overall goal of helping to "create a more rewarding, safe and respectful environment for everyone involved" (<http://respectgroupinc.com/respect-in-sport/#parent-program>). In its original form and implementation, the programme was not theoretically or empirically derived to focus on one single aspect of youth sport development; rather, the programme has a broad focus on multiple topics relevant to youth sport, including: setting realistic expectations, handling winning and losing, balance not burnout, concussion and injury management, misplaced enthusiasm, establishing positive relationships with all sport stakeholders, losing perspective, and ensuring safe environments through better understanding of bullying, abuse, harassment and discrimination.¹ The programme takes approximately 1 hour to complete a series of online video modules, and it also contains supplementary downloadable/printable materials available to parents or guardians of youth athletes to access at any time.

The RiSPP has been adopted in numerous youth sport leagues across Canada, and implementation of the RiSPP serves as an example of a policy initiative taken at the level of the sport organization with the assumption that it may influence the experiences and outcomes of youth athletes. In 2014, the Ontario Minor (ice) Hockey Association made the programme mandatory for all parents registering children in youth hockey; it should be noted that ice hockey is the second most popular youth sport in Canada (after soccer) with over 220,000 youth participating in the minor leagues in the province of Ontario (Hockey Canada, 2017). Thus, the widespread implementation of a parent education programme represented an opportunity to examine the impact of this type of web-based training programme on young athletes' experiences in minor hockey.

While the individual sport clubs within a broader sport organization may have varying team-level or club-level initiatives aimed at improving youth outcomes in sport, the implementation of the RiSPP in youth sport is an example of a distal, macro-level change that may influence youth athletes'

experiences (Harwood et al., 2019; Holt et al., 2017). Due to the focus of the RiSPP on a variety of topics related to youth experiences and outcomes, and its emphasis on creating safe environments and reducing negative behaviours in sport, we sought to examine whether this type of distal macro-level initiative may influence athletes' experiences at the individual level. Currently, there is little available research on the effects of programme implementation at an organizational level on the developmental outcomes of youth athletes; the present study also aligns with recent calls for research examining parent-focused initiatives at the macro-level of youth sport systems (Harwood et al., 2019) and arguments that mandatory parent education programmes are an important and necessary step towards improving the positive developmental experiences of youth athletes (Christofferson & Strand, 2016). Furthermore, to date, there has been no systematic, empirical evaluation of the impact of the Respect in Sport Parent Program in terms of its association with various developmental outcomes and experiences among youth athletes. Therefore, the purpose of this study was to evaluate the impact of the Respect in Sport Parent Program on psychosocial outcomes among minor hockey athletes over the course of three years.

Methods

A prospective longitudinal design was employed to measure athlete outcomes over a three-year period. We sampled athletes from minor hockey in Canada between 2014 and 2017. In 2014, the Ontario Minor Hockey Association (OMHA) introduced a requirement that at least one parent complete the Respect in Sport Parent Program. However, some hockey leagues within the OMHA had adopted the programme on a voluntary basis prior to 2014, while other leagues did not adopt the programme during the course of the study. For comparative purposes, athletes were recruited from minor hockey leagues that had implemented the RiSPP education programme as well as leagues that had not implemented the programme.

The study was approved by the Research Ethics Board at the first author's institution. Information about the study was sent to league administrators to distribute to parents and athletes within their organization; athletes were invited to complete an online survey at three time points during each hockey season (November, January, and April; these were selected to capture the athletes' experiences at the beginning, middle, and at the end of each season) between 2014 and 2017 (9 data collection points in total). We aimed to collect assessments at the beginning, mid-point, and end of a competitive season in sport research, as these points reflected times in-season when athletes are involved in their sport and would be able to report on their sport experiences (e.g., we wanted to ask athletes to report on their perceptions about their sport environment when they were enrolled in sport and not during the off-season). These time points were also selected because they would enable the researchers to examine the athletes' experiences soon after their parents had taken the RiSPP (e.g., at the start of the competitive season), and to examine whether athletes' experiences changed over the course of the season and

¹The authors were not involved in the development or implementation or the content/focus of the parent education program.

across each year of the study (e.g., investigating whether athletes' experiences decreased or increased over the course of the season; these changes might reflect a strengthening or weakening of the effects of the program on parents' behaviours and subsequent impacts on athletes' experiences).

We chose to measure the athletes' outcomes starting in 2014 because that was the first year that the program was mandatory in the OMHA; thus, we felt this would provide an opportunity to observe and longitudinally monitor possible changes in athlete outcomes over time following the implementation of the programme. Participants were entered in a draw for a gift card for a sporting goods store for completing a survey at each time point. In total, 366 athletes completed the survey at least once during the three-year study period (84.2% males; 14–19 years of age; $M_{\text{age}} = 15.4$ years; 89.9% White/Caucasian, 2.5% Indigenous/First Nation, 1.9% South Asian, 5.7% other ethnicity). Eighty-three athletes also completed multiple surveys for longitudinal analyses (2 surveys = 57 athletes, 3 surveys = 14 athletes, 4 surveys = 6 athletes, 5 surveys = 3 athletes, 6 surveys = 2 athletes, 8 surveys = 1 athlete). The sample of athletes included for longitudinal analyses was 80.7% males; $M_{\text{age}} = 15.6$ years (89.2% White/Caucasian, 6% South Asian; 2.4% Chinese, 1.2% Japanese, 1.2% Indigenous/First Nation). Athletes had 1 to 8+ years of experience playing organized hockey ($M = 6.5$ years). Athletes were not selected based on certain characteristics and there were no differences in the athletes' scores on the survey measures when comparing those who completed the survey once vs. those who completed multiple surveys.

To assess interpersonal interactions between athletes, participants completed 20 items reflecting prosocial behaviours towards teammates (four items; e.g., "gave positive feedback to a teammates") and opponents (three items; e.g., "helped an injured opponent"), as well as antisocial behaviours towards teammates (five items; e.g., "verbally abused a teammate") and towards opponents (eight items; e.g., "physically intimidated an opponent") (Bruner et al., 2014; Kavussanu & Boardley, 2009). Items were rated on a scale of 1 (never) to 5 (very often). The scale has been found to have strong factorial validity and internal consistency, with Cronbach alphas ranging from 0.75 to 0.89 (Bruner et al., 2014), and researchers have reported further evidence for the construct validity and reliability of the measure with youth athletes ranging from 12 to 64 years of age (Kavussanu & Boardley, 2009).

To assess athletes' perceptions of parental influence in sport, participants completed the Parental Involvement in Activities Scale (PIAS) (Anderson et al., 2003), a 16-item measure of parental support (6 items, e.g., "My parent/guardian cares about all of my activities") and pressure (10 items, e.g., "My parent/guardian gets upset when I don't do as well as they would like me to in my activities".) Items were rated on a scale of 1 (never) to 4 (always). The scale has been found to have acceptable internal consistency, with Cronbach alphas ranging from 0.70 to 0.78 (Tamminen et al., 2016; Anderson et al., 2003). Athletes also completed a general measure of sport enjoyment (four items, e.g., "Do you have fun playing in this program this season?") and commitment (four items, e.g., "How dedicated are you to playing with this team?"). Items were rated on a scale of 1 (not at all) to 5 (very much). Items for the subscales were

identified by principle component factor analysis with acceptable factor loadings (Anderson et al., 2003) and the measure has been found to have acceptable internal consistency, with Cronbach alphas ranging from 0.83 to 0.94 (Tamminen et al., 2016).

To measure perceived positive and negative developmental experiences in sport, athletes completed the Youth Experiences Survey for Sport (YES-S) (MacDonald et al., 2012; Sullivan et al., 2015) in years two and three of the study. Items are rated on a scale of 1 (yes, definitely) to 4 (not at all) and assessed the extent to which athletes perceived that their sport has provided opportunities for development of personal and social skills (e.g., "I learned how my emotions and attitude affect others in the group"), cognitive skills (e.g., "I have improved skills for finding information"), goal setting (e.g., "I learned to find ways to achieve my goals"), initiative (e.g., "I learned to push myself"), and negative experiences (e.g., "adult leaders in this activity are controlling and manipulative"). Lower scores on the YES-S subscales indicate athletes' greater agreement with the items on the subscales (e.g., low mean scores on the personal and social skills, goal setting, initiative, and cognitive skills subscales indicate athletes' greater endorsement of these items; a higher mean score for the negative experiences indicates that athletes disagree that they had negative experiences in sport). The scale has been found to have acceptable internal consistency, with Cronbach alphas ranging from 0.80 to 0.94; confirmatory factor analysis of the shortened scale also demonstrated support for the original factor structure and gender invariance among youth athletes (Sullivan et al., 2015).

Statistical analyses were conducted using SPSS and HLM (IBM Corp, 2016; Raudenbush et al., 2011). To examine responses among athletes who completed one survey only during the study, we conducted a series of ANOVAs to compare athlete outcomes as a function of programme implementation year. Each athlete's program status was coded according to the year that their league implemented the Respect in Sport Parent Program (0 = not implemented; 1 = implemented between 2015–2017; 2 = 2013–2014; 3 = 2010–2012); thus, athletes in leagues that implemented the programme between 2010 and 2012 had the programme the longest (therefore assigned the highest value of 3), while athletes in leagues that had implemented the programme most recently were assigned a lower value of 1. Athletes in leagues that had not implemented the programme were assigned a value of 0. There were no teams that implemented the programme before 2010, as this was the first year the program was developed/delivered.

To examine longitudinal changes in athletes' experiences we used the statistical program HLM (hierarchical linear modelling) to conduct a series of multilevel models for each study variable.^a Using multilevel models is advantageous for analysing repeated measures data because this approach uses all available data on each participant, each participant does not require the same number of measurements, and multilevel models can handle missing data more appropriately than traditional repeated measures analyses (e.g., RM ANOVA) (Gueorguieva & Krystal, 2004; Hox, 2010; Huta, 2014). Intraclass correlations (ICCs) were calculated for each dependent variable to determine the amount of variance attributable to intrapersonal and interpersonal factors (see Supplementary File for ICCs). For each study variable, Model

1 was the unconditional means model; Model 2 was a growth curve model with Time (months since start of study) as a predictor at level 1; Model 3 included programme implementation status as a time-varying covariate at level 1 (coded according to the year that their league implemented the Respect in Sport Parent Program: 0 = no programme; 1 = implemented between 2015–2017; 2 = 2013–2014, 3 = 2010–2012; and Model 4 included programme status at level 2 (0 = program was not implemented at any point during the study; 1 = program was implemented during the study). This coding was added at level 2 because we considered that some leagues may have implemented the programme due to an identified need to address poorer outcomes among athletes within their league; thus, athletes in these leagues may demonstrate poorer scores the first time they completed the surveys. Conversely, some leagues may have implemented the programme because it aligns with their values, and athletes in these organizations may demonstrate higher scores on the study variables the first time they completed the surveys. Thus, we included programme status at level 2 to determine whether there may be some differences in outcome variables at the first time the athletes completed the survey based on their league's implementation of the programme later in the study. In the results, the full models are reported with variables entered at level 1 and level 2.

Results

Means and standard deviations for study variables (cross-sectional analyses) are reported in Table 1. Means and standard deviations for the study variables at each time point for the longitudinal analyses are reported in the Supplementary File. See Tables 2, 3, and 4 for multilevel results.

For the athletes who only completed the survey at a single time point during the study, we first determined that there were no significant differences in the ages of athletes completing the surveys at the different data collection points, $F(8, 357) = 0.68, p = .71$. We then conducted a series of ANOVAs to examine whether there were any differences in the study variables depending on when their league implemented the RiSPP. The ANOVA for prosocial behaviours towards teammates was statistically significant, $F(3, 328) = 2.68, p < .05, \eta^2 = .02$. Post-hoc tests indicated that athletes in leagues which implemented the RiSPP before 2012 had higher average scores for prosocial behaviours towards teammates ($M = 4.51, SD = .56$) at the time of data collection compared to athletes in leagues which adopted the program in 2013–2014 ($M = 4.27, SD = 0.66$), $t(328) = -2.35$; however, these differences were only marginally significant, Tukey's $p = 0.08$ (see Supplementary File for descriptive information and figures).

The ICCs for the study variables ranged from 41% to 67%, indicating that variability in athletes' experiences was due to interpersonal and intrapersonal variation between athletes (see Supplementary File for ICCs).

Personal and social skills

The findings suggest that on average, participants' perceptions that hockey offered them opportunities to improve personal and social skills did not significantly change during the study

Table 1. Mean Scores and Standard Deviations for Study Variables: Cross-Sectional Analyses.

Variable	Group	<i>M</i>	<i>SD</i>
Prosocial Behaviours – Teammates	No RiSPP	4.43	0.62
	RiSPP 2015–2017	4.47	0.63
	RiSPP 2013–2014	4.27	0.66
	RiSPP 2010–2012	4.51	0.56
Prosocial Behaviours – Opponents	No RiSPP	2.25	1.11
	RiSPP 2015–2017	2.09	1.09
	RiSPP 2013–2014	2.27	1.26
	RiSPP 2010–2012	2.42	1.21
Antisocial Behaviours – Teammates	No RiSPP	1.96	0.85
	RiSPP 2015–2017	1.91	0.83
	RiSPP 2013–2014	1.90	0.89
	RiSPP 2010–2012	1.71	0.75
Antisocial Behaviours – Opponents	No RiSPP	1.95	1.00
	RiSPP 2015–2017	2.13	0.92
	RiSPP 2013–2014	2.08	1.03
	RiSPP 2010–2012	1.78	0.72
Parent Pressure	No RiSPP	1.75	0.46
	RiSPP 2015–2017	1.78	0.46
	RiSPP 2013–2014	1.73	0.45
	RiSPP 2010–2012	1.61	0.39
Parent Support	No RiSPP	3.60	0.42
	RiSPP 2015–2017	3.57	0.47
	RiSPP 2013–2014	3.70	0.36
	RiSPP 2010–2012	3.72	0.33
Athlete Enjoyment	No RiSPP	4.41	0.78
	RiSPP 2015–2017	4.43	0.72
	RiSPP 2013–2014	4.23	1.00
	RiSPP 2010–2012	4.34	0.93
Athlete Commitment	No RiSPP	4.38	0.70
	RiSPP 2015–2017	4.13	1.07
	RiSPP 2013–2014	4.13	0.91
	RiSPP 2010–2012	4.23	0.90
Personal and Social Skills	No RiSPP	1.44	0.56
	RiSPP 2015–2017	1.51	0.56
	RiSPP 2013–2014	1.66	0.64
	RiSPP 2010–2012	1.54	0.53
Cognitive Skills	No RiSPP	2.30	0.92
	RiSPP 2015–2017	2.42	0.80
	RiSPP 2013–2014	2.31	0.85
	RiSPP 2010–2012	2.16	0.83
Goal Setting	No RiSPP	1.61	0.68
	RiSPP 2015–2017	1.78	0.71
	RiSPP 2013–2014	1.77	0.71
	RiSPP 2010–2012	1.53	0.54
Initiative	No RiSPP	1.37	0.58
	RiSPP 2015–2017	1.41	0.49
	RiSPP 2013–2014	1.44	0.66
	RiSPP 2010–2012	1.27	0.43
Negative Experiences	No RiSPP	3.46	0.50
	RiSPP 2015–2017	3.28	0.69
	RiSPP 2013–2014	3.47	0.62
	RiSPP 2010–2012	3.64	0.51

Note: The YES-S is rated on a scale of 1 = yes, definitely to 4 = no, not at all; lower scores on the YES-S subscales indicates athletes' greater agreement with the items on the subscales (e.g., low mean scores on the personal and social skills, goal setting, initiative, and cognitive skills subscales indicate athletes' greater endorsement of these items; a higher mean score for the negative experiences indicates that athletes disagree that they had negative experiences in sport).

($\beta_{20} = -.04, p = .25$) after controlling for programme implementation. There was a nonsignificant trend regarding the effect for intrapersonal programme status ($\beta_{10} = -.12, p = .065$), indicating that on average when athletes were in a league which implemented the programme between 2010 and 2017, they reported some improvements in perceptions that hockey provided opportunities to improve their personal and social skills. Time and intrapersonal programme status accounted for 18% of the variance at level 1 in personal and social skills. Programme status at level 2 explained significant interpersonal

Table 2. Multilevel coefficients for YES subscale variables.

	Parameter	Personal and Social Skills	Negative Experiences	Cognitive Skills	Goal Setting	Initiative
Fixed Effects	β_{00}	Coefficient (SE) 1.15 (0.14)***	Coefficient (SE) 3.56 (0.15)***	Coefficient (SE) 2.02 (0.27)***	Coefficient (SE) 1.19 (0.15)***	Coefficient (SE) 0.89 (0.10)***
	β_{01}	0.48 (0.08)***	0.33 (0.32)	-0.08 (0.25)	0.29 (0.21)	0.14 (0.11)
	β_{10}	-0.12 (0.07)†	-0.40 (0.31)	0.11 (0.11)	-0.02 (0.18)	0.08 (0.11)
	β_{20}	-0.04 (0.03)	0.01 (0.03)	-0.06 (0.04)†	-0.07 (0.03)*	-0.07 (0.03)**
		Coefficient (SD)	Coefficient (SD)	Coefficient (SD)	Coefficient (SD)	Coefficient (SD)
Variance Components	e_{ij}	0.15 (0.39)	0.13 (0.36)	0.36 (0.60)	0.13 (0.37)	0.08 (0.30)
	r_{0i}	0.10 (0.32)	0.01 (0.01)	0.31 (0.55)	0.02 (0.16)	0.00 (0.01)
	r_{1i}	0.12 (0.35)	0.33 (0.57)	0.01 (0.12)	0.02 (0.14)	0.01 (0.11)
	r_{2i}	0.02 (0.13)	0.13 (0.07)	0.00 (0.03)	0.00 (0.05)	0.00 (0.08)

β_{00} = the average score on the dependent variable for athletes in leagues which did not implement the program at time one controlling for all other variables in the model; β_{01} = the effect of interpersonal program status or the differential in the average score of the dependent variable at time one between athletes in leagues that implemented the program during the study and athletes in leagues that did not implement the program during the study, controlling for all other variables in the model; β_{10} = the effect of intrapersonal league status, or, the differential in the dependent variable between program implementation status controlling for all other variables in the model; β_{20} = the average change rate of the dependent variable after controlling for all other variables in the model; r_{0i} = the deviation across athletes at time one controlling for all other variables in the model; r_{1i} = the deviation across athletes in linear growth rate after controlling for all other variables in the model; r_{2i} = the deviation across athletes in quadratic growth rate after controlling for all other variables in the model. * $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .10$.

Table 3. Multilevel coefficients for enjoyment, commitment, parental pressure, and parental support.

	Parameter	Enjoyment	Commitment	Parental Pressure	Parental Support
Fixed Effects	β_{00}	Coefficient (SE) 4.59 (0.18)***	Coefficient (SE) 4.29 (0.21)***	Coefficient (SE) 1.81 (0.12)***	Coefficient (SE) 3.70 (0.08)***
	β_{01}	-0.09 (0.27)	-0.33 (0.32)	-0.25 (0.18)	0.08 (0.10)
	β_{10}	-0.22 (0.24)	0.19 (0.27)	0.21 (0.14)	-0.07 (0.08)
	β_{20}	0.04 (0.04)	0.04 (0.03)	-0.001 (0.01)	0.02 (0.01)
		Coefficient (SD)	Coefficient (SD)	Coefficient (SD)	Coefficient (SD)
Variance Components	e_{ij}	0.46 (0.68)	0.47 (0.68)	0.05 (0.23)	0.05 (0.23)
	r_{0i}	0.27 (0.51)	0.64 (0.80)	0.11 (0.33)	0.01 (0.12)
	r_{1i}	0.21 (0.46)	0.02 (0.15)	0.35 (0.59)	0.06 (0.24)
	r_{2i}	0.03 (0.18)†	0.01 (0.12)	0.01 (0.05)	0.00 (0.07)

β_{00} = the average score on the dependent variable for athletes in leagues which did not implement the program at time one controlling for all other variables in the model; β_{01} = the effect of interpersonal program status or the differential in the average score of the dependent variable at time one between athletes in leagues that implemented the program during the study and athletes in leagues that did not implement the program during the study, controlling for all other variables in the model; β_{10} = the effect of intrapersonal league status, or, the differential in the dependent variable between program implementation status controlling for all other variables in the model; β_{20} = the average change rate of the dependent variable after controlling for all other variables in the model; r_{0i} = the deviation across athletes at time one controlling for all other variables in the model; r_{1i} = the deviation across athletes in linear growth rate after controlling for all other variables in the model; r_{2i} = the deviation across athletes in quadratic growth rate after controlling for all other variables in the model. * $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .10$.

Table 4. Multilevel coefficients for prosocial and antisocial behaviours towards teammates and opponents.

	Parameter	Antisocial – Opponents	Antisocial – Teammates	Prosocial – Teammates	Prosocial – Opponents
Fixed Effects	β_{00}	Coefficient (SE) 1.63 (0.17)***	Coefficient (SE) 1.76 (0.14)***	Coefficient (SE) 4.48 (0.13)***	Coefficient (SE) 2.18 (0.25)***
	β_{01}	0.55 (0.26)*	0.12 (0.31)	-0.33 (0.21)	-0.40 (0.33)
	β_{10}	-0.37 (0.18)*	0.04 (0.29)	0.24 (0.18)	0.28 (0.24)
	β_{20}	-0.07 (0.02)**	-0.03 (0.02)	0.02 (0.02)	-0.02 (0.03)
		Coefficient (SD)	Coefficient (SD)	Coefficient (SD)	Coefficient (SD)
Variance Components	e_{ij}	0.23 (0.49)	0.26 (0.51)	0.22 (0.46)	0.51 (0.71)
	r_{0i}	0.60 (0.77)***	0.25 (0.50)*	0.09 (0.29)	0.46 (0.68)
	r_{1i}	0.09 (0.30)	0.71 (0.84)*	0.23 (0.48)	0.03 (0.18)
	r_{2i}	0.01 (0.07)	0.01 (0.08)*	0.01 (0.04)	0.00 (0.02)

β_{00} = the average score on the dependent variable for athletes in leagues which did not implement the program at time one controlling for all other variables in the model; β_{01} = the effect of interpersonal program status or the differential in the average score of the dependent variable at time one between athletes in leagues that implemented the program during the study and athletes in leagues that did not implement the program during the study, controlling for all other variables in the model; β_{10} = the effect of intrapersonal league status, or, the differential in the dependent variable between program implementation status controlling for all other variables in the model; β_{20} = the average change rate of the dependent variable after controlling for all other variables in the model; r_{0i} = the deviation across athletes at time one controlling for all other variables in the model; r_{1i} = the deviation across athletes in linear growth rate after controlling for all other variables in the model; r_{2i} = the deviation across athletes in quadratic growth rate after controlling for all other variables in the model. * $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .10$.

variance in athletes' personal and social skills scores at their first point of survey completion after controlling for intrapersonal programme status ($\beta_{01} = .48, p < .001$), indicating that athletes in leagues which implemented the programme reported fewer opportunities to develop personal and social skills at the first point of survey completion, compared to athletes in leagues that did not have the program.

Goal setting

Participants' perceptions of opportunities for goal setting in hockey significantly improved during the study ($\beta_{20} = -.07, p = .02$) after controlling for programme status. The effect for intrapersonal programme status was not significant ($\beta_{10} = -0.02, p = .91$), which indicated that on average there were no significant changes in

athletes' perceptions of goal setting opportunities when athletes were in a league which implemented the programme. Time and intrapersonal programme status accounted for 16% of the variance in goal setting at level 1.

Initiative

Participants' perceptions that they had opportunities to develop initiative in hockey significantly improved across the study ($\beta_{20} = -.07, p = .01$) after controlling for programme status. The effect for intrapersonal programme status was also not significant ($\beta_{10} = .08, p = .45$), which indicated that on average there was no change in athletes' reports of opportunities for initiative when they were in a league which implemented the programme. Time and intrapersonal programme status accounted for 19% of the variance in initiative at level 1.

Cognitive skills

There was a nonsignificant trend whereby participants reported some improvements in opportunities to develop cognitive skills during the study ($\beta_{20} = -.06, p = .10$). Time and intrapersonal programme status accounted for 3% of the variance in cognitive skills at level 1.

Negative experiences

Participants' perceptions of negative experiences in hockey did not significantly change during the study ($\beta_{20} = .005, p = .85$) after controlling for programme status. The effect for intrapersonal programme status was not significant ($\beta_{10} = -.40, p = .19$), which indicated that on average there were no significant changes in athletes' perceived negative experiences when athletes were in a league which implemented the programme. Time and intrapersonal programme status did not account for any additional variance at level 1 in perceived negative experiences.

Antisocial behaviours towards teammates and opponents

On average, participants reported that antisocial behaviours towards opponents significantly decreased during the study ($\beta_{20} = -.07, p = .003$) after controlling for programme status, although there were no significant changes in antisocial behaviours towards teammates ($\beta_{20} = -.03, p = .15$). The effect for programme status on antisocial behaviours towards opponents was significant ($\beta_{10} = -.37, p = .047$), which indicated that on average athletes reported engaging in fewer antisocial behaviours towards opponents when athletes were in a league which implemented the programme. Intrapersonal program status was not significant for antisocial behaviours towards teammates ($\beta_{10} = .04, p = .89$). Time and intrapersonal programme status accounted for 20% and 14% of the variance at level 1 in antisocial behaviours towards opponents and towards teammates, respectively. Programme status at level 2 significantly predicted differences in athletes' antisocial behaviours towards opponents at their first point of survey completion after controlling for intrapersonal programme status ($\beta_{01} = .55, p = .037$), with athletes in leagues that implemented

the programme reporting higher antisocial behaviours towards opponents at their first point of survey completion. This effect explained an additional 3% of variance at level 2. For antisocial behaviours towards teammates, programme status at level 2 did not significantly predict differences in athletes' antisocial behaviours towards teammates at their first point of survey completion after controlling for intrapersonal programme status ($\beta_{01} = .12, p = .70$).

Prosocial behaviours towards teammates and opponents

Participants' prosocial behaviours towards teammates ($\beta_{20} = .02, p = .26$) and towards opponents ($\beta_{20} = -.03, p = .23$) did not change significantly during the study after controlling for programme status. The effect for intrapersonal programme status was not significant for prosocial behaviours towards teammates ($\beta_{10} = .24, p = .19$) or opponents ($\beta_{10} = .08, p = .69$). Programme status at level 2 did not significantly predict differences in athletes' prosocial behaviours towards teammates at their first point of survey completion after controlling for intrapersonal programme status ($\beta_{01} = -.33, p = .11$).

Parental support and pressure

Perceptions of parental support ($\beta_{20} = .02, p = .19$) and pressure ($\beta_{20} = -.001, p = .91$) did not change significantly during the study after controlling for programme status. The effect for intrapersonal programme status was not significant for support ($\beta_{10} = -.07, p = .38$) or for pressure ($\beta_{10} = .20, p = .15$), indicating that on average athletes did not report any changes in perceptions of parental support or pressure when athletes were in a league which implemented the programme.

Enjoyment and commitment

Participants' enjoyment ($\beta_{20} = .04, p = .26$) and commitment ($\beta_{20} = .04, p = .19$) did not change significantly during the study after controlling for programme status. The effect for intrapersonal programme status was not significant for enjoyment ($\beta_{10} = -.22, p = .38$) or for commitment ($\beta_{10} = .19, p = .48$), indicating that on average athletes did not report any changes in enjoyment or commitment when athletes were in a league which implemented the programme. Programme status at level 2 did not significantly predict differences in athletes' enjoyment ($\beta_{01} = -.09, p = .74$) or commitment ($\beta_{01} = -.33, p = .31$) at their first point of survey completion after controlling for intrapersonal programme status.

Discussion

This study presents findings regarding the association between a web-based educational programme for youth sport parents on the psychosocial experiences of youth athletes over the course of three years. Results of ANOVA analyses indicated differences in prosocial behaviours towards teammates between athletes in leagues which had implemented the programme at different time points. Post-hoc tests were marginally significant; however, the results suggest that athletes in leagues which had implemented the RISPP prior to 2012 reported more prosocial behaviours towards teammates compared to

athletes in leagues which had implemented the programme more recently (2013–2014). Results of multilevel models indicated that reported antisocial behaviours towards opponents improved over time, and these were associated with programme implementation during the course of the study. Athletes' personal and social skills also showed trends towards improvements in association with programme implementation.

Athletes reported opportunities to develop initiative, goal setting, and cognitive skills improved as a function of time, which may reflect developmental changes in these outcomes through athletes' sport participation. This finding supports the idea that youth athletes can develop some positive outcomes implicitly within sport settings (Holt et al., 2017). We did not assess the PYD climate of the athletes' sport teams or clubs, and therefore we were unable to determine whether the improvements in opportunities to develop these outcomes occurred as a function of supportive relationships with peers, leaders and coaches, and parents. However, the findings in the present study lend some support to the idea that sport participation was associated with improvements in some developmental outcomes for youth athletes, regardless of the implementation of the RiSPP at the organizational level. However, the findings also demonstrate that the implementation of the RiSPP was associated with improvements in other aspects of athletes' psychosocial experiences in sport, namely prosocial behaviours towards opponents and in athletes' development of personal and social skills.

Based on these findings it appears that the delivery of information about youth sport via a web-based educational parent programme at an organizational level was positively associated with some athlete outcomes in minor hockey. The outcomes that appeared to be associated with the programme implementation reflect interpersonal experiences, which are topics that are addressed in the RiSPP (e.g., bullying, abuse, discrimination, and emotions). Overall, athletes' scores were generally quite positive (e.g., low perceived parental pressure and negative experiences, high parental support, enjoyment, commitment) and there were no statistically significant differences in most study variables. Thus, for several of the study variables, it did not appear that athletes in leagues that implemented the RiSPP reported significantly better experiences than athletes in leagues that did not implement the programme. However, we do not know whether other leagues had alternative parent or athlete programming in place that may have also led to similar outcomes. Future research examining the relative benefits and impacts of various types of parent and athlete programmes would be useful (e.g., examining parent education programmes compared to parent 'behaviour contracts'; examining parent vs. athlete interventions).

One possible reason for the small effects of programme implementation on youth outcomes could be due to the mandatory nature of the programme: parents had to complete the programme before enrolling their child in hockey. Thus, the extent to which parents engaged in the material may have been limited if they were not completing the programme voluntarily. Another possible reason for the small effects on youth outcomes could be due to the broad scope of the programme content and the online delivery format – the programme consists of a single web-based session that is completed by one parent prior to registering their child in sport, and the programme covers a range of topics. In

terms of deciding what to focus on for delivering information to parents in youth sport settings, some programmes may focus on specific aspects of youth development and participation (e.g., Dorsch et al., 2017) or parent communication practices (e.g., Azimi & Tamminen, 2020), while programs such as the RiSPP adopt a broad focus and deliver information on a number of topics for youth sport parents. It is unknown whether parents and athletes may benefit from receiving more information on some topics than others, or how the information delivered in the programme is communicated from parents to athletes. Efforts may also be needed to help educate parents on how to translate the information from the programme into changes that would positively impact athletes' experiences in youth sport. Additionally, the development of online parent education programmes that use multiple 'booster' sessions or that provide information spread out over multiple sessions may also help to strengthen the impact that these types of programmes may have on youth outcomes, although participant retention and program completion may be challenging with web-based multi-session parent education programmes (Thrower et al., 2018). Finally, leagues may vary greatly in the extent to which they reinforced the messages in the programme or conduct follow-up sessions. There may be considerable variation in the implementation of the RiSPP across leagues, which may lead to better or poorer outcomes among athletes depending on the way the programme is implemented and reinforced. There is no research to date that has examined the extent to which programme implementation fidelity and messaging about the programme is associated with differences in athlete outcomes, and this would be a valuable area for future research. Furthermore, it would be useful to examine whether the delivery of parent education programmes can be improved by individualizing and tailoring programs to organizations, sports, developmental and competitive levels, as well as exploring opportunities for group parent education programmes (cf. Steiner et al., 2012) and activities to engage parents in reflective practice about parent education programme topics (cf. Azimi & Tamminen, 2020).

While the current findings provide support for the implementation of a programme at the macro/organizational level targeting youth sport parents, little is known about the mechanisms by which these policy or organizational-level changes influence athlete outcomes. Harwood et al. (2019) recently noted that very little is known "about how sport parents can facilitate psychosocial development as part of the youth sport experience" (p. 69). There are two theoretical issues worth considering here. First, at the interpersonal level between parents and athletes, it is important to understand how parents communicate messages to youth athletes that are likely to promote positive developmental outcomes. To understand whether and how information delivered to parents in educational programmes is communicated to athletes, researchers may draw on models of parent–child interactions and socialization that describe processes of affective expression, responsiveness, the communication of values between parents and children (Caughlin et al., 2011). The original development of the RiSPP program did not specifically contain content on parent-athlete communication; this may be one area to provide additional guidance for parents to enhance the transfer of messages from parents to athletes. Including this information and evaluating its impact would

help shed light on how parents actually communicate and translate information and values to athletes and whether particular types or patterns of communication and interactions are associated with the promotion of developmental outcomes among youth athletes.

A second theoretical issue to consider when examining the implementation of parent education programmes is whether such programmes clearly integrate behaviour change strategies to provide parents with practical strategies to apply their knowledge in interactions with athletes, coaches, other parents, and sport administrators. To date, it is not clear whether any parent education programming in youth sport has intentionally implemented behaviour change strategies with parents to promote positive developmental outcomes among youth athletes. Parent education programmes alone will not likely be sufficient for the promotion of positive developmental outcomes among athletes without the integration of strategies for behaviour change. Using theoretical models of behaviour change would be helpful in advancing this area of research. For example, Michie et al.'s (2011) behaviour change wheel describes a number of approaches to change individuals' behaviours, such as education, environmental restructuring, incentivisation, implementing guidelines, and creating regulations that target individuals' capability, opportunity, and motivation for engaging in particular behaviours. Taken together, these theoretical considerations will be useful to inform the development and implementation of interventions delivered within sport organizations that target parents with the ultimate aim of influencing athlete outcomes.

We noted that athletes in leagues which implemented the programme during the study reported poorer scores for anti-social behaviours towards opponents and poorer personal and social skills at the first point that they completed the surveys, compared to athletes in leagues that did not adopt the programme. Furthermore, there was no indication that athletes in leagues that implemented the programme already had higher scores in the dependent variables at the first time they completed the surveys. In considering these findings, it is possible that league administrators may have implemented the programme in an effort to address the potentially negative experiences that some youth may encounter in their sport participation. That is, league administrators may have implemented the RiSPP in response to concerns about negative psychosocial experiences among athletes in their organization, evidenced by the findings that athletes in these leagues reported poorer scores on some measures the first time they completed the survey. However, the perspectives and motivations of administrators for implementing such programmes have yet to be empirically investigated, although it is possible that league administrators may have taken action to implement the programme due to concerns about athletes' experiences. One possible avenue for future research is to examine whether parent education programmes can be implemented in a manner that targets the athletes and families who may stand to benefit the most from these interventions.

There are some limitations to this study that warrant consideration. While we had a large sample of athletes in the study, only a small sample of athletes completed multiple surveys for longitudinal analyses. As the RiSPP has been adopted in other sport organizations, it would be valuable to replicate this study

with a larger sample of athletes in multiple sports. Our research design also precluded us from establishing baseline scores for the athlete outcomes prior to programme implementation; however, in an attempt to compensate for this limitation in our research design, we included athletes who were in leagues that did not implement the programme as a comparison group. Additionally, the use of a longitudinal design over three years and analysis of the data using multilevel modelling was employed to examine the trajectories of athletes' experiences over time; our assumption here was that if the athletes' experiences were not affected by the programme, there would not have been any changes between athletes in leagues that implemented the programme and those that did not implement the programme. Indeed, our findings suggest that some aspects of athletes' experiences in sport did change over time, regardless of whether their league implemented the programme. However, other aspects of athletes' sport experiences showed changes among those athletes who were in leagues that implemented the programme compared to athletes in leagues without the programme. Nonetheless, the lack of a baseline or measure of athletes' experiences prior to the implementation of the RiSPP is a limitation of this study. Therefore, a more robust design would ideally survey athletes' experiences prior to implementing the programme, and then survey them again after implementing the programme. A final limitation is that the present analysis did not include evaluations of changes in parents' behaviours as a result of taking the RiSPP; further research is needed to examine whether there are any changes in parent behaviours and how these changes may impact athlete outcomes.

Examining other indicators of athlete experiences would also be helpful for examining the impact of a parent education programme in youth sport (e.g., tracking penalties in minor hockey to monitor athlete aggressive behaviours during competitions, or monitoring complaints to sport organizations about coach, parent, and spectator behaviours, etc.). There may also be floor and ceiling effects occurring within the data, as the mean scores for several of the study outcomes were already quite high for positive outcomes and low for negative outcomes. These scores reflect a youth sport environment that is already perceived to be quite positive, and it may also explain why there were no changes in the other study variables. We also did not evaluate parents' level of engagement with the programme information or whether the programme influenced their perceptions, attitudes, or knowledge; future research is, therefore, necessary to examine whether parental engagement in the programme influences athlete outcomes.

Conclusion

The findings of this study demonstrate some modest overall improvements in athletes' experiences over time (e.g., initiative, goal setting, and cognitive skills), and athletes in leagues that implemented the RiSPP reported statistically significant improvements in antisocial behaviours towards opponents. These findings add to the literature on parent education programmes in youth sport by longitudinally examining the association between a large-scale parent programme and outcomes among minor hockey athletes. The present study adds to a growing body of research regarding the effects of web-

based parent education modules in youth sport and these findings help to provide information regarding the association between these programmes and their impact on athlete outcomes. These findings and their implications may help inform the delivery and evaluation of such programmes in the future. Practically, administrators within youth sport organizations should take into account that the effects of programmes implemented at a macro level (e.g., education targeting parents) may take time to impact athletes' experiences and outcomes; therefore, program implementation should be considered on a multi-year scale. Additionally, parent education programmes alone may not be sufficient to affect changes in youth athletes' experiences, and changes to the culture of youth hockey may take time to demonstrate appreciable differences among athletes themselves. Sport administrations should also consider strategies to reinforce messages delivered through parent education programmes (e.g., booster sessions during the season or over multiple seasons, messaging campaigns, behaviour change techniques) to promote positive developmental outcomes among youth athletes.

Endnotes:

- (a) The full model was estimated using the following equation:

Level-1 Model

$$DEPENDENTVARIABLE_{ti} = \pi_{0i} + \pi_{1i} * (RIS_IMPL_{ti}) + \pi_{2i} * (TIME1_{ti}) + e_{ti}$$

Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01} * (RIS_YN_DCi) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + r_{1i}$$

$$\pi_{2i} = \beta_{20} + r_{2i}$$

The subscript i represents the individual and t signifies time, and i specified that the model estimated a unique intercept and growth curve for each athlete in the study. The coefficients π_{0i} , π_{1i} , and π_{2i} in the level 1 model represent the individual's intercept, linear growth rate, and the individual's i program status at time t . The coefficient e_{ti} represents the residual of the athlete i 's dependent variable score at time t from their predicted score (level 1 variance). At level 2, β_{00} was the intercept, indicating the average score on the dependent variable for athletes in a league that did not implement the RiS program at any point during the study, controlling for all other variables in the study. The effect of program implementation was represented by the coefficient β_{01} , indicating the difference in the average score of the dependent variable at time 1 between athletes who were in leagues that implemented the program at any point during the study compared to those that did not, controlling for all other variables in the model. The coefficient β_{10} represented the differences in the dependent variable between athletes in leagues that implemented the program and athletes in leagues that did not implement the program, controlling for all other variables in the model. The coefficient β_{20} represented the average rate of change in the dependent

variable after controlling for all other variables in the model. The random effects are denoted by the coefficients r_{0i} , r_{1i} , and r_{2i} , indicating the deviation across athletes at time 1, the linear growth rate after controlling for all other variables in the model, and the quadratic growth rate after controlling for all other variables in the model.

- (b) Lower scores on the personal and social skills subscale indicate athletes' greater agreement with the statement that their sport offered them opportunities to develop personal and social skills.

Disclosure statement

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