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ORIGINAL PAPER

Understanding Parenting Behavior in Junior Rugby League in Australia

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Abstract

Parents are key actors in all aspects of children's involvement in organized sport. Further, parental behavior can have both adverse and positive effects on children's enjoyment and retention in sport. In this study we collected epidemiological information to better understand parental behavior at junior sport and to identify the family, contextual, and sporting-related factors that contribute to parental reactions at children's sporting events. Parents ($N = 1418$) of Australian Junior Rugby League players (aged 8–16 years) completed an anonymous online survey comprising questionnaire measures of parental spectator behavior and emotional reactions, parenting practices, emotional wellbeing and child behavior. Fathers ($N = 401$) were more likely than mothers ($N = 1016$) to report engaging in inappropriate spectator behavior and to have negative emotional reactions at their child's rugby league games. Fathers also identified more highly with rugby league as a sport, placed more importance on winning and had more competitive attitudes, compared to mothers. Results of hierarchical regression analyses revealed that ineffective and controlling parenting, parental emotional wellbeing, and competitive attitudes were key predictors of mothers' inappropriate spectator behavior and their negative emotional reactions. For fathers, controlling parenting, competitive attitudes, and beliefs about winning, independently predicted their spectator behavior, while their emotional wellbeing and investment in rugby league were additional independent predictors of negative emotional reactions. These findings have important implications for designing intervention strategies that maximize positive parental involvement in junior sport, including the development of sports policy and universal interventions to address disruptive and counterproductive parental behavior.

Keywords Children · Online survey · Parental involvement · Parenting · Sport · Youth

Highlights

- Fathers compared to mothers reported higher engagement in inappropriate behaviors and negative emotional reactions at their children's sporting events.
- Mothers and fathers reported similar and different sport parenting behaviors. Fathers reported more importance on winning, more competitive attitudes, and identified more highly with rugby league as a sport.
- Ineffective and controlling parenting, parental emotional wellbeing, and competitive attitudes were key predictors of mothers' inappropriate spectator behavior and their negative emotional reactions.
- For fathers, controlling parenting, competitive attitudes, and beliefs about winning, independently predicted their spectator behavior, while their emotional wellbeing and investment in rugby league were additional independent predictors of negative emotional reactions.
- These findings can inform the development of sports policy and universal interventions to address disruptive and counterproductive parental behaviors.

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Sport has the potential to contribute to the positive development of young people (e.g., Eime et al., 2013; Fraser-Thomas et al., 2008; Harwood et al., 2019). However, sustained engagement over a significant period is necessary for development to occur in and through sport (Côté et al., 2016), and in the Australian context, sport attrition is high, especially during late childhood and early adolescence (e.g., Eime et al., 2020). Importantly, adaptive development and ongoing engagement in sport depends upon the quality of adult involvement, especially from parents (Turnnidge et al., 2012; Knight et al., 2017; Kovács et al., 2022). However, research has shown that parents can both promote (e.g., Pugliese & Tinsley, 2007) and impede (e.g., Omli & Wiese-Bjornstal, 2011) children's continued participation in and enjoyment of sport. A recent systematic review of qualitative research on parental experiences in sport highlighted several higher-order themes that impact ongoing involvement, including parental investment (financial, time, and emotional), social relationships (e.g., parent-child; child-child; coach-parent), parental emotional reactions, and personal development (Sutcliffe et al., 2021). Dorsch et al. (2020) identified the need for research to move beyond the *what* of parents' behaviors and the impact of those behaviors on athlete outcomes to the *why* those behaviors occur and in doing so presented a heuristic model that embraced a youth sport system. Indeed, there has been limited research examining the determinants of sport parenting behavior. Such research is necessary to understand parental behaviors in context and can be used to inform the development of strategies to promote positive parental involvement in children's sport. Context matters (e.g., Bronfenbrenner, 2005; Dorsch et al., 2009; Dorsch et al., 2016); hence, it seems appropriate to investigate specific sport contexts if the goal is to inform policy and practice, including an evidence-based sport parenting program. Hence, the present study collected information to assess the prevalence of parental attitudes, emotional reactions, and inappropriate behavior within a specific youth team sport in Australia and explored the sociodemographic and family-contextual determinants of parental sporting behavior.

The Role of Parents and Families in Children's Involvement in Sport

As key social agents, parents shape the experiences of young people in sport. Parental behavior and beliefs influence the emotional climate and motivational context for children's enjoyment and retention in sport (Côté, 1999; Knight & Holt, 2014; Knight et al., 2017). Meta-analytic research indicates that parents facilitate their children's involvement in sport primarily through emotional support, praise, and encouragement (Pugliese & Tinsley, 2007) and that engagement influences parental outcomes in and through their sport parenting (Sutcliffe et al., 2021). Specifically, parental encouragement and beliefs in their children's sporting competence contribute to children's perceptions of their own competence, which increases their enjoyment, intrinsic motivation to participate and actual participation levels (Côté et al., 2016; Shen et al., 2018; Ullrich-French & Smith, 2009). While most parents' intentions are to support their children, parental behavior can have adverse consequences. Qualitative research has highlighted that children can be exposed to autonomy-supporting parenting approaches (i.e., two-way communication, appropriate structure, child involvement in decision-marking) and controlling parenting approaches (i.e., not supportive of child autonomy, insensitive to children's emotions, one-way communication) during interactions at sport (Holt et al., 2009). Importantly, parents who have unrealistically high expectations, criticize their children, and pressure them to win and outperform their peers are likely to undermine their children's enjoyment, internal motivation and self-belief in their own competence and increase their stress and likelihood of dropping out (e.g., Elliott & Drummond (2017); Ross et al., 2015).

Factors Contributing to Parental Behavior at Junior Sport

The wider parenting literature indicates that parental behavior is determined by a complex interplay of sociodemographic (e.g., parent age and gender, parent education), individual (e.g., mental health, self-regulation, parenting competence) and environmental factors (e.g., financial stress, child behavior, partner support; Kotchick & Forehand, 2002). Thus, a systems contextual framework is a useful lens for investigating the interdependency of the individual and the broader social context in shaping parental behavior. Sanders & Turner (2018), who used Bronfenbrenner's (2005) framework, conceptualized parental behavior as being influenced by a range of drivers of change, including immediate enablers and barriers. Sociodemographic factors, such as younger parental age, low education and living in poverty have been found to increase risk of inappropriate and harsh parenting (Klebanov et al., 1994; Pinderhughes et al., 2001). At the individual level, parental mental health has been found to compromise the capacity to parent effectively and calmly (Borre & Kliewer, 2014; Lovejoy et al., 2000). In addition, parent gender influences parent-child interactions, with evidence suggesting that fathers engage in higher levels of harsh discipline than mothers, particularly with their sons (McKee et al., 2007), but also engage in more physically active and challenging play (Schoppe-Sullivan & Fagan, 2020).

Finally, within the family environment, child disruptive and aggressive behavior (Ganiban et al. (2011); Larsson et al., 2008; Murray et al., 2013) and interparental conflict (Krishnakumar & Buehler, 2000) have been identified as increasing risk of ineffective parenting. Therefore, in understanding the why of sport parental behaviors, it is necessary to examine a range of potential determinants including sports-related beliefs and attitudes of parents, parenting practices, parental emotional wellbeing, as well as child behavior and sociodemographic factors.

While there has been extensive research examining parental behaviors in sport and the impact of these behaviors on children's sporting experience, there is only limited understanding of the determinants of sport parenting behaviors. A few researchers have discussed the role of children in shaping the socialization experiences of sport parents in the sport context (e.g., Dorsch, Smith, & McDonough, 2009). (Snyder & Purdy, 1982, Weiss & Hayashi, 1995). A few qualitative studies have explored factors influencing parental sport behavior (e.g., Harwood & Knight, 2009; Holt et al., 2009; Knight et al., 2016; McMahon & Penney, 2015). For example, a qualitative survey study with 70 sporting parents in the US and UK found that parental beliefs and expectations about their children's participation in sport were influenced by parents' personal sporting history, including their own knowledge and experience with sport and prior experience as a sporting parent; these beliefs and expectations in turn shaped their sports parenting behavior (Knight et al., 2016). Parents also acknowledged the importance of regulating their own behavior and interactions with their children around sport to prevent children having a negative experience. McMahon & Penney (2015) found that Australian swimming parents' goals and associated identities often shifted from an initial focus on enjoyment and fun towards increased importance of their children achieving successful performance goals that, in turn, shaped their parenting behavior in dealing with children's emotional responses in competitive sport (e.g., sadness for losing a race). Quantitative research on factors influencing on sports parenting behavior is particularly scarce. In a survey study of 163 parent-child dyads, Dunn et al. (2016) found that higher parental financial investment in sport activities was related to children reporting higher levels of parental pressure, which subsequently lowered their commitment to the sport. Overall, the available research supports the notion that sports parenting behavior is multifaced and likely to be influenced by both proximal, individual factors (e.g., parental beliefs and expectations, parental emotional control) and distal, contextual factors (e.g., financial investment, parental personal sporting history).

Finally, parent gender is an important factor to consider in examining sports parenting behavior. There is limited empirical understanding of potential differences sports parenting behaviors for mothers and fathers, nor of differences in factors influencing their behavior. In the public media, fathers are often over-represented in serious problematic parenting behaviors (sports parenting violence) at children's sporting events. However, it is unknown if the same factors associated with problem parenting in general apply to both mothers and fathers. Researchers in the American sport context found that fathers reported greater parent-child conflict and pressure than mothers, with higher father and children ratings of conflict and negative affect positively associated with children's perceptions of pressure (Dorsch et al., 2016). Given evidence that there are differences in some aspects of parenting based on parent gender generally (Schoppe-Sullivan & Fagan, 2020) and in relation to youth sport (Holt et al., 2009), there is a need to consider mothers' and fathers' sports parenting behavior separately. Further, previous research has shown that fathers are less represented than mothers in parenting research and intervention programs (e.g., Sanders et al., 2014). Sport has been found to be an important context for father involvement in parenting and for building father-child relationships (Harrington, 2006; Kay (2007)); thus, research in the sports context provides an opportunity to obtain father perceptions and experiences of parenting.

The Present Study

In this study, we sought to extend our understanding of parental behavior in an Australian junior team sport. Specifically, we considered the family as a microsystem, which is nested amongst more distal layers of socio-cultural influence (macrosystem) in both direct and indirect ways. Therefore, Bronfenbrenner's model of human development (Bronfenbrenner, 1986; Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006) was broadly adopted as an orienting conceptual framework for understanding the multiple interacting determinants of parental behavior (Sanders & Turner, 2018).

We conducted an anonymous online survey of parents whose children were currently enrolled in junior rugby league (JRL). The present study was designed to collect evidence to better understand parental beliefs and behavior in children's sport from both mothers' and fathers' perspectives. Importantly, the study sought to provide a comprehensive socio-contextual investigation into the sociodemographic (e.g., parental education, family income), family (i.e., child behavior), general parental (i.e., ineffective and controlling parenting, emotional wellbeing, emotional reactivity) and sports-related parental factors (i.e., competitiveness, importance of winning, investment and identification with rugby league) associated with

inappropriate parental behavior and emotional reactions of mothers and fathers in children's sport. The factors examined in this study were based on prior literature on determinants of parenting behavior specifically, and on determinants of parenting behavior in general. The overall goal of this study was to collect data to inform the development of a preventative intervention to promote positive sporting behavior in parents.

The study involved a cross-sectional online survey of parents of children aged 8–16 years participating in JRL. The study was exploratory and therefore there were no specific hypotheses. However, three research questions guided thi study: (1) What is the prevalence of inappropriate parental responses of mothers and fathers as sports parents in interactions with their children before, during, and after games?; (2) How do attitudes to rugby league and competition differ between mothers and fathers (i.e., investment, identification with rugby league community, importance of winning)?; (3) Which potentially modifiable factors, particularly ineffective parenting, parental emotional functioning and parental sporting beliefs and attitudes, are associated with inappropriate sports parenting behavior and negative emotional reactions to game day scenarios?

Method

Participants

Participants were 1418 parents of JRL players aged 8–16 years from the two major states in Australia (Queensland and New South Wales) that play rugby league. JRL acknowledged that retention was a significant issue throughout their junior pathway (defined as 8–16 years), which is consistent with the sampling and initial foray into specializing stages of sport participation in Côté et al.'s (2007) DMSP). This defined junior pathway guided the sample age range. Participants were recruited through National Rugby League (NRL) social media (e.g., Facebook) and member email lists. All advertising materials included a link to complete the survey online.

Table 1 provides an overview of the sample demographic characteristics. Parents ranged in age from 24 to 74 years ($M = 41.22$ years, $SD = 6.42$), with both mothers (72%) and fathers (28%) taking part in the study. Most parents identified their cultural background as Australian (76%), with representation from Aboriginal, Torres Strait Islander, New Zealand, and Polynesian cultural backgrounds. Most parents were in paid employment either full-time (58%) or part-time (29%), with personal annual income ranging from under $10,000 to over $100,000. Most of the sample had post-high school qualifications (70%).

Table 1 Summary of Participant Demographics

	M	*SD*	Range
Parent Age	41.22	6.42	24 to 74
Child Age	10.67	1.95	8 to 16
	N		%
Parent Gender			
Male	401		28.3%
Female	1016		71.7%
Other	1		0.1%
Child Gender			
Male	1298		91.5%
Female	114		8.0%
Cultural Background			
Australian	1081		76.2%
New Zealander (including Maori)	91		6.4%
Aboriginal and Torres Strait Islander	119		8.4%
Polynesian (Melanesian & Papuan)	50		3.5%
Other (included Northern European, South African, South American)	76		5.4%
Highest Education Level Attained			
Some high school	162		11.4%
Completed high school	270		19.0%
Undergraduate or associate degree	689		48.6%
Postgraduate degree	296		20.9%
Employment Status			
Employed full-time (30+ hours/ week)	823		58.1%
Employed part-time	412		29.1%
Student	27		1.9%
Unemployed/ Not in paid employment	154		10.9%
Personal Income			
$30,000 and under	302		29.7%
$30,001 to $60,000	446		43.9%
$60,001 to $100,000	409		40.2%
$100,001 or over	251		24.7%
Missing	10		0.01%
Relationship Status			
Single	130		9.1%
Married/Cohabiting	1165		82.2%
Separated/Divorced	122		8.6%
Current Household Structure			
Two-parent family	1038		73.2%
Step or blended family	138		9.7%
Sole parent family	215		15.2%
Other	27		1.9%
Children with Elevated Behavior Problems[a]	215		15.2%

[a]Participants scoring 1 SD or more above the CAPES mean were classified as having elevated child behavioral problems

Parenting- and child-related measures were completed about one target child; defined as the child in the study age range who played rugby league and whose birthday occurred next in the year. Most target children were male (92%), with a mean age of 10.67 years ($SD = 1.95$). Most children lived in two-parent households (73%), but single parent households were represented (15%). Around 15% showed elevated behavior problems using the Child

Table 2 Scale Descriptive Statistics and Results of Independent Groups *t*-tests Comparing Mothers' and Fathers' Rugby League Beliefs, Behavior, Parenting, and Mental Wellbeing

	Total Sample				Mothers ($N = 1016$)			Fathers ($N = 401$)			Results of *t*-tests	
Variable	*N*	α	*M*	*SD*	α	*M*	*SD*	α	*M*	*SD*	*t*	*p*
Inappropriate Spectator Behavior	1418	0.66	7.81	3.00	0.61	7.33	2.41	0.67	9.05	3.88	−8.26	<0.001
Negative Emotional Reactions	1317[a]	0.88	21.09	7.54	0.87	20.43	7.11	0.91	22.72	8.32	−4.71	<0.001
Positive Emotional Reactions	1317[a]	0.92	13.05	6.53	0.90	12.89	6.54	0.91	13.45	6.51	−1.41	0.158
Investment in Rugby League	1418	0.68	15.31	3.44	0.67	15.23	3.46	0.68	15.52	3.36	−1.42	0.155
Rugby League Identification	1291[b]	0.88	20.49	5.03	0.87	20.06	4.98	0.90	21.57	5.00	−4.92	<0.001
Competitive Attitudes	1326[c]	0.71	23.19	5.26	0.70	22.32	5.09	0.67	25.39	5.04	−9.94	<0.001
Importance of Winning	1418	–	3.67	0.99	–	2.27	1.00	–	2.60	1.00	−5.52	<0.001
CAPES Child Behavior	1418	0.93	18.32	11.16	0.93	17.82	11.24	0.92	19.61	10.89	−2.75	0.006
Psychological Control	1418	0.92	59.62	14.65	0.92	58.16	14.11	0.92	63.27	15.32	−5.99	<0.001
PS Over-reactivity	1418	0.78	2.49	0.93	0.78	2.46	0.93	0.77	2.58	0.93	−2.15	0.032
PS Laxness	1418	0.81	2.55	0.93	0.82	2.53	0.96	0.78	2.61	0.84	−1.39	0.166
Distress Tolerance	1418	0.80	3.34	1.00	0.82	3.30	1.02	0.76	3.43	0.93	−2.11	0.035
WEMWBS	1418	0.94	52.43	9.64	0.94	52.50	9.85	0.93	52.25	9.12	0.44	0.661

CAPES child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

[a]Mothers $N = 937$; Fathers $N = 379$

[b]Mothers $N = 921$; Fathers $N = 369$

[c]Mothers $N = 945$; Fathers $N = 380$

Adjustment and Parenting Efficacy Scale (Morawska et al., 2014).

Measures

Means, standard deviations and internal consistencies are provided in Table 2 for all measures. The online survey involved a combination of validated and psychometrically-tested questionnaire measures, as well as some new scales developed specifically for this study. Measures were selected to map onto the factors identified in the prior literature as determinants of general parenting and sports parenting, including sociodemographic (e.g., parental education, family income), family contextual (i.e., child behavior), general parental (i.e., ineffective and controlling parenting, emotional wellbeing, emotional reactivity) and sports-related parental factors (i.e., competitiveness, importance of winning, investment and identification with rugby league).

Demographic Information

Demographic information collected from parents included gender of parent and child, age of parent and child, highest level of education, employment status, income, ethnicity, relationship status, number of children, whether the parent was seeking professional mental health support, child health issues, and sport involvement.

Sports Parenting Behavior and Emotional Reactions

Parents' behavioral and emotional reactions at their children's games were assessed using two measures designed specifically for this study. Based on the literature and consultation with parenting and sports researchers, four scenarios related to the context of children and sporting events were developed. These scenarios followed a temporal format, assessing what parents would do with their children in the lead up to the game (scenario 1), when their child makes a mistake during a game (scenario 2), when an official makes a mistake (scenarios 3), and on the drive home (scenario 4). Parents were asked to rate their negative (anxious, sad, angry) and positive (happy, excited) emotional reactions to each scenario from 1 (*no levels*), to 5 (*the most you could feel*). Ratings of emotional responses across the scenarios were summed to create separate total scores for negative and positive emotional reactions. Parents were also asked to select from four options as to how they would respond to each scenario. There were appropriate and inappropriate responses to each scenario (see Appendix 1 for the vignettes with response categories; supplementary material). The scenarios were pilot trialed to assess for understanding and usability with a small group of parents using a sample of convenience.

Parental endorsement of inappropriate sports parenting behavior was assessed by asking parents to rate on a scale from 1 (*never*) to 7 (*always*) how often they had engaged in

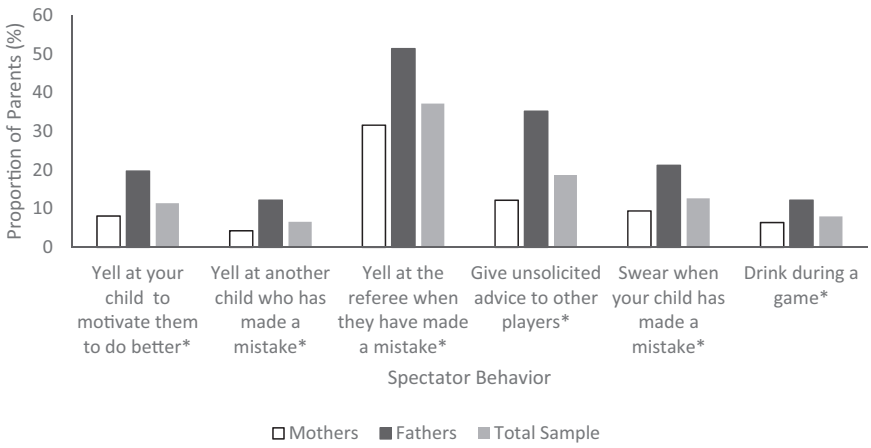

Fig. 1 Prevalence of Inappropriate Spectator Behavior at Junior Rugby League Games by Parent Gender. *Note*. *Denotes significant differences between mother and father proportions, $p > 0.001$. Proportions calculated based on responses of 2 or above on a scale from 1 (*Never*) to 7 (*Always*)

six possible inappropriate behaviors while watching their child play rugby league (Fig. 1). Examples included, "yell at the referee when they have made a mistake" and "yell at your child to motivate them to do better". Scores on these six items were summed to provide a total score for use as the dependent variable in multivariate analyses. To provide evidence for the construct validity of this new scale, Principal Components Analyses (PCA) with oblique (oblimin) rotation were conducted on this set of items. PCA on the total sample and for the mother and father samples separately provided support for a one-factor model, accounting for 39.38%, 36.05%, and 40.41% variance in scores respectively in each sample. Factor loadings were all above 0.40 in each sample, ranging from 0.49 to 0.70 in the full sample, 0.43 to 0.67 in the mother sample, and 0.45 to 0.71 in the father sample.

Child Behavior

The Behavioral Problems subscale from the Child Adjustment and Parent Efficacy Scale (Morawska et al., 2014) was used to assess parent-reported concerns about the target child's behavior. It consists of 24 items, 16 of which assessed behavioral concerns (e.g., My child rudely answers back to me) and eight assessing behavioral competencies (e.g., My child follows rules and limits). Each item was rated on a 4-point scale, ranging from 0 (*not true of my child at all*) to 3 (*true of my child very much, or most of the time*). The behavioral competency items were reverse scored and all items summed to yield a total behavior problems score. Higher scores indicated a greater level of behavior problems.

Parenting practices

Two measures were used to assess parenting. The 33-item Parental Psychological Control questionnaire (PPC; Olsen et al. (2002)) measured psychological control in terms of critical/rejecting parenting. There are six subscales: three items measuring constraining verbal expression, three items measuring invalidating feelings, three items measuring personal attacking, six items measuring erratic emotional behavior, five items measuring love withdrawal, and 13 items measuring guilt induction. Participants responded on a 5-point Likert scale from 1 (*not at all true*) to 5 (*always true*). For this study, a total score was derived by summing responses, with higher scores indicating greater psychological control. The Parenting Scale (PS; Arnold et al., 1993) assessed dysfunctional parenting styles. The measure uses a 7-point Likert scale, with a less appropriate and more appropriate anchor for each item. Two subscales from this questionnaire were used; laxness (e.g., "When I give a fair threat or warning… I often don't carry it out vs. I always do what I said") and overreactivity ("When I'm upset or under stress… I am picky and on my child's back vs. I am no more picky than usual"). Total scores were calculated for each subscale, with higher scores indicating higher levels of ineffective parenting.

Parent emotional wellbeing

Two scales were used to assess parents' emotional wellbeing. The 14-item Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) is a measure of mental wellbeing that focuses specifically on positive aspects of mental health. Individuals rated their experience of a series of statements (e.g., "I've been feeling optimistic about the future") on a scale from 1 (*none of the time*) to 5 (*all of the time*). Responses were summed to obtain a total emotional wellbeing score. Parents' capacity to tolerate emotional distress was also assessed using the 3-item Tolerance subscale from the Distress Tolerance scale (Simons & Gaher, 2005). Items were rated on a 5-point scale from 5 (*Strongly disagree*) to 1 (*Strongly agree*). An example item from the scale was "I can't handle feeling distressed or upset". Higher scores represented a stronger capacity to tolerate negative emotions.

Sports-related beliefs and attitudes

Of interest were four sports-related beliefs and attitudes: competitiveness, importance of winning, social identification with rugby league and investment in rugby league. First, participants completed a 10-item measure based on the Hypercompetitive Attitude Scale (Ryckman et al., 1990) to assess their attitudes towards competition. Items (e.g., "I find myself turning a friendly game or activity into a serious contest or conflict") were rated on a 5-point scale from 1 (*never true of me*) to 5 (*always true of me*). Items were summed so that higher scores reflected greater competitiveness. A single-item measure of importance of winning was also developed: "How important is it to win?". Participants rated this on a 5-point scale from 1 (*not at all important*) to 5 (*extremely important*).

Four questions were developed to assess parents' social identification with rugby league. These were: "I identify with my rugby league community", "I feel committed to the rugby league community", "I am glad to be a member of my rugby league community", and "being a member of my rugby league community is an important part of how I see myself." All items were answered on a 7-point scale from 1 (*strongly disagree)* to 7 (*strongly agree*), with higher total scores reflecting greater social identification.

Finally, five items assessed parents' investment in rugby league as a sport: "how much time do you spend per week in regards to your child's sport", "how much money do you spend per week in regards to your child's sport", "does the financial expense of your child's sport put pressure on your household budget", "how emotionally invested are you in your child's sport" and "how important to you is it that your child performs at a high level in sport?" All items were answered on a 5-point Likert scale from 1 (*a great deal*) to 5 (*none at all)*, and a total score calculated to indicate levels of rugby league investment.

Procedure

After institutional and industry ethical clearances were granted, an anonymous online survey was developed and hosted using the online survey package, Qualtrics™. All participants provided informed consent online before commencing the survey. After completing the survey, they were directed to a separate website that allowed them to enter a draw to win family tickets to an NRL game. Identifying information provided to enter the prize draw could not be connected to participants' survey responses, ensuring that their responses remained anonymous. Further, the anonymous nature of the survey precluded connection of mother and father responses within a family, thus it was not possible to ascertain if any of the data were dyadic.

Data Inclusion

Qualtrics recorded 3,031 responses to the online survey. To be included in data analyses, participants needed to have a child in the target age range who was enrolled in JRL and have no more than 50% of data missing on the variables assessed. Of the 3031 parents who accessed the survey, 1057 (35%) were excluded because they had not made a valid attempt at the survey (i.e., had no data or did not complete beyond the initial demographic items), or had not been adequately sampled because they had over 50% missing data ($n = 529$; 17%) participants were excluded because they had over 50% missing data, with an additional 27 participants deleted as they indicated that their child was not enrolled in rugby league. The final N was 1418.

Cases were then examined for item-level missing data. Items within most scales had very minimal missing data; missingness on individual items on the CAPES, psychological control scale, PS, WEMWBS and distress tolerance scale ranged from 0 to 0.03%; and between 2.3 and 2.8% on the items assessing investment in rugby league and engagement in inappropriate spectator behavior. While the results of Little's (1988) test on all items in the survey indicated the data was not Missing Completely at Random (MCAR; χ^2 $(9490) = 10543.23$, $p < 0.001$), because this item-level missingness was <3% and the sample size was large, missing values on items within these scales were imputed using the expectation-maximization (EM) algorithm (Tabachnick & Fidell, 2007). In comparison, there was more missing data on items within the measures that appeared at the end of the online survey. This missing data was due to the entire scale missing for a participant; specifically, 6.5% of participants had not completed the competitive attitudes scale, 9.0% had not completed the rugby league identity scale, and 7.1% had not completed the behavioral and emotional responses to the vignettes. Thus, missing data were not imputed for cases in which entire measures were incomplete and differences in sample sizes across different analyses have been noted.

Data Checking

Distributional checks for violations of normality revealed that, except for the Distress Tolerance scale and the Importance of Winning scale, most measures were significantly skewed, and there were several univariate outliers on each subscale. This was expected given that the responses were drawn from a normal, population sample of families and children. When appropriate transformations to reduce the influence of the outliers and skew were applied, there were no substantive changes to the bivariate

correlations among these variables; so, the original, non-transformed scores were retained in all analyses.

Data Analysis

Descriptive statistics were used to assess levels of parental investment, identification with rugby league, and importance of winning along with parental ratings of the factors influencing their decision to re-enroll their children in rugby league. Independent groups *t*-tests for continuous scores and chi-square analyses for categorical scores were used to compare mothers' and fathers' beliefs and attitudes about rugby league and their behavior at JRL games.

Correlation analyses were conducted to explore the factors associated with inappropriate sports parenting behavior and negative emotional reactions. All analyses were conducted separately for mothers and fathers. Correlational analyses were first conducted to examine the bivariate associations among the predictor and criterion variables. Correlations involving categorical variables (e.g., cultural background, household structure, education level, child gender) were calculated using both Spearman's Rho and Pearson's *r*. Where there were no differences in the findings between these two methods, Pearson's *r* results were reported; the exception to this was for correlations with cultural background, which used Spearman's Rho as the data were non-ordinal.

Separate hierarchical multiple regression analyses for mothers and fathers were used to examine the relative contribution of ineffective parenting, parental emotional functioning and parental sporting attitudes to (a) inappropriate sports parenting behavior and (b) negative emotional reactions to game day scenarios. Only variables significantly associated with the outcome at the bivariate level were entered in the regression model. Factors more distally related to parental sport behavior and emotions were entered in earlier steps of the model. The entry sequence was (1) socioeconomic factors, (2) child-related factors (e.g., age, gender, behavioral problems), (3) parenting practices (i.e., ineffective parenting, psychological control), (4) parental emotional adjustment (i.e., distress tolerance, mental wellbeing), and (4) parental sports-related attitudes (i.e., investment, rugby league identification, importance of winning, competitiveness).

Transparency and Openness

We have reported all data exclusions, manipulations and measures used in the study. Data, analysis code and research materials are available upon request to the first author. Data were analyzed using the Statistical Package for the Social Sciences version 28.0 (IBM SPSS Statistics, 2021). This study's design and its analysis were not pre-registered.

Results

Comparisons Between Mothers' and Fathers' Sports-Related Reactions and Beliefs, and Parenting and Mental Wellbeing

Parental Behavior and Emotions at Games

Chi-square analyses revealed several differences between mothers and fathers in their engagement in inappropriate sports parenting behavior at games (see Fig. 1). Fathers were more likely to engage in all the behaviors assessed, including yelling at their child to motivate them X^2 (1, $n = 1417$) = 38.61, $p < 0.001$; yelling at another player X^2 (1, $n = 1417$) = 29.18, $p < 0.001$; or at the referee if they have made a mistake X^2 (1, $n = 1417$) = 48.14, $p < 0.001$; giving unsolicited advice to other players X^2 (1, $n = 1417$) = 99.67, $p < 0.001$;, swearing when their child makes a mistake (X^2 (1, $n = 1417$) = 36.39, $p < 0.001$) and drinking alcohol during a game X^2 (1, $n = 1417$) = 13.17, $p < 0.001$. Further, fathers reported greater overall usage of inappropriate sports parenting behavior (see Table 2).

On the vignettes that measured responses to game day scenarios before, during, and after games, mothers endorsed the appropriate parental response more often than fathers for two scenarios. In the first scenario involving giving pre-game advice to a disinterested child, 74% of mothers endorsed the appropriate parental response (*I would recognize that it wasn't a good time and I would discuss it later*) compared to 59% of fathers, X^2 (1, $n = 1321$) = 28.46, $p < 0.001$. This same parental behavior was the most appropriate response to the fourth scenario, which involved trying to talk about the game with their disinterested child during the trip home. A greater proportion of mothers (86%) compared to fathers (80%) selected this option, X^2 (1, $n = 1322$) = 7.28, $p = 0.007$. In comparison, in the second scenario in which the child makes a mistake at a crucial time of the game, more fathers (81%) than mothers (75%) X^2 (1, $n = 1323$) = 4.01, $p = 0.045$, responded with one of the two appropriate responses (*I would tell my child to forget about it and keep playing* or *I would ignore the other sports parentings*). Finally, the same proportion of mothers and fathers (66%) selected the appropriate parental response (*I would think that the official was doing their best and say nothing*) to the third scenario, which involved a referee making a game-changing decision that favored their child's opposition, X^2 (1, $n = 1322$) = 0.00, $p = 0.964$.

With regard to emotional responses to these scenarios, fathers were more likely to report that they would have a negative emotional reaction (see Table 2). There was no difference between mothers and fathers in reports of positive emotional reactions.

Parental Attitudes and Beliefs About Rugby League

Independent groups *t*-tests were conducted to explore differences between mothers and fathers in their investment in rugby league, social identification with rugby league, competitive attitudes and importance of winning (see Table 2). The findings revealed that, compared to mothers, fathers identified more highly with rugby league, they placed greater importance on winning and had more competitive attitudes. There were no differences between mothers' and fathers' ratings of investment in rugby league.

Parenting, Emotional Wellbeing, and Child Behavior

The results of independent groups *t*-tests indicated that fathers reported higher levels of psychologically controlling and overreactive parenting and child behavior problems (see Table 2). Fathers also reported higher distress tolerance than mothers. There were no differences between mothers and fathers in reports of lax parenting or mental wellbeing.

Factors Associated with Inappropriate Sports Parenting Behavior

Correlational analyses were conducted separately for mothers and fathers (see Table 3). Results indicated that there were several commonalities between mothers and fathers in the bivariate associations with engagement in inappropriate sports parenting behavior. Specifically, mothers and fathers who reported greater use of ineffective and more psychologically controlling parenting practices, lower mental wellbeing, lower distress tolerance and that their child had higher levels of behavior problems had higher engagement in poor sports parenting behavior. Mothers and fathers were also more likely to report negative behavior when they had stronger investment in rugby league, placed more importance on winning and more competitive attitudes. Levels of identification with rugby league were not associated with sports parenting behavior for mothers or fathers. No sociodemographic factors were significant correlates for fathers. However, younger mothers and those with lower education levels were more likely to engage in inappropriate behavior. No other sociodemographic factors were related to sports parenting behavior for mothers.

Hierarchical multiple regression analyses were conducted to identify which of the above factors were uniquely related to sports parenting behavior. The full model for mothers accounted for 18% of variance, F (11, 929) = 18.35, $p < 0.001$ (see Table 4). In Step 1 significant demographic factors were entered into the model, which accounted for a significant 2% of variance. Here both maternal age and education were significant predictors. Step 2 was also significant accounting for 3% independent variance. At this step, age, education and child behavior problems were all significant predictors. Step 3 involved the addition of the parenting factors and contributed 8% of variance. Maternal age and education continued to be significant, while maternal overreactivity and psychological control were also significant predictors. Child behavior was no longer significant and maternal laxness was not significant. Mothers' emotional wellbeing was entered at Step 4 and accounted for a small but significant proportion of unique variance (1%). Mothers' mental wellbeing, but not distress tolerance were significant predictors at this step, while education, psychological control and overreactivity were also significant. Finally, the addition of the sports-related beliefs and attitudes at Step 5 contributed an additional 4% of variability to the prediction of mothers' negative sports parenting behavior. In the final model with all variables considered simultaneously, age, education, overreactivity, psychological control, mental wellbeing, investment in rugby league, competitive attitudes and importance of winning were unique predictors. Psychological control and competitive attitudes appeared to be the strongest predictors.

The full model for fathers explained a significant 24% of variance, F (9, 368) = 13.88, $p < 0.001$ (see Table 5). Demographic factors were not entered into the father regression model since these were not significant correlates at the bivariate level. Thus, Step 1 in the model for fathers involved the inclusion of child behavior. This step and this variable were significant, accounting for 3% of variance. Parenting was entered at Step 2 and accounted for 13% of additional variance. Psychological control was significant at this step, but child behavior and parental overreactivity were not. Step 3, in which fathers' emotional wellbeing was entered, did not add significant variance to the model. At this step, only psychological control was a significant predictor. Sport-related beliefs and attitudes were entered at the final step and explained 9% additional variance. In this full model, fathers' psychological control, rugby league investment, competitive attitudes and beliefs about the importance of winning were independent predictors of fathers' inappropriate sports parenting behavior.

Factors Associated with Negative Emotional Reactions to Game-Day Scenarios

A similar pattern of bivariate associations was found in correlations with negative emotional reactions to game day

Table 3 Bivariate Correlations Among Predictor and Criterion Measures for Mothers and Fathers

	Mothers		Fathers	
	Inappropriate Spectator Behavior[a]	Negative Emotional Reactions[b]	Inappropriate Spectator Behavior[c]	Negative Emotional Reactions[d]
Predictor variables				
Sociodemographic Factors				
Parent Age	−0.10**	−0.02	−0.02	0.06
Parent Education	−0.10**	−0.02	−0.01	0.05
Parent Income	0.05	−0.02	−0.03	0.00
Parent Cultural Background[e]	0.05	0.02	0.06	0.02
Household Structure	0.00	−0.07*	0.04	0.00
Number of Dependent Children	0.02	−0.01	0.00	−0.03
Child Factors				
Child Age	−0.01	−0.02	0.07	0.03
Child Gender	0.01	−0.05	−0.06	0.00
CAPES Child Behavior	0.16***	0.19***	0.18***	0.17***
Parenting Practices				
PS Overreactivity	0.27***	0.30***	0.29***	0.35***
PS Laxness	0.12***	0.18***	0.20***	0.22***
Psychological Control	0.29***	0.33***	0.36***	0.43***
Parental Emotional Wellbeing				
WEMWBS Mental Wellbeing	−0.21***	−0.25***	−0.12*	−0.28***
Distress Tolerance	−0.16***	−0.24***	−0.16**	−0.30***
Sports-Related Beliefs and Attitudes				
Rugby League Investment	0.16***	0.13***	0.21***	0.29***
Rugby League Identification	−0.03	−0.02	0.03	0.00
Competitive Attitudes	0.23***	0.24***	0.34***	0.38***
Importance of Winning	0.16***	0.21***	0.25***	0.28***

CAPES child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

[a]Based on $N = 1016$ except for $N = 921$ for Rugby League Identity and $N = 945$ for Competitive Attitudes

[b]Based on $N = 937$ except for $N = 915$ for Rugby League Identity

[c]Based on $N = 401$ except for $N = 369$ for Rugby League Identity and $N = 380$ for Competitive Attitudes

[d]Based on $N = 379$ except for $N = 367$ for Rugby League Identity

[e]Spearman's Rho statistic reported because of non-ordinal data

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

events as were found for inappropriate sports parenting behavior (see Table 3). Stronger negative emotional reactions were related to mothers and fathers using more ineffective and controlling parenting strategies and rating their child as having more behavior problems, and with parents having lower distress tolerance and mental wellbeing. Mothers and fathers reported more negativity when they had greater investment in rugby league, placed more importance on winning and had more competitive attitudes. Mothers' and fathers' rugby league identification, however, was unrelated to negative emotional reactions. Finally, sociodemographic factors were not significant correlates for

Table 4 Results of Hierarchical Regression Analysis Predicting Mothers' Inappropriate Spectator Behavior

	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Parent age	−0.03	0.01	−0.08*	−0.03	0.01	−0.07*	−0.03	0.01	−0.07*	−0.02	0.01	−0.06	−0.02	0.01	−0.05*
Parent education	−0.24	0.09	−0.09**	−0.28	0.09	−0.10***	−0.28	0.09	−0.10***	−0.25	0.09	−0.09**	−0.25	0.09	−0.09**
CAPES Child Behavior				0.04	0.01	0.17***	0.01	0.01	0.03	0.00	0.01	0.02	0.01	0.01	0.04
PS Overreactivity							0.41	0.11	0.16***	0.34	0.11	0.13**	0.31	0.11	0.11**
PS Laxness							−0.07	0.09	−0.03	−0.10	0.09	−0.04	−0.10	0.09	−0.04
Psychological Control							0.04	0.01	0.23***	0.04	0.01	0.21***	0.03	0.01	0.15***
WEMWBS Mental Wellbeing										−0.02	0.01	−0.09*	−0.02	0.01	−0.08*
Distress Tolerance										−0.14	0.08	−0.06	−0.11	0.08	−0.05
Rugby League Investment													0.07	0.02	0.10**
Competitive Attitudes													0.06	0.02	0.13***
Importance of Winning													0.17	0.08	0.07*
	$\Delta R^2 = 0.02$, $F(2, 938) = 8.97$, $p < 0.001$			$\Delta R^2 = 0.03$, $F(1, 937) = 27.52$, $p < 0.001$			$\Delta R^2 = 0.08$, $F(3, 934) = 29.81$, $p < 0.001$			$\Delta R^2 = 0.01$, $F(2, 932) = 6.04$, $p = 0.002$			$\Delta R^2 = 0.04$, $F(3, 929) = 14.07$., $p < 0.001$		

CAPES child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

fathers, while for mothers, those living in single-parent households were more likely to have negative emotional reactions.

In the hierarchical multiple regression analyses, the full model accounted for 21% of variance in mothers' negative emotional reactions, F (10, 922) = 24.20, $p < 0.001$ (see Table 6). Household structure was entered at Step 1 as the only significant demographic correlate, and this accounted for a small but significant proportion of variance (< 1%). Child behavior was entered at Step 2 and explained 4% of variance, with both household structure and child behavior being significant at this step. Step 3, in which mothers' parenting practices were entered, accounted for 10% additional variance. Here, only the three parenting variables, laxness, overreactivity and psychological control were significant predictors. Step 4 involved the addition of parental wellbeing factors and this accounted for 3% of variance. Overreactivity and psychological control continued to be significant predictors at this step, while mothers' mental wellbeing and distress tolerance were also significant. Finally, sports-related beliefs and attitudes were entered at the fifth and final step and explained 4% extra variance. In the final model with all variables considered, mothers' overreactive and psychologically controlling parenting, mental wellbeing, distress tolerance, and attitudes towards competition and winning were unique predictors of their negative emotional reactions.

The full model predicting negative emotional reactions among fathers was also significant F (9, 366) = 23.37, $p < 0.001$, explaining 37% of variance (see Table 7). Again, demographic factors were not entered into the model for fathers. Step 1, containing child behavior, explained a significant 3% of variance. Step 2, in which the parenting variable were entered, was also significant, accounting for 19% of variance. Overreactivity and psychological control were unique predictors at this step. At Step 3, the inclusion of fathers' emotional wellbeing explained 6% additional variance. The significant predictors were overreactivity, psychological control, mental wellbeing and distress tolerance. The sports-related beliefs and attitudes entered at the final step added 9% of variance. In the final model predicting fathers' negative emotional reactions, the unique predictors were fathers' psychologically controlling parenting practices, mental wellbeing, distress tolerance, investment in rugby league and competitive attitudes. Competitive attitudes and psychological control were the strongest predictors.

Discussion

The overall aim of this study was to make sense of appropriate data to better define and understand parental attitudes,

behavior, and emotional reactions in the context of a junior team sport in Australia. Although a few studies had examined broad influences on parental involvement in sport (e.g., years involved, previous sporting history, SES; Knight et al., 2016) there had not been in-depth examination of parental attitudes, beliefs, expectations, and emotional reactions in relation to their children's sport, and how these factors affect sports parenting behavior. Thus, we sought to comprehensively investigate the role of sociodemographic factors, child behavior, parenting practices, parental emotions and sports-related beliefs and attitudes in influencing parental problem behavior and emotional reactions at junior sport. The study also explored differences in mothers and fathers in their sports parenting beliefs and behaviors. This deeper understanding of parental behaviors is essential to inform the design and implementation of preventative interventions to promote positive and supportive sports parenting behaviors.

The first aim of this study was to examine the occurrence of inappropriate parental behaviors within junior rugby league (JRL). Overall, parents reported inappropriate behaviors in their interactions before, during, and after rugby league games. The most frequently endorsed inappropriate sports parenting behaviors among both mothers and fathers were yelling at referees when they were perceived to make a mistake in their decision-making (reported by 37% of parents) and giving unsolicited advice to other players (reported by 19% of parents). However, fathers were more likely than mothers to report that they had engaged in all the inappropriate sports parenting behaviors examined in the survey, including yelling at referees, own child, and other players; swearing when their child had made a mistake; consuming alcohol at matches; and giving unsolicited advice to players. Similarly, fathers reported stronger negative emotional responses to the game day scenarios. In comparison, mothers were more likely to endorse the appropriate parental response to two out of the four scenarios. Fathers' tendency to engage in negative sports parenting behavior and have stronger negative emotional reactions than mothers may be associated with fathers also reporting a stronger identity with the sport of rugby league; stronger competitive attitudes; and greater importance placed on winning in comparison to mothers.

Previous qualitative research has highlighted the adverse impact of inappropriate parental behaviors on children's quality of sporting experience, motivation to play, perceptions of competence, and willingness to stay in the sport (e.g., Elliott & Drummond (2017); Ross, Mallett & Parkes, 2015). These findings confirmed that inappropriate parental sports behavior is prevalent in junior rugby league and is demonstrated by both mothers and fathers. Further, this study extended prior qualitative research on the topic through its use of a large quantitative survey of parents ($N = 1418$), and its investigation of the behavior of both mothers and fathers. The higher prevalence in inappropriate parental behaviors and negative emotional reactions among fathers in this study supports prior research from the U.S. detailing differences in the behavior of mothers and fathers in junior sport. For example, Dorsch et al. (2016) found that fathers reported greater parent-child conflict and pressure in sport than mothers, with higher father and child ratings of conflict and negative affect positively associated with child perceptions of pressure. Research in the sports context is consistent with research on the association between parent gender and parent-child interactions more generally, with evidence suggesting that fathers engage in higher levels of harsh discipline than mothers, particularly with their sons (McKee et al., 2007). Sport has been implicated as a major cultural context for father involvement with their children (Coakley, 2006; Harrington, 2006; Kay (2007)), and fathers have been found to be more likely to engage in more physically active and challenging play than mothers (Schoppe-Sullivan & Fagan, 2020). Thus, sport may be an important engagement point for fathers in supporting them to learn more constructive and effective parenting strategies both in sport and in the home, which is likely to be valuable given the low participation of fathers generally in parenting programs (Sanders et al., 2014).

With regard to the potential determinants of inappropriate parental behavior and emotional responses at sporting events, the main finding was that there was a similar pattern of predictors for both mothers and fathers (with some differences). For mothers, hierarchical regression models showed that mothers were more likely to report inappropriate sports parenting behavior when they engaged in psychologically controlling and overreactive parenting, were younger, had higher levels of investment in rugby league and held more competitive attitudes. Similarly, for fathers, psychologically controlling parenting, rugby league investment, attitudes about competitiveness and winning were also significant independent predictors of fathers' inappropriate sports parenting behavior. A similar pattern of predictors in hierarchical regression models predicting parents' emotional reactions was found. For mothers, psychologically controlling parenting, parental emotional wellbeing, distress tolerance, and attitudes towards competition and winning were all unique predictors of their negative emotional reactions. For fathers, the unique predictors were psychologically controlling parenting practices, mental wellbeing, distress tolerance, investment in rugby league and competitive attitudes. Overall, competitive attitudes and psychologically controlling parenting were the most reliable predictors of parent's emotional reactions. This pattern of psychologically controlling parenting is a risk factor for conduct problems in children, but it has been shown to be amenable to change through

Table 5 Results of Hierarchical Regression Analysis Predicting Fathers' Inappropriate Spectator Behavior

	Step 1			Step 2			Step 3			Step 4		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
CAPES Child Behavior	0.06	0.02	0.17***	0.00	0.02	0.00	−0.00	0.02	−0.03	0.02	0.02	0.07
PS Overreactivity				0.37	0.27	0.09	0.34	0.27	0.08	0.19	0.26	0.05
PS Laxness				0.48	0.25	0.11	0.45	0.25	0.10	0.44	0.24	0.10
Psychological Control				0.07	0.01	0.29***	0.07	0.02	0.28***	0.04	0.01	0.16**
WEMWBS Mental Wellbeing							−0.01	0.02	−0.02	−0.00	0.02	−0.02
Distress Tolerance							−0.27	0.20	−0.07	−0.17	0.19	−0.04
Rugby League Investment										0.12	0.05	0.11*
Competitive Attitudes										0.15	0.04	0.20***
Importance of Winning										0.58	0.19	0.15**
	$\Delta R^2 = 0.03$, $F(1, 376) = 11.74$, $p < 0.001$			$\Delta R^2 = 0.13$, $F(3, 373) = 18.32$, $p < 0.001$			$\Delta R^2 = 0.01$, $F(2, 371) = 1.08$, $p = 0.342$			$\Delta R^2 = 0.09$, $F(3, 368) = 15.39$, $p < 0.001$		

CAPES child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

evidence-based parenting interventions (Chen & Chan, 2016; Sanders et al., 2014)These findings suggest that when parents use coercive parenting practices and have performative success cognitions (beliefs about the importance of winning) they are likely to be more vulnerable to emotional dysregulation and report difficulties in managing their own emotions and behavior during sporting events (Elliott & Drummond (2017); Knight et al., 2017; Lauer et al., 2010; Ross et al., 2015).

Sport is often a highly emotional experience for children and their parents (e.g., Dorsch et al., 2009). This context of high emotionality can influence patterns of behavior, expectations, attributions, and subsequent personal narratives that influence young people's development and future behavior in sport (Ferris et al., 2007; Ross et al., 2015). Emotional dysregulation has been found to be a key issue in many sports parenting studies (Dorsch et al., 2015; Knight et al., 2017; McMahon & Penney, 2015; Ross et al., 2015), which supports the need for parents to develop self-regulatory skills in shaping adaptive parenting behaviors (e.g., Sanders & Mazzucchelli, 2013). The strongest predictors of negative parenting behaviors and emotional responses were competitive attitudes and psychologically controlling parenting, which likely reflect the culture of competitive sport (e.g., Dorsch et al., 2015) and perhaps the changing goals and expectations of parents and their associated identities (Elliott and Drummond (2017); Knight & Holt, 2014; Knight et al., 2017). It might also explain controlling parental behaviors (Knight et al., 2017). Importantly, in future research an important aspect to consider is the player's level of competitiveness (elite to recreational) and parents' own personal involvement and experience in rugby league, as these could provide further insights into the impact on parental involvement and endorsement of competitiveness. These insights about the complexity of sport parenting are necessary to guide future policy and practice in providing a safe, enjoyable, and mutually respectful learning environment. We suggest that Côté and colleagues' Personal Assets Framework (PAF; Côté et al., 2016) is a useful lens to understand the relevance of adaptive relationships (e.g., parent-child; coach-parent) and athlete assets (e.g., confidence, competence, connection, character) that, in turn, supports athlete outcomes (participation, performance, and personal development).

In seeking to inform future policy and practice, the strengths and weaknesses in the study should be considered. A strength of this study was the large sample that was broadly representative of the Australian rugby league community, with participation from both mothers and fathers, as well as parents with Aboriginal or Torres Strait Islander heritage (NRL, 2021). However, while there was some involvement of those with Pasifika heritage, it was well below what may have been expected based on the playing population. Findings should also be considered in light of the low internal consistency ($\alpha < 0.70$) of the measure used to assess inappropriate spectator behavior. Furthermore, a reliance on single informants, the use of parent-report measures, and inference of causal progression based on single point in time assessment of both predictor and outcome variables. Indeed, longitudinal studies and intervention trials that experimentally manipulate determinants are needed to derive causal inferences. Finally, this was the first attempt to understand the specific behaviors in a junior rugby league context using a series of four vignettes at different temporal times. The focus in these scenarios was on mistakes and negative situations. However, to fully understand parental behavior in this context, additional scenarios focusing on positive situations (e.g., demonstrating good sportsmanship) would be useful to determine what factors predict prosocial behavior. Finally, due to the anonymous nature of the survey we were unable to connect mother and father responses within a family, thus it was not possible to ascertain if any of the data were dyadic.

Table 6 Results of Hierarchical Regression Analysis Predicting Mothers' Negative Emotional Reactions to Game-Day Scenarios

	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	B	*B*	*SE*	β	*B*	*SE*	β
Household Structure	−0.57	0.28	−0.07*	−0.68	0.28	−0.08*	−0.40	0.26	−0.05	−0.46	0.26	−0.05	−0.45	0.26	−0.05
CAPES Child Behavior				0.12	0.02	0.19***	0.02	0.02	0.03	0.01	0.02	0.02	0.02	0.02	0.04
PS Overreactivity							1.09	0.31	0.14***	0.73	0.31	0.09*	0.61	0.30	0.08*
PS Laxness							0.55	0.26	0.07*	0.40	0.26	0.05	0.39	0.25	0.05
Psychological Control							0.12	0.02	0.24***	0.11	0.02	0.22***	0.08	0.02	0.16***
WEMWBS Mental Wellbeing										−0.08	0.03	−0.11**	−0.08	0.02	−0.10**
Distress Tolerance										−0.83	0.23	−0.12***	−0.79	0.22	−0.11***
Rugby League Investment													0.14	0.06	0.07*
Competitive Attitudes													0.16	0.05	0.11***
Importance of Winning													0.75	0.24	0.10**
	$\Delta R^2 = 0.00$, $F(1, 932) = 4.20$, $p = 0.041$			$\Delta R^2 = 0.04$, $F(1, 930) = 36.45$, $p < 0.001$			$\Delta R^2 = 0.10$, $F(3, 927) = 37.05$, $p < 0.001$			$\Delta R^2 = 0.03$, $F(2, 925) = 15.72$, $p < 0.001$			$\Delta R^2 = 0.04$, $F(3, 922) = 13.64$, $p < 0.001$		

CAPES child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Conclusion and Future Directions

Overall, these findings suggest that any intervention seeking to foster prosocial parental behavior, reduce problem parenting and negative emotional reactions by parents in junior sport will require a comprehensive approach. To advocate for and support their children's sporting experience, parents need practical strategies to support them to (i) learn to manage their own expectations and beliefs; (ii) deemphasize the importance of winning; (iii) manage negative emotions during games (anger, disappointment) and to change potentially dysfunctional cognitions that trigger negative emotions and behavior (e.g., "It will be awful if we lose this game", "My child has failed in their team does win"); (iv) refrain from inappropriate behavior (e.g., avoid harsh, critical parenting); and (v) develop a personal and collective sense of identity to be positive role models.

Based on these findings and the importance of quality relationships in sport (Côté et al., 2016) to enhance the potential value of sport in contributing to athlete performance and personal development, we argue that a parent induction program is needed to better prepare them in their role as supporter of children's sporting experience. An induction and registration procedure for all parents at the initial sign-up could have multiple purposes: welcome parents and children to rugby league community, build a sense of identity within club and sport, and build expectations about acceptable and supportive parental behavior – before, during and after games. Intervention format and timing will be key considerations in the design of an induction program, particularly since modern parents are busy juggling multiple responsibilities and priorities and may not see the relevance of such a program. Thus, the program will need to be brief and targeted, and delivery needs to be readily accessible for parents from a range of socioeconomic circumstances. Previous research indicates that time-limited parenting interventions (<3 h) focusing on a particular problem behavior can be highly effective with diverse populations (Dittman et al., 2016; Mejia et al., 2015), while there is a strong evidence base for the effectiveness of online parenting programs to address parental behavior (Spencer et al., 2020). Thus, a brief, online skills-based parenting program may be both an acceptable and effective format for promoting positive parenting in junior sport. Further research is needed to design and evaluate a program to enhance positive parental involvement in children's sport. Given the importance of sport for maintaining children's physical, social and psychological wellbeing, such solution-focused research that focuses on maximizing parental capacity is essential to ultimately support children to retain positive involvement in sport throughout childhood and adolescence.

Table 7 Results of Hierarchical Regression Analysis Predicting Fathers' Negative Emotional Reactions to Game-Day Scenarios

	Step 1			Step 2			Step 3			Step 4		
	B	*SE*	*β*	*B*	*SE*	*β*	*B*	*SE*	*β*	*B*	*SE*	*β*
CAPES Child Behavior	0.13	0.04	0.17**	−0.03	0.04	−0.04	−0.05	0.04	−0.07	0.01	0.04	0.01
PS Overreactivity				1.37	0.57	0.15*	1.12	0.55	0.12*	0.74	0.52	0.08
PS Laxness				0.65	0.53	0.07	0.32	0.51	0.03	0.33	0.48	0.03
Psychological Control				0.19	0.03	0.36***	0.17	0.03	0.32***	0.11	0.03	0.21***
WEMWBS Mental Wellbeing							−0.14	0.04	−0.15**	−0.14	0.04	−0.15**
Distress Tolerance							−1.64	0.41	−0.19***	−1.41	0.39	−0.16***
Rugby League Investment										0.34	0.11	0.14**
Competitive Attitudes										0.37	0.08	0.23***
Importance of Winning										0.77	0.39	0.09
	$\Delta R^2 = 0.03$, $F(1, 374) = 10.96$, $p = 0.001$			$\Delta R^2 = 0.19$, $F(3, 371) = 29.17$, $p < 0.001$			$\Delta R^2 = 0.06$, $F(2, 369) = 15.10$, $p < 0.001$			$\Delta R^2 = 0.09$, $F(3, 366) = 17.60$, $p < 0.001$		

**CAPES* child adjustment and parental efficacy scale, *PS* parenting scale, *WEMWBS* Warwick-Edinburgh mental wellbeing scale

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

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Compliance with Ethical Standards

Conflict of interest The authors declare no competing interests.

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