The 2 × 2 Model of Pressure to be Perfect and the Development of Perfectionism in Youth Sport

Daniel Joseph Mulligan Fleming

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

Sport is extremely popular with the youth of today. There are many benefits of sport participation for these individuals. However, there may also be some downsides to youth sport participation. In particular, excessive pressures from parents and coaches may lead youth athletes to develop characteristics, which can have negative consequences, such as perfectionism. Perfectionism is a multidimensional personality characteristic that comprises two higher order dimensions, perfectionistic strivings and perfectionistic concerns. Both dimensions have been associated with many maladaptive outcomes such as exercise dependence and clinical issues such as depression, eating disorders and suicide. In order to further our understanding of this characteristic, the present study aimed to introduce and test a new model of the development of perfectionism in youth athletes – the 2 × 2 model of pressure to be perfect. This model differentiates four within-person combinations of pressure: Pure coach pressure (high coach pressure/low parent pressure), pure parent pressure (high parent pressure/low coach pressure), mixed pressure (high coach pressure/high parent pressure), and no pressure (low coach pressure/low parent pressure). A sample of 159 youth athletes (*M* age = 14.21 years) competing from club to international level completed measures of perfectionistic strivings, perfectionistic concerns, coach pressure to be perfect, and parent pressure to be perfect. The 2 × 2 model was tested using moderated hierarchical regression and simple slopes analyses. As no interactive effect was found between pure coach pressure and pure parent pressure, a compensatory model was used in order to test the model's hypotheses and calculate effect sizes. Pure parent pressure (high parent pressure/low coach pressure) emerged as the most important predictor of both

perfectionistic strivings and concerns. These findings may be useful for guiding future educational programmes to help parents best support their children in sport.

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1. Introduction

Sport plays a central role in modern society. For example, the BBC (2016; 2018) reported that over 40 million people watched the Rio de Janerio 2016 Olympic Games and a similar amount of people tuned into the 2018 FIFA world cup finals in Russia. An interest in sport extends across age groups but is especially prevalent in youth. For example, Guevremont, Findlay and, Kohen (2008) found that sport is the most common extracurricular activity for youth with over 70% of 5-15-year olds participating in sport each week (Department for Digital, Culture, Media and Sport, 2018). This interest in sport appears to continue into late adolescence and early adulthood with Sport England (2017) reporting that 4.6 million young people aged 14-25 participate in organised sport at least once per week. People then are clearly invested in sport. Consequently, it would seem appropriate to maximise its potential to have a positive impact on society. This includes maximising the benefits that participating in sport and physical activity holds for the overall health and well-being of young people.

Health is defined by the World Health Organisation (WHO Constitution, 2006, p.1) as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". It is well documented that participating in sports and physical activity can have many health benefits, such as improved body composition, reduced likelihood of obesity, and improved cardiovascular health (Hills, Dengel & Lubans, 2015). Further, Telford et al. (2016) found that 8-15-year olds who were members of sport clubs took more steps, were fitter and, if female, had less body fat than those who were not members of sport clubs. However, the

benefits of sport and physical activity are not exclusively physiological in nature. Physical activity and participation in sport also offer a range of psychosocial benefits. These include reduced stress, anxiety, depression and improvements in self-confidence and self-esteem (Hills, Dengel & Lubans, 2015). One context in which these benefits can often be seen for young people is youth sport.

Youth Sport

Childhood and adolescence present a portion of an individual's life where their sport participation is at its highest (McKay, Cumming, & Blake, 2019). Recent statistics indicate that in the United Kingdom, 3 million children lead active lives, with a large amount taking part in organised sport within school or at extra-curricular activities (Sport England, 2018). Such organised youth sport presents a uniquely different context to that of collegiate or adult populations. The unique context is likely brought about due to the focus being on the development of life skills, health and long-term participation in youth sport, later changing to performance as athletes get older (Côté & Viermaa, 2014). Individuals participating in youth sport must negotiate many conflicting factors from stakeholders, such as parents, coaches, teachers, and peers, whilst coping with physical and/or psychological stresses and other academic and/or work commitments (McKay, Cumming, & Blake, 2019). Research into developing an understanding of how to optimise the youth sport experience may be critical in promoting life-long sport participation and the continuation of reaping the positive outcomes of sport and physical activity (Green, 2012).

The main positive outcomes of participating in youth sport can be categorised as being physical, psychological/emotional, social, and intellectual in nature (Fraser-Thomas, Côté, & Deakin 2007). Physical benefits may include increased

cardiovascular fitness, weight control, muscular strength, and endurance. Fraser-Thomas, Côté, and Deakin (2007) identified that physical benefits may include a reduced risk in the likelihood of an individual to take up smoking and chance of developing diseases such as heart disease, diabetes, osteoporosis, stroke, depression, and cancer. All of which pose serious threats to health and potentially life. From a psychological/emotional standpoint, those who are active experience challenge, fun, and enjoyment whilst also having opportunities to increase their self-esteem and decrease stress. Physical activity also correlates with overall happiness and well-being in day to day life. Socially, sport experiences provide opportunities to develop citizenship, social success, positive peer relationships, leadership skills, cooperation, empathy, responsibility, self-control and a sense of social status and social mobility (Fraser-Thomas, Côté, & Deakin, 2007). Finally, it is often found that participation in sport is positively correlated with academic performance (Fraser-Thomas, Côté, & Deakin, 2007).

The positive outcomes that can be gained through youth sport involvement have also been supported by a number of systematic reviews. Eime et al. (2013) examined the psychosocial benefits of sport participation. In their review, 30 studies met the exclusion/inclusion criteria. The studies collectively demonstrated that sport involvement resulted in fewer suicide attempts, reduced anxiety and depressive symptoms and improved social skills, well-being, and emotional self-efficacy. Thus, youth sport was seen as a vehicle to develop positive social behaviours, emotional well-being, and reduce the risk of psychological ill-being in youth (Eime et al. 2013). Based on a further 162 studies, Poitras et al. (2016) examined the relationship between physical activity and eleven health indicators in 5-17-year olds. Seven of these indicators were considered critical for good health (body composition, cardio-

metabolic biomarkers, physical fitness, behavioural conduct/pro-social behaviour, cognition, academic achievement, quality of life/well-being, and injuries) and were found to have a favourable relationship with physical activity.

While there is a large amount of evidence for the positive impact of youth participation in sport, it does not mean there is not a potential for negative outcomes. Fraser-Thomas, Côté, and Deakin (2007) suggest that participation in youth sport may, in some instances, bring about negative physical, psychological, and social outcomes. When considering the physical aspects, they suggest only two main negative outcomes: injury and eating disorders. There are more factors identified when examining the negative psychological aspects of sport. These include pressure to win, perceiving oneself to have poor abilities, and detachment from teams. These factors can lead to lower self-confidence and self-esteem. With regards to social development, the negative outcomes of sport are suggested to be acts of violence or aggression that have become acceptable in the sport environment along with poor sportsmanship.

To help protect against the potential negative outcomes of youth sport involvement, Fraser-Thomas, Côté, and Deakin (2007) have drawn on the National Research Council's eight features of development assets (NRC, 2002). In doing so they have outlined conditions under which positive youth development is most likely to occur in sport. For instance, youth sport environments should foster physical and psychological safety through clear and appropriate structure and qualified supervision. Further, skill-building opportunities ought to be provided through tactically structured design and coaching. In addition, youth sport programmes should facilitate positive social norms; however, Fraser-Thomas, Côté, and Deakin (2007) state that some programmes tend to promote masculinity, aggression, and

competition. Youth sport programmes must also be child-centred and promote empowerment and autonomy to enhance youths' sense of mattering. Finally, there is a need for youth sport programmes to integrate family, school and community and engender supportive relationships with parents and coaches so developmental assets may transcend sport into other contexts.

When evaluating the value and importance of youth sport on the development of children and adolescents the advantages appear to outweigh the disadvantages. Youth sport involvement can provide numerous development opportunities for all aspects of child development, be it physically, psychologically, socially or academically. Thus, it has become important for researchers to understand the factors that contribute to more positive youth sport involvement and experiences. While these factors include social aspects such as creating effective youth sport environments (i.e., parent and coach behaviour), they also extend to the personality characteristics of young people, such as perfectionism.

Perfectionism – Current Understanding and Definitions

Burns (1980) brought perfectionism to the forefront of academic attention in his seminal work entitled "The perfectionists' script for self-defeat". While there were other existing paths of enquiry, Burns (1980) was the first to develop a measure of perfectionism. This measure was based on the understanding that perfectionism only refers to those individuals who "strain compulsively and unremittingly toward impossible goals and who measure their own worth entirely in terms of productivity and accomplishment" (Burns, 1980, p.34). In this way, Burns (1980) suggests that perfectionism is a unidimensional personality characteristic with maladaptive and dysfunctional qualities. Possible symptoms of perfectionism were also proposed, including being psychologically unprepared for not being the perfect product. This

lack of preparation to be imperfect is detrimental because it causes an individual's self-respect to diminish and a strong desire to remove themselves from circumstances in which they perceive they cannot be perfect. Burns (1980) also suggested that those with extreme perfectionistic beliefs may exhibit behaviour that is highly competitive, excessively achievement oriented, impatient, easily frustrated, and preoccupied. Further, perfectionists are often plagued by loneliness and disturbances in personal relations due to the anticipation of rejection at being judged as imperfect by others.

A large portion of Burns' (1980) argument revolves around the notion that perfectionists are commonly victims of distorted thinking. He states that perfectionists often appear to be dichotomous thinkers. Such that all activities can be considered as black or white. For example, a straight A student receiving a B and subsequently labelling themselves as a total failure. He suggests that this type of thinking causes perfectionists to fear mistakes and overreact to making them. He also states that perfectionists often make over generalisations. That is, once a mistake has been made, it will be made endlessly from that point; due to this, perfectionists believe that they have very little margin for error and as a result the belief that they must be perfect is reinforced. The use of 'should' systems, which involves adopting word such as 'should've' or 'must' also perpetuates perfectionistic thinking. When mistakes are made perfectionists tend to become trapped in negative feelings of guilt, which manifest into negative self-ruminations and a negative self-image; again, reinforcing the need to be perfect in all tasks they attempt. The field has grown exponentially from this seminal piece of work.

The idea that perfectionism can be understood in a unidimensional manner was re-proposed in a clinical setting just after the turn of the century (Shafran,

Cooper, & Fairburn, 2002). This prompted a quick response from Hewitt et al. (2003) who argued against this notion and detailed how a unidimensional approach was counterproductive to advancing the understanding of perfectionism in the field. Hewitt et al. (2003) made the case that perfectionism includes both self-related and interpersonal facets. They claimed that as perfectionism exists in humans who exist within a complex network of interactions, relations and transactions, it must be comprised of multiple dimensions to account for this.

The argument regarding perfectionism as multidimensional followed on from Burns' (1980) work and was reflected in the next major step in the development of perfectionism theory in the 1990s. Specifically, Frost and colleagues suggested that perfectionism was a multidimensional construct, which is contrary to Burns' (1980) suggestions. Frost et al. (1990) defined perfectionism as the desire to achieve high standards in performance, combined with overly critical evaluation of performance and proposed a number of additional dimensions. This approach was developed from reviewing the existing literature and the additional dimensions included: the perception of high parental expectations and criticism, the doubting of the quality of one's actions and a preference for order and organisation (Frost et al. 1990; Purdon, Antony, & Swinson, 1999). As a result of this new conceptual progress, Frost et al. (1990) created the Multidimensional Perfectionism Scale (F-MPS). This measure consisted of six subscales to measure different dimensions of perfectionism; these were called "personal standards", "doubts about actions", "parental expectations", "organisation", "concern over mistakes" and "parental criticism".

Soon after this version of the F-MPS was published, Stoeber (1998) published a modified version of the F-MPS, which reduced the number of subscales from six to four. Stoeber (1998) suggested that due to the increasing popularity of

this measure within clinical research and personality psychology, a close inspection was warranted to ensure it was performing at its optimal state. The results of Stoeber's study resulted in a reformulation of the subscales. Stoeber (1998) suggested that concern over mistakes and doubts about actions should be combined to create one factor, as should parental expectations and parental criticisms. This resulted in a new version of the F-MPS with only four dimensions, which were named concern over mistakes and doubts, parental expectations and criticism, personal standards and organisation. The original version, however, remains the more commonly used.

Further support for the notion that perfectionism is a multidimensional construct was provided by Hewitt and Flett (1991). They identify three core dimensions; self-oriented perfectionism, other-oriented perfectionism and socially prescribed perfectionism. These three dimensions capture personal and/or social components of perfectionism. The difference between these dimensions is not the behaviour of an individual, but the object to whom the behaviour is directed (Hewitt & Flett, 1991). Self-oriented perfectionism, as its name suggests, is perfectionistic tendencies directed towards oneself. This involves setting exceedingly high standards and over-critically evaluating performance. Hewitt and Flett (1991) also state that this dimension involves a discrepancy between the actual self and the ideal self and an ongoing conflict between striving to attain perfection while simultaneously striving to avoid failures, which can be associated with depressive affect.

Conversely to self-oriented perfectionism, other-oriented perfectionism involves the perfectionistic expectations and beliefs individuals hold for others around them, be that teammates, colleagues or coaches. Those with high levels of

other-oriented perfectionism are thought to hold unrealistic standards for ‘significant others’, place importance on others being perfect and be overly critical in the evaluation of others’ performances. Hewitt and Flett (1991) suggest that their behaviour is essentially the same as for self-oriented perfectionism, however the behaviour is directed outwards as opposed to at oneself. It is suggested that this dimension can include elements of a lack of trust, feelings of hostility towards others and other-directed blame, along with interpersonal issues such as cynicism and feelings of being lonely. The third dimension proposed by Hewitt and Flett (1991) is socially prescribed perfectionism, which captures the perceived need to be perfect and attain expectations set by significant others. Essentially socially prescribed perfectionism is the perception that others impose perfectionism on oneself. Moreover, it is suggested that this typically results in a range of negative consequences since standards are perceived as being excessive and uncontrollable.

Hewitt and Flett (1991) subsequently developed another measure of perfectionism, which differs to the F-MPS as it acknowledges that Frost et al. (1990) focused primarily on the internal, non-social aspects of perfectionism. Hewitt and Flett’s (1991) measure include both personal and social dimensions of perfectionism concurrently. This process involved five studies, each designed to create and establish the validity of the new measure; the Hewitt and Flett Multidimensional Perfectionism Scale (HF-MPS). These studies demonstrated that the HF-MPS has a reliable set of items to represent all three dimensions, is valid, and stable over time. The findings also supported the idea that a multidimensional approach is warranted when assessing perfectionism and suggest that perfectionism is a relatively fixed personality trait.

The Higher Order Model of Perfectionism

Since the development of the two multidimensional perfectionism scales, a higher order (or two-factor) model of perfectionism has emerged. The higher order model takes into account the conceptual and statistical overlap between the F-MPS and HF-MPS (Hill, 2016) and offers an organising framework in which to understand two broader dimensions of perfectionism. These broader dimensions are commonly referred to as perfectionistic strivings and perfectionistic concerns. Perfectionistic strivings capture the dimensions of perfectionism related to striving for perfection and setting extremely high standards for performance (e.g., personal standards and self-oriented perfectionism; Stoeber, 2012). Perfectionistic concerns capture those dimensions regarding the concerns over making mistakes, fear of negative evaluation by others, and the discrepancy between an individual's expectations and actual performance (e.g., concerns over mistakes, doubts about actions, and socially prescribed perfectionism; Stoeber, 2012). There are existing reviews which focus on the relationships that perfectionistic strivings and concerns have with other health and performance-based criteria and their desirable/undesirable outcomes. However, the most comprehensive and recent was a meta-analysis by Hill, Mallinson-Howard, and Jowett (2018).

The meta-analytical review by Hill, Mallinson-Howard, and Jowett (2018) found that perfectionistic strivings were related to mixed (adaptive and maladaptive) achievement goals (e.g., task oriented, where individuals believe competence is exhibited by mastering a task or ego oriented, where competence is demonstrated by relative ability when compared to others; Duda, 1989), motivation regulations, emotion, well-being and better athletic performance. On the other hand, perfectionistic concerns were related to mostly maladaptive achievement goals,

motivation regulations, emotion, and well-being and was unrelated to performance (Hill, Mallinson-Howard, & Jowett, 2018). This meta-analysis, among other reviews and studies, also considered residual perfectionistic strivings and concerns, which pertain to the effects of perfectionistic strivings and concerns on the outcome variable when accounting for the statistical overlap between perfectionistic strivings and concerns. However, this approach may not provide as much insight into perfectionism as hoped as it is commonly accepted that perfectionistic strivings and concerns exist in all individuals to varying degrees. Thus, in terms of real-world application, the results of studies which consider the partial forms of perfectionistic strivings and concerns may not be highly applicable. Such complexity of perfectionism has led to multiple theoretical models aimed at illustrating the intricacies and consequences of the varying extent to which dimensions of perfectionism exist within individuals.

The Tripartite Model of Perfectionism

There are two primary theoretical frameworks which attempt to illustrate the relationships between combinations of perfectionistic strivings and perfectionistic concerns and their various outcomes. These are named, the tripartite model and the 2 × 2 model of perfectionism. The tripartite model was constructed in 2006 by Stoeber and Otto, who built upon the work of Parker (1997). To clarify the different dimensions used, they provided definitions prior to describing the structure of their model. They stated that, for their purpose, perfectionistic strivings were associated with positive characteristics and so labelled as healthy, while perfectionistic concerns were associated with negative characteristics and labelled as unhealthy. Their model proposes three potential combinations of perfectionistic tendencies. Those with high strivings and low concerns are classified as healthy perfectionists,

those with high strivings and high concerns are classified as unhealthy perfectionists, and those with low strivings, regardless of their levels of concerns, are identified as non-perfectionists.

A conceptual framework which encompassed both dimensional and group-based conceptions of healthy, unhealthy, and non-perfectionism was then produced and examined via a literature review (Stoeber & Otto, 2006). The dimensional approach saw perfectionistic strivings and perfectionistic concerns as two independent dimensions. The group-based approach formed two groups which were labelled healthy perfectionists and unhealthy perfectionists. During their review, Stoeber and Otto (2006) found that when overlap between strivings and concerns were accounted for, 10 out of the 15 studies classified as using a dimensional approach were found to be in support of perfectionistic strivings being associated with positive characteristics. When studies that used a group-based approach were analysed, 12 of the 20 included provided positive evidence for healthy perfectionism being associated with positive characteristics. It was also found that healthy perfectionists have higher levels of self-esteem, social integration, and academic adaptation, along with lower levels of anxiety, depression, and defensiveness when compared to unhealthy perfectionists (Stoeber & Otto, 2006).

Whilst support for the tripartite model has been found it is not without criticism. The tripartite model classifies anyone with low strivings, regardless of concerns, as a non-perfectionist. According to Gaudreau and Thompson (2006) this is problematic because the presence of high perfectionistic concerns with low perfectionistic strivings may provide further insights into the costs associated with perfectionism. In addition, the labelling of subtypes as healthy and unhealthy has raised concern as nothing is inherently adaptive or maladaptive (Hill, 2016). Thus,

Gaudreau and Thompson (2006) have suggested that the tripartite framework would benefit from some clarification. They also state that the within-person combinations of perfectionistic strivings and perfectionistic concerns are potentially of more interest than the subtypes themselves. Their critique led to the formulation of an alternative 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010).

The 2 × 2 Model of Perfectionism

The 2 × 2 model of perfectionism builds on the tripartite model's theoretical position by eradicating healthy and unhealthy perfectionism labels and modifying non-perfectionism into two subtypes, which they propose to be etiologically and functionally distinct. In order to illustrate this, four subtypes of perfectionism (i.e., within-person combinations of perfectionistic strivings and concerns) are proposed. Each subtype is relative to the individual and can be considered comparatively more or less adaptive than the other three subtypes in the model, so to better represent the relative adaptive or maladaptive nature of and relationships between perfectionism dimensions.

To understand the 2 × 2 model of perfectionism, the four subtypes and the accompanying hypotheses must first be considered. The first subtype 'non-perfectionism' should be circumscribed to those with coexisting low levels of both perfectionistic concerns and perfectionistic strivings. These individuals are not typically experiencing the potential effects of perfectionistic strivings or concerns. The second subtype, titled 'pure personal standards perfectionism' captures those individuals with low levels of perfectionistic concerns but high levels of perfectionistic strivings. Gaudreau and Thompson (2010) identify that this subtype is at the centre of debate as to the healthy or unhealthy nature of perfectionistic strivings. Because of this, they provide three hypotheses which each consider a

separate point of view regarding the nature of perfectionistic strivings. The first hypothesis had three facets, hypothesis 1a stated that a subtype of pure personal standards perfectionism is associated with better psychological adjustment compared to non-perfectionism. Hypothesis 1b stated the opposite of this, a subtype of pure personal standards perfectionism is associated with poorer psychological adjustment compared to non-perfectionism. While hypothesis 1c stated the null hypothesis of the previous two in that these two subtypes of perfectionism do not significantly differ in terms of psychological adjustment.

The third subtype is 'pure evaluative concerns perfectionism' and is used to capture those individuals with high perfectionistic concerns and low perfectionistic strivings. This is one of the significant differences between the 2 × 2 model and the tripartite model. The tripartite model (Stoeber & Otto, 2006) would classify these individuals as non-perfectionists. These individuals exhibit a non-internalized need to be perfect, mostly derived from the external environment and perceived pressure to be perfect from significant others (Gaudreau & Thompson, 2010). This led the authors to hypothesis 2, which suggests that a subtype of non-perfectionism would be associated with better outcomes than pure evaluative concerns perfectionism.

The final subtype of this model is the 'mixed perfectionism' subtype. This encapsulates the individuals with high levels of both perfectionistic concerns and perfectionistic strivings and differs to the category of 'unhealthy perfectionism' in the tripartite model which did not account for varied levels of perfectionistic strivings. Within this subtype, individuals perceive pressure from significant others to be perfect while also internally striving to be perfect themselves. As a result of this, the 2 × 2 model provides two further hypotheses which the tripartite model does not. Hypothesis 3 states that a subtype of mixed perfectionism should be associated

with relatively better outcomes than a subtype of pure evaluative concerns perfectionism. While hypothesis 4 states that a subtype of mixed perfectionism should be associated with worse psychological adjustment compared to a subtype of pure personal standards perfectionism.

While the model has often been utilised in sport and support has been found for its suppositions and four hypotheses (e.g., see Gaudreau, 2016), it was met with some constructive criticisms from Stoeber (2012). Stoeber (2012) highlighted hypothesis 2 as the key element to the 2 × 2 model as it directly challenges the tripartite model regarding what unhealthy perfectionism is. However, other aspects were deemed as being problematic (Stoeber, 2012). It was first highlighted that some of the hypotheses in the 2 × 2 model are contradictory (Stoeber, 2012). Hypothesis 1a and 1b directly contradict each other, and 1c simply offers the null hypothesis. It was also suggested that the model is not parsimonious in the sense that there are too many assumptions than necessary for the theory to be complete. In an attempt to correct this, Stoeber (2012) suggested removing hypothesis 3, with the argument that hypothesis 2 implies the statement made in hypothesis 3, while also removing 1c as it is a null hypothesis and therefore untestable with no information lost through its removal.

Stoeber (2012) then aimed to address the contradictory hypotheses 1a and 1b. He suggested that contradictory hypotheses cannot co-exist in the same model if the model is to be consistent. Therefore, he proposed that two separate models of the 2 × 2 ought to be created, each accommodating one of the hypotheses. The final suggestion was to remove the notion of ‘subtypes’ and replace this terminology with different ‘combinations’ of perfectionistic strivings and perfectionistic concerns in order to avoid confusion with typology terminology. In response, Gaudreau (2013)

argued these suggestions were premature due to the model's early development at that point. He suggested that all hypotheses should remain as the model was in its infancy, and the hypotheses were all required to account for any moderating effects that future studies using the 2 × 2 model could possibly account for.

Gaudreau (2013) further stated that the 2 × 2 model was created with a perspectivist approach, in which the model was proposed as an open-ended system which had the potential for boundary conditions to be included at a later date when the field had reached a point where this would be possible. In response to the issue raised by Stoeber (2012) regarding the use of the term 'subtype', Gaudreau (2013) responded by suggesting the issue is a mere matter of personal preference but acknowledges the benefits of using a term such as 'within-person combinations of evaluative concerns and personal standards perfectionism' (p.352). Following this by stating that the term 'subtypes' cannot be interpreted as known subgroups or discernible categories such as an individual's sex, and that regardless of the expression used, the operational definition and meaning behind each should be made clear. Based on these counterpoints, the 2 × 2 model of perfectionism has largely remained as first proposed and been the forefront of theory development and recent knowledge regarding perfectionism in sport.

In a recent reanalysis of studies, using the 2 × 2 model as a theoretical and empirical framework, Hill et al. (2018) provided support for the efficacy of the model in sport, dance, and exercise. Across the 63 studies that were included in the reanalysis, the strongest and most consistent support was found for hypotheses 2 and 4. Hypothesis 1a was also supported more often than hypothesis 1b or 1c, while hypothesis 3 received the least amount of support (Hill et al. 2018). Support for the 2 × 2 model included its utility in profiling dancers when examining their burnout and

motivation (Nordin-Bates et al. 2017), in adolescent physical education students when examining their physical self-concept, life-satisfaction, and physical condition (Mendez-Gimenez et al. 2014), and physical education performance trajectory (Gaudreau et al. 2019).

In 2017, Hill and Madigan also reviewed literature pertaining to the 2 × 2 model in sport and dance and found that, when compared to the tripartite model, there was greater empirical support for the suppositions and hypotheses of the 2 × 2 model. Overall, the 2 × 2 model of perfectionism is a more useful guideline for the measurement and examination of perfectionism when compared to the tripartite model due to its inclusion of an extra configuration of perfectionism that allows for the inclusion of individuals that do not demonstrate high perfectionistic strivings but do show high perfectionistic concerns. As such, it forms the basis for the proposed model in the present study.

Perfectionism –Trait or Domain Understanding in Sport

In addition to a shift in the preferred models used to understand perfectionism in sport, there is some debate regarding whether it should be conceptualised at domain, as opposed to trait, level (Hill, 2016). One of the first research articles to examine perfectionism in the sport domain was produced by Hall, Kerr and Matthews (1998). The article aimed to examine the contribution of multidimensional perfectionism and achievement goals to pre-competitive anxiety. The findings suggest that there is a moderate correlation between multidimensional perfectionism and ego orientation. Also, ego orientation was significantly correlated with many of the perfectionism subscales, Concern over mistakes, Parental criticism, Personal standards and Parental expectancies. Meanwhile, a task orientation showed a small but significant relationship with personal standards. The findings of this study show

that cognitive anxiety was predicted by overall perfectionism scores, and that concern about making mistakes was central to an athlete's cognitive anxiety. The authors state that perfectionism underpins cognitive anxiety for performance and that those elements of perfection considered to be neurotic (concern over mistakes and doubts about action) were the most valuable predictors of cognitive anxiety. From this point, perfectionism gained more attention when being considered within the sport domain and research began to examine if there was rationale for it to be considered separately between domains.

In 2002, Dunn, Causgrove-Dunn and, Syrotuik examined the relationship between perfectionism and goal orientations in sport. In doing so, they first acknowledged that both existing versions of multidimensional perfectionism scales (Frost et al., 1990; Hewitt & Flett, 1991) were created for use in a clinical setting. As a result, they adapted the F-MPS specifically for the sport domain. To do so, they excluded the two subscales 'doubts about actions' and 'organisation'. They posed that athletes may read items such as 'I am a neat person' and question the validity and relevance of the questionnaire. Simultaneously, eight new items were designed to relate to the competitive sport environment. These were categorised under two new subscales, 'coach expectations' and 'coach criticism'. Many of the original items from the F-MPS were also modified to be specific to the sport domain (e.g. I hate being less than the best at things in my sport).

Five high level Canadian football teams, containing a total of 174 athletes took part. These teams contained the best high school football players in the nation at the time of testing, representing a high standard of competitive athlete. This study provided initial evidence that perfectionism, in a sport context, is also a multidimensional construct. Further to this, it suggests that ego goal orientation

correlates with the maladaptive aspects of perfectionism, those regarding the need to avoid failure, being overly critical when evaluating performance and often feeling inadequate in their performance. Whereas task goal orientation was correlated with the adaptive aspects of perfectionism, setting high personal standards and motivation to strive for the best they can possibly be. This study provided the field with the first sport-specific measure of perfectionism, the sport multidimensional perfectionism scale (SMPS), to enhance the quality and domain-specificity of future research on perfectionism in sport.

The development of a sport-specific scale furthered debate at the time regarding whether perfectionism is a global personality trait or if perfectionistic tendencies alter when considered across different domains. Dunn, Gotwals, and Causgrove-Dunn (2002) directly addressed this debate by conducting an exploratory study in which they collected data for student-athlete's global perfectionism, their sport-specific perfectionism and academic perfectionism. They state that these domains were selected due to their prevalence in past research and have previously been suggested as areas for further exploration. This study utilised a sample made up of 133 male (M = 21.59 years) and 108 female (M = 21.44 years) participants from a Canadian university. It may be important to consider that all participants played team sports within the university as this may represent different levels of perfectionism in facets measured, such as other-oriented perfectionism and socially prescribed perfectionism, when compared to the results from those who play in individual sports. The initial data analysis displayed a significant difference in results from male and female participants, due to this, the rest of analyses were conducted with separate samples of males and females. Dunn, Gotwals and Dunn (2002) report that there were significant differences between domain-specific perfectionism and global

perfectionism, because of this, they suggest that future research should consider the domain in which they wish to examine perfectionism and do so within the context and social values that reside in the target environment.

The construction of this early domain specific instrument brought about the development of the Multidimensional Inventory of Perfectionism in Sport (MIPS, Stoeber et. al. 2006). This is a sport specific instrument to measure perfectionism which captures within-person and social components of perfectionism. The MIPS captures perfectionistic strivings, concerns, and perceived pressure from parents, coaches and teammates, acknowledging the importance of social aspects of perfectionism in a sporting context. It has become one of the most reliable means of capturing domain-specific perfectionistic strivings and concerns, as well as parental and coach pressures in sport (see Madigan, 2016).

Overall, this section has highlighted the back and forth debate existing within the perfectionism literature and how the concept has developed as numerous measures have been created, each progressing on the previous, to best capture the phenomena. As we currently understand, perfectionism is a multidimensional construct consisting of multiple dimensions and facets, which also has implications globally and, in a domain specific sense. The development of these scales, regardless of the model adopted, has allowed for research to explore the influences perfectionism has on a variety of outcomes such as mental health and performance both within and outside youth sport.

Perfectionism, Psychological Health, and Performance

Multiple systematic reviews have recently examined the relationships between perfectionism, psychological health, and performance. Outside of sport, many studies have shown that both perfectionistic strivings and concerns may be

related to suicide ideation and attempts, narcissism, social anxiety, and paediatric eating disorders (Smith et al. 2018; Smith et al. 2016; Newby et al. 2017; Johnston et al. 2018). There have also been some proposed performance benefits. Research focussing on if aspects of perfectionism can be adaptive in nature began to emerge in the late 1990's primarily in the academic domain, with performance being defined as grade point average or test scores. This area of research suggests that perfectionistic strivings are often correlated with increased performance, but not perfectionistic concerns (Accordino, Accordino & Slaney, 2000; Beiling, et al. 2003; Stoeber & Rambow, 2007).

This line of enquiry was soon explored within the context of sport, and similar findings were observed. It was found that perfectionistic strivings do not undermine competitive performance but suggest that they are associated with several goal orientations that aid in the athlete's ability to perform to their maximum potential (Stoeber, Uphill, & Hotham, 2009). This, coupled with the findings of Stoll, Lau, and Stoeber (2008) who found that perfectionistic strivings may enhance performance over repeated trials, suggests that perfectionism may not be wholly maladaptive and have some adaptive qualities, at least in terms of performance.

As alluded to earlier, the most recent and comprehensive meta-analytical review regarding perfectionism in sport attests to similar findings (Hill, Mallinson-Howard, & Jowett, 2018). In their review of 52 studies/datasets, there was a combined total of 361 reported effect sizes capturing the relationship between perfectionism and criterion variables. The variables recorded throughout this review were motivation, well-being and performance, along with gender, age, sport type and the subscales used to measure perfectionism. They found that perfectionistic strivings were characterized by a mixture of task and ego goal orientation, intrinsic,

identified, introjected and external motivation regulation, self-confidence and cognitive anxiety, and better athletic performance.

Perfectionistic concerns, on the other hand, were associated mostly with maladaptive ego-oriented achievement goals, introjected, external and amotivation and cognitive and somatic anxiety and was unrelated to performance. From these findings they suggest that perfectionistic strivings are rather complex and at this point in the development of understanding we are unable to tell their precise implications for athletes. It appears that perfectionistic strivings may in some specific contexts carry some benefits for athletic performance. However, with the notion that strivings are related to motivational and psychological vulnerability, it may not be adaptive over a prolonged period of time when taken out of a performance context and considered in terms of motivation, health, and well-being. Thus, it is important to understand what contributes to the development of perfectionism.

The Development of Perfectionism

Burns (1980) initially posed that perfectionism may be a learnt trait. In particular, perfectionism may be learnt from having perfectionistic parents. He theorized that due to a perfectionistic parent's self-critical nature, they personalize the child's successes or difficulties and perceive them to be an indicator of their own ability as parents. This subsequently leads to their self-esteem being reliant on the child's success and so pressure is placed on the child to avoid failure in the hope that this will provide self-validation that they are a good parent. This results in a child beginning to believe that mistakes lead to a loss of acceptance, which is thought to lead to them internalizing this and striving for perfection and the avoidance of

mistakes in the future; which as Burns suggests, ‘perpetuates itself easily’ and is unlikely to be associated with adaptive consequences.

A social-psychological developmental model. In 2002, Hewitt et al. proposed a developmental framework for perfectionism which accounted for six different aspects that combine to place pressure on an individual to be perfect (socially prescribed and self-oriented perfectionism). This framework approached perfectionism with a social-psychological stance and placed an emphasis on the role of social agents in the development of, and reinforcement of perfectionism. These may be culture, peers, occupation or coach factors, but a particularly large emphasis is placed on the role parents play in the development and reinforcement of perfectionism in a child. They utilize four developmental pathways to illustrate the diverse influence parents have on the aetiology of perfectionism which, due to the domain-specificity of perfectionism, Appleton and Curran (2016) have adapted to the sport domain.

The first pathway, named the social learning model, describes the child’s tendency to want to be like their parents. Through which children imitate their parents and therefore the perfectionism that their parents display on a day to day basis. Flett et al. (2002) suggest that children idealise their parents and believe that their parents are the “perfect parent” and that this is where the need to imitate rises from. Appleton and Curran (2016) state that there is a substantial amount of evidence for this model, however there is currently little knowledge about which parent a child chooses to imitate, or if it is both. Regarding this, there are multiple theories that aim to explain the phenomena; the first being the primary caregiver theory. This theory suggests that a child typically imitates the parent with whom they have the most contact with during their development. Often, this has been found to be the parent of

the same sex as the child. It has been found that a daughter's self-oriented perfectionism is positively related to their mother's, but not father's, perfectionism. A similar case was found where a son's self-oriented perfectionism reflected that of their father but was negatively correlated with their mother (Vieth & Trull, 1999).

The second theory that may explain the social learning model is the same sex theory. Within which the hypothesis suggests that children model the perfectionistic tendencies of the parent of the same-sex while simultaneously rejecting the perfectionistic tendencies of the opposite-sex parent. This hypothesis appears to be well supported in the general perfectionism literature in both quantitative and qualitative studies. Support for the same-sex model has not been as readily provided in sport. Appleton, Hall and Hill (2010) recruited 302 mothers and their athletic child and 259 fathers and their athletic child. Separate regression analyses were conducted for mother-child and father-child dyads and showed that an athlete's perception of their parent's self-oriented perfectionism was the sole positive predictor of their own. The child's perceptions were also the strongest predictor of their own perfectionistic tendencies when considering other-oriented perfectionism and socially prescribed perfectionism. However, they also found that the association was not limited to the same-sex parent. Therefore, the findings suggest that a child may imitate either of their parents to gain characteristics to enhance their own development.

The second pathway used to illustrate the role parents play in the development of perfectionism is the social expectations model. This model describes the way in which children develop perfectionism because of extreme parental expectations and conditional acceptance. The general perfectionism literature provides support for the social expectations model, and that it may be applicable to the sport domain since parental expectations are typically positively correlated with

dimensions of perfectionism; hence the inclusion or parental expectations in multiple measures of perfectionism (Appleton & Curran, 2016). Appleton and Curran (2016) highlight the importance of a study published by McArdle and Duda (2004) who found, using cluster analysis, that parental expectations and criticism were particularly important to the development of higher levels of concern over mistakes, which is a potentially more debilitating dimension of perfectionism.

The social expectations model also suggests that if parents display their other-oriented perfectionism around the home and in the direction of their children then the children are likely to internalize this sense of conditional self-worth to the point where it manifests into self-oriented perfectionism. Appleton, Hill and Hall (2010) have found that a parent's other-oriented perfectionism is a positive predictor of their child's socially prescribed perfectionism, which lends some credence in sport to this model's explanation of the development of self-oriented perfectionism and suggests multiple mediators and interwoven pathways (Appleton & Curran, 2016).

The third pathway, the social reaction model, is very similar to the social expectations model. It takes the themes of high expectations and conditional approval and couples it with the exposure to a harsh family environment (Appleton & Curran, 2016). Flett et al. (2002) suggest that the term, harsh family environment, encapsulates many aspects such as physical abuse, psychological mistreatment, withdrawal of love, exposure to shame and a chaotic and unpredictable family environment. The overlap between the social expectations model and the social reaction model comes about since both models examine parental behaviours and attitudes directed towards their child. The difference between the two, is that parenting style can vary in terms of warmth, acceptance and approval. For example, the social reaction model suggests that those parents who set high standards for their

children, but are simultaneously accepting of mistakes and respond with encouragement and use them as a learning method, are more likely to harbour a more adaptive pattern of achievement striving in their child. This contrasts to those parents who set exceedingly high standards but are overly critical of performance and lack acceptance when evaluating their child's performance. Children exposed to this harsher parental climate are particularly vulnerable to the development of perfectionism as they internalize their parent's exposure and perceive that their self-worth is contingent on their parent's acceptance, for which they must perform perfectly.

Appleton and Curran (2016) identify that in the general perfectionism literature, there is an indirect link being established between affectionless controlling parents and their child's perfectionism. As Appleton and Curran (2016) state, Baumrind (1971,1991) suggested that authoritarian parents are highly controlling and non-responsive to their children, this is characterised as affectionless and controlling. In contrast, authoritative parents are also highly demanding but are substantially less controlling and accepting of their children's performance. Flett, Hewitt and Singer (1995) found positive correlations between socially prescribed perfectionism and parent's authoritarianism, while it has also been found that other perfectionism dimensions show associations with perceptions of authoritarian parenting styles (Neumeister, 2004; Kawamura, Frost & Harmatz, 2002). Parenting style can have a mediating effect on the way they influence their children with regards to perfectionism. It has been suggested that over-controlling and over-protective parenting styles have an association with perfectionistic tendencies and that parenting styles may explain the transmission of perfectionism from one

generation to another (Kawamura, Frost & Harmatz, 2002; Sapieja, Dunn & Holt, 2011).

The fourth and final pathway proposed by Flett et al. (2002) is the anxious rearing model. This model represents the parents who are preoccupied with mistakes and the potentially negative consequences of those mistakes. They suggest that these anxious parents are often on the "lookout" for mistakes and the potential for errors that may pose a threat as mistakes are considered to be unfavourable. Appleton and Curran (2016) identify that this theory is relatively under-researched, however they highlight a study from Appleton, Hall and Hill (2011) which does identify a relationship between the parent-initiated motivational climate and perfectionistic cognitions. However, this only provides indirect evidence for this theory as it considers parent-initiated motivational climate and links the ego-oriented aspect of this to anxious rearing due to the preoccupation with ensuring mistakes are avoided.

Overall, Hewitt et al.'s (2002) framework highlights the potential impact that parents can have on a child during their development with specific focus on the development of perfectionism. Perfectionism may develop in an individual through any of these four pathways and therefore parents must be careful during the process of raising a child. However, parents are not the only social agent that may influence the development of perfectionism in children. In an organised sport setting, coaches have a large amount of contact time with children and therefore also have potential to contribute to the development of perfectionism through the climate they create and their coaching behaviours. Appleton, Hall and Hill (2011) identify that coaches are likely to have an influence on athletes' perfectionistic cognitions due to their provision of performance expectations for athletes. They also identify that coaches are now considered a significant influencer due to the inclusion of coach related

items in perfectionism scales, namely the SMPS (Dunn et al. 2002) and the MIPS (Stoeber, Otto & Stoll, 2006).

Coaches' expectations and pressure form part of the socially prescribed dimension of perfectionism, which is logical when considering the context of sport, within which athletes spend large amounts of time with their coaches. Appleton, Hall and Hill (2011) found that the coach-created performance climate, a climate in which athletes perceive coach recognition and evaluation is centred around ability, the absence of mistakes and in which team mates compete in order to gain the coach's approval, is predictive of an athlete's perfectionistic cognitions. This is thought to be since athletes are consistently striving to present the ideal self and minimise mistakes in order to gain the coach's approval to be selected for teams and starting positions.

Ommundsen et al. (2006) also found that coaches play a significant role, in conjunction with parents, in influencing the quality of the sporting experience for youth athletes. This was also the case when coaches emphasised comparison and the demonstration of high-quality performance and resulted in youth soccer players believing less in their capabilities, worrying about their performance and perceiving a less friendly atmosphere within their team. They found that this coach climate was conducive to perfectionistic tendencies which may have detrimental impacts on the youth sport experience. Given this, parents and coaches as social agents should be examined fully with regard to their ability to influence the youth sport experience and their role in the development of perfectionism in youth athletes.

The relationship between coach pressure and sport-specific perfectionism was recently examined in a longitudinal study for the first time (Madigan et al. 2019). It was found that coach pressure to be perfect positively predicts increases in both perfectionistic strivings and concerns over time. The findings suggest that suggest

that the social expectations pathway may also extend to coaches and not just parents alone. The authors pose that this may be due to the large amount of time athletes and coaches spend together in a sport setting. Therefore, this frequency and duration of interactions in a sport setting may be important in conjunction with the notion that coaches are often deemed to be legitimate sources of information for athletes, resulting in their opinions holding large significance for athletes. At a cross-sectional level, this study also provided evidence that both pressure from parents and coaches are positively correlated to both perfectionistic strivings and concerns. It is against the backdrop of both parents and coaches being important contributors to the development of youth athlete's perfectionism that the current study and a potential new approach to examining social agents in the development of perfectionism is set.

A Potential New Approach to the Development of Perfectionism in Youth Sport: The 2 × 2 Model of Pressure to be Perfect

It has often been suggested that significant others play a key role in the childhood development of perfectionism (Appleton & Curran, 2016). However, there are very few studies examining the relationships between these parties, such as parents and coaches, and perfectionism. While there are many theories discussing potential avenues for this to occur, there is currently no existing model to test theories regarding the interactive effects of parental and coach pressure, two of the most influential stakeholders in youth sport, when examining the development of perfectionism in youth athletes (Appleton & Curran, 2016; Madigan et al. 2019). The existence of such a model could potentially allow for future research to focus on testable hypotheses, aid in future theorising and provide a model to compare results of similar studies in order to develop the current understanding of perfectionism development with reference to pressure.

This brings about the proposal of a potential new 2 × 2 model of pressure to be perfect. Based upon the existing and well researched 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010), the new model substitutes the two higher order dimensions of perfectionism (perfectionistic strivings and concerns) with coach pressure and parent pressure (Figure 1). The proposed new model presents four conditions, 'No Pressure,' 'Pure Parent Pressure,' 'Pure Coach Pressure' and, 'Mixed Pressure'. These four conditions aim to capture the different within-person combinations of parent and coach pressure a child may experience in youth sport. No Pressure poses as the proposed neutral condition. Individuals in this condition experience low levels of both coach and parent pressure. Pure Parent Pressure represents those individuals who perceive high levels of parent pressure and low levels of coach pressure. Pure Coach Pressure captures those who perceive high levels of coach pressure with low levels of parent pressure. Finally, Mixed Pressure represents those who simultaneously perceive high levels of both parent and coach pressure.

Much like in Gaudreau and Thompson's (2010) 2 × 2 model of perfectionism, the proposed 2 × 2 model of pressure to be perfect assumes that parent pressure and coach pressure may have an interactive effect. What this means in terms of the development of youth athlete's perfectionism is that first they may be experiencing parental pressure at home and in the sport domain (Appleton & Curran, 2016). This pressure may then be exacerbated in the sport domain through the coach's pressuring behaviours (Madigan et al., 2019); thus, strengthening the development of any perfectionistic tendencies. Though this is somewhat speculative, parents and coaches have often been considered simultaneously in models predicting various outcomes in youth such as self-esteem, performance anxiety and motivation (Harwood & Swain,

2002; O'Rourke et al. 2014; Smoll et al. 2007). The model also assumes that the two proposed conditions Pure Parent Pressure and Pure Coach Pressure are relative. Thus, it is likely that individuals experiencing these subtypes will perceive some pressure from both parties but one significantly more. It is the relative absence of one of the proposed sources of pressure that makes these two subtypes less problematic than Mixed Pressure. However, in line with previous theoretical pathways, models, and empirical evidence, the presence of high levels of one of the proposed sources of pressure would likely make them more problematic than experiencing 'No Pressure' (Appleton & Curran, 2016).

The Present Study

While existing literature does exist on the role parents and coaches play in the development of perfectionism in athletes, most recently Madigan et al. (2019), there remain some gaps in this literature base. The first is the lack of testable, refutable hypotheses. Like the production of the 2 × 2 model of perfectionism, the present study provides the first theoretical model which houses hypotheses that may be tested within specific populations for pressure and perfectionism. The present study does this in the youth sport environment. The present study also addresses a different age demographic to recent literature. Recent studies have utilized older participants, such as Madigan et al. (2019) where the mean age of participants was 17.50 years. The present study focuses on a younger sample of high-school athletes to build upon extant research. Simultaneously producing a picture of the involvement of social agents at different developmental stages of youth athletes. Finally, the present study contributes further to the growing literature base examining the development of perfectionism in youth athletes, providing further evidence to possibly be considered when designing future parent and coach education.

The aim of the present study was to test a new 2 × 2 model of pressure to be perfect in the development of perfectionism in youth sport (see Figure 1). Similar to the 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010), the present study uses four testable hypotheses in order to provide a potential basis for future theorising, interpretation of future findings and provide an initial model to compare findings to across studies aiming to explore similar phenomena. Hypothesis 1 has been proposed in order to examine the relationship between No Pressure and Pure Coach Pressure and predicts that Pure Coach Pressure will result in higher levels of perfectionistic strivings and concerns when compared to No Pressure. The rationale for this was based on Appleton, Hall and Hill (2011) who suggest that coaches have the power to influence the development of perfectionism, so pressure from this social agent may be more of a contributing factor compared to experiencing no pressure. Hypothesis 2 was based upon a similar rationale. In most literature regarding the influence of social agents, parents have been alluded to as a common source of the development of perfectionism (Appleton & Curran, 2016). Therefore, hypothesis 2 proposes that Pure Parent Pressure will predict higher levels of perfectionistic strivings and concerns than No Pressure.

The final two hypotheses consider the effect of Mixed Pressure and its relative relationship with Pure Coach Pressure and Pure Parent Pressure. As the 2 × 2 model of pressure to be perfect assumes there would be an interaction between parent and coach pressure in which high coach pressure is likely to exacerbate any negative effects of high parent pressure, mixed pressure is likely to be the most problematic condition. Thus, hypothesis 3 was thus built on the notion that Mixed Pressure will result in higher levels of perfectionistic strivings and concerns than

Pure Parent Pressure. Hypothesis 4 similarly states that Mixed Pressure will result in higher levels of perfectionistic strivings and concerns than Pure Coach Pressure.

Four hypotheses

1) No Pressure will be associated with lower levels of perfectionistic strivings and concerns than Pure Coach Pressure.

2) No Pressure will be associated with lower levels of perfectionistic strivings and concerns than Pure Parent Pressure.

3) Mixed Pressure will be associated with higher levels of perfectionistic strivings and concerns than Pure Parent Pressure.

4) Mixed Pressure will be associated with higher levels of perfectionistic strivings and concerns than Pure Coach Pressure.

	Low Parent Pressure	High Parent Pressure
Low Coach Pressure	No Pressure (Low coach pressure/Low parent pressure)	Pure Parent Pressure (Low coach pressure/High parent pressure)
High Coach Pressure	Pure Coach Pressure (High coach pressure/Low parent pressure)	Mixed Pressure (High coach pressure/High parent pressure)

H1 H2 H3 H4

Figure 1. The 2 × 2 model of pressure to be perfect.

Method

Participants

Participants were 159 (62 males; 90 females; 7 did not report their gender; *M age* = 14.21 years, SD = 1.27 years; range = 11-18 years) competitive youth athletes recruited from schools and sports teams across the United Kingdom. Participants competed in 21 sports, the most common being track and field (*n* = 46), soccer (*n* = 25) and rowing (*n* = 15). The highest level that athletes had participated in was international (*n* = 4), national (*n* = 32), county (*n* = 27), club (*n* = 75), school (*n* = 10) and unknown (*n* = 11). On average, participants had been playing their sport for 5.12 years (SD = 3.12 years).

Procedure

The present study adopted a non-experimental, cross-sectional design to test the hypotheses of the newly proposed 2 × 2 model of pressure to be perfect in youth athletes (see Figure 1). Youth athletes were recruited if they were aged 11-18 years and competing in an individual or team sport in a UK secondary school or community sports club. This is because the vast majority of adolescents at this age are living at home, as opposed to a boarding school, and therefore have a large amount of contact time with their parents/guardians when compared to those over 18 years of age. Children younger than 11 years were not recruited as the readability tests of the instruments used indicated that it would not be suitable for children of this age (Flesh reading ease test = 61.3, Flesch-Kincaid grade level test = 8.5).

Following ethical approval from York St John University's research ethics committee (Appendix A), official contact was made with gatekeepers (e.g., sport club chairperson or school head teachers) of schools or clubs that had athletes who

met the sample criteria. An e-mail that included a formal letter outlining the aims of the study, what would be required of participants, and concluded with inviting the school or club to be involved in the study, was sent to establish gatekeeper consent (see Appendix B). In cases where the gatekeeper was willing to allow their school or club to be involved in the study, they completed the relevant form with a signature for formal records to be kept. Upon the completion of this stage, it was then necessary to contact the parents of the youth athletes at the school or club. Parental consent was required before any contact with athletes could be made. This involved a teacher, coach, or the lead researcher distributing a parental information sheet, which included an overview of the project and the aims, what participants would be asked to do, and an opt-out slip for parents to return should they wish their child to not take part in the study. Parents were provided with at least one week from receiving this information sheet to request their child to be opted-out of the study before the athletes were invited to participate (see Appendix C).

Following the establishment of parental consent, data collection could then begin within the relevant school or club at a time convenient for them. The youth athletes received a briefing from the lead researcher that included an overview of the project and the aims, along with an opportunity for the researcher to answer any questions from potential participants. For those willing to take part, athlete assent was requested. The participants were then invited to complete a demographics section. This was followed by a perfectionism and pressure questionnaire.

Instruments

Multidimensional Inventory of Perfectionism in Sport (MIPS). The MIPS (Stoeber, Otto & Stoll, 2006; Stoeber et al. 2007) was used to measure

perfectionistic strivings, perfectionistic concerns, parental pressure to be perfect, and coach pressure to be perfect. The present study used the four subscales: striving for perfection during training/competition, negative reactions to imperfection during training/competition, perceived pressure from coach, and perceived pressure from parents. The first two subscales, striving for perfection during training/competition and negative reactions to imperfection during training/competition comprise five-items each, for example, “I strive to be as perfect as possible” and “I get completely furious if I make mistakes”. Multiple studies have demonstrated that the five-item scales for capturing striving for perfection and negative reaction to imperfection show satisfactory reliability and validity, along with being reliable indicators of perfectionistic strivings and concerns (Stoeber & Madigan, 2016). The scales for pressure were both comprised of eight-items and featured items such as “my coach expects my performance to be perfect” and “my parents demand nothing less than perfection from me”.

Participants were asked to read the statements and subsequently indicate to what degree each statement characterised their attitudes in their sport, responding on a scale of 1 (strongly disagree) to 5 (strongly agree). They were informed that there are no right or wrong answers. Prior to the parental pressure subscale, participants were asked to think about the parent they identified as being most important in their sport when answering. The adopted structure utilizing a five-point scale follows the suggestions of Madigan’s (2016) confirmatory analysis of the MIPS.

The MIPS was selected as a suitable instrument for the present study for multiple reasons. Multiple studies affirming both the striving for perfectionism and negative reactions to imperfection scales to be reliable and valid indicators of perfectionistic strivings and concerns have recently been published (Stoeber &

Madigan, 2016; Madigan, 2016). Secondly, as Stoeber and Madigan (2016) highlight, the scales capturing perceived pressure from coaches and parents use the same number of items and parallel wording. This allows for scores to be directly comparable and can therefore be used to test if athletes perceive differing amounts of pressure from one group and the effects these have on the perceived pressure to be perfect. Finally, since its production multiple studies have utilised it in their methodology, and by selecting it for the present study it shall provide further evidence for its use and add to the existing literature base utilising this measure (e.g., Madigan et al. 2019; Stoeber et al. 2007; Stoeber et al. 2008; Madigan, Stoeber & Passfield, 2017).

Data analysis

There were multiple strategies utilized to analyse the data. Analyses were conducted in IBM statistic SPSS 25.0 and Microsoft Excel. The first stages of analysis followed the recommendations of Tabachnick and Fidell (2014) for preliminary data screening, highlighting missing data and identifying potential univariate and multivariate outliers and acting accordingly. Secondly, descriptive statistics, Cronbach's alpha coefficients and Pearson's bivariate correlations were calculated in order to examine the initial relationships between the perfectionism and pressure variables. In order to interpret the magnitude of these relationships, Cohen's (1988) descriptors were used to categorise *r* values into small (.10), medium (.30) and large (.50).

Following the recommendations of Gaudreau (2012), the first of the main analyses conducted were moderated hierarchical regression analyses. First, the predictor variables (parent pressure and coach pressure) were centred and added to the first step of the regression model. In the second step of the regression model, the

interaction between parent pressure and coach pressure (i.e., parent pressure * coach pressure) was added. Two of these analyses were conducted; one with perfectionistic strivings as the outcome variable and one with perfectionistic concerns as the outcome variable. Where no significant interaction was found, multiple regression analyses were conducted in accordance with Gaudreau's (2012) methodological note. This methodological note suggests that when no significant interaction is found, it may be common for a model to be deemed irrelevant. However, once the interaction term has been dropped, multiple regression analyses may be conducted using uncentered predictor variables (i.e., coach pressure and parent pressure). The main effects derived from multiple regressions can then be converted to into simple slopes, precited values, and effect sizes using four equations. The first equation $\hat{Y}$ of no pressure = Intercept + (B_{PP} * low PP) + (B_{CP} * low CP) predicts the Y value for No Pressure. The second equation $\hat{Y}$ of Pure parent pressure = Intercept + (B_{PP} * high PP) + (B_{CP} * low CP) predicts the Y value for Pure Parent Pressure. The third equation $\hat{Y}$ of Pure Coach Pressure = Intercept + (B_{PP} * low PP) + (B_{CP} * high CP) predicts the value for pure coach pressure. The fourth equation $\hat{Y}$ of Mixed pressure = Intercept + (B_{PP} * high PP) + (B_{CP} * high CP) predicts the value for Mixed Pressure (Gaudreau, 2012, p.30). Effect sizes are then calculated by taking the difference between predicted values for each subtype of perfectionism and dividing this by the standard deviation of the outcome variable (Gaudreau, 2012).

The simple slopes and effect sizes derived from the main effects are then used to test the hypotheses of the 2 × 2 model (Gaudreau, 2012). This is because these simple slopes, and their particular slope or gradient, provide the information required to examine the hypotheses, rather than the significance of the interaction itself. Gaudreau (2012) has provided nine graphs outlining which of the model's

hypotheses can be supported based on the significance of the main effects, direction of the relationship between predictor and outcome variable, and subsequent simple slopes. These nine scenarios are outlined in Figure 2 of Gaudreau's (2012; p.29) methodological note and provided the roadmap to compare the main effects from our multiple regression analyses and ascertain which of the model's hypotheses were supported or not. It is important to note that Gaudreau's (2012) compensatory model was initially conducted using positively laden outcome variables only; therefore, care was taken to adapt the scenarios provided by Gaudreau to the negatively laden outcome variables examined in this study (i.e., perfectionistic strivings and perfectionistic concerns).

Results

Preliminary analyses

Missing Values, descriptive statistics and internal consistency. Data were first screened to ensure that all values were within the expected range, in this case this was expected to be between 1 and 5. Once this was confirmed, means and standard deviations of each variable were checked to ensure they appeared to be plausible and there were no extreme cases, which would indicate a problem with the data set. Once these were found to be reasonable figures, missing values were addressed. However, the amount of missing data was low (i = 15). Missing responses were replaced with the mean of the complete responses associated with that subscale (ipsatised item replacement; Graham, Cumsille & Elek-Fisk, 2003). Next, Cronbach's alphas were computed for each variable which were all deemed satisfactory and are reported in full in Table 1.

Outliers.

The data were screened for both univariate and multivariate outliers, following the recommendations of Tabachnick and Fidell (2014). Univariate outliers were observed through the screening of *Z* scores. Upon the construction of variables from the data, any data point with a *Z* score greater than 3.29 was a potential univariate outlier. However, there were no points with a *Z* score exceeding this figure. Multivariate outliers were detected using Mahalanobis distance, this resulted in the removal of one case which had a Mahalanobis distance larger than the critical value of χ^2 (4) = 18.467, p = <.001. Upon the removal of this case the final sample comprised 159 youth athletes.

Bivariate correlations.

Upon the removal of potential outliers, bivariate correlations were calculated as presented in Table 1.

Table 1. *Descriptive statistics, Cronbach's Alphas, and Bivariate Correlations.*

Variable	1	2	3	4
1. Perfectionistic Strivings				
2. Perfectionistic Concerns	.67**			
3. Parent Pressure to be perfect	.48**	.59**		
4. Coach Pressure to be perfect	.36**	.46**	.62**	
M	3.44	2.90	2.13	2.36
SD	.94	.98	.91	.85
Cronbach's alpha	.83	.89	.95	.91

Note. $N = 159$. Sig ** $p < .01$

As illustrated in Table 1, all variables had positive, significant correlations and varied only in magnitude. The correlation between perfectionistic strivings and perfectionistic concerns was the highest with a large, positive and significant correlation ($r = .67$, $p < .01$). Perfectionistic strivings also had medium to large positive significant correlation with parent pressure ($r = .48$, $p < .01$) whereas coach pressure showed a medium positive significant correlation ($r = .36$, $p < .01$). Perfectionistic concerns had a medium to large positive significant correlation with coach pressure ($r = .46$, $p < .01$) and a large positive significant correlation with parent pressure ($r = .59$, $p < .01$). The two pressure variables themselves also shared a large, positive significant correlation with each other ($r = .62$, $p < .01$).

Moderated hierarchical regression analyses

First, a series of moderated hierarchical regression analyses were used to examine the relationships between coach pressure, parent pressure, and perfectionistic strivings and perfectionistic concerns. Following recommendations from Gaudreau (2012), a moderated hierarchical regression analysis was conducted for each of the outcome variables (i.e., perfectionistic strivings and perfectionistic concerns). In the first step (model 1) of each moderated hierarchical regression analysis, centred coach pressure and parent pressure were entered. In the second step (model 2), the interaction between coach pressure and parent pressure was included. The findings of each of these moderated hierarchal regression analyses are illustrated in Tables 2 and 3.

Table 2 – Results of moderated hierarchical regression of perfectionistic strivings and pressure variables.

	Model 1 (Step 1)			Model 2 (Step 2)		
	B	*SE*	*β*	*B*	*SE*	*β*
Parent Pressure	.39	.08	.42**	.37	.09	.40**
Coach Pressure	.09	.09	.01	.10	.09	.11
Interaction				.09	.08	.08
R^2		.24			.25	
F		24.45			16.77	

Note. ** $p < .01$

Table 3 – Results of moderated hierarchical regression of perfectionistic concerns and pressure variables.

	Model 1 (Step 1)			Model 2 (Step 2)		
	B	*SE*	*β*	*B*	*SE*	*β*
Parent Pressure	.53	.09	.49**	.52	.09	.48**
Coach Pressure	.18	.09	.015	.18	.10	.16
Interaction				.05	.09	.04
R^2		.60			.60	
F		43.83			29.19	

Note. ** $p < .01$

Based on Tables 2 and 3, there was no significant interactive effect of parent pressure and coach pressure when predicting either perfectionistic strivings or perfectionistic concerns. In line with Gaudreau's (2012) methodological note, these models were not further interpreted.

Multiple regression analyses

Due to the lack of significant interaction effects, multiple regression analyses were conducted with uncentred coach pressure and parent pressure as the predictor variables so to utilise Gaudreau's (2012) compensatory model for interpreting the model's hypotheses. The results of these multiple regression analyses are illustrated in Tables 4 and 5.

Table 4 - Results of multiple regression of perfectionistic strivings and pressure variables.

	B	*SE*	*β*	*T*	*p*	
Parent Pressure	.39	.08	.42	1.07	.01	
Coach Pressure	.09	.09	.10	4.77	.29	
R^2						.24
F						24.45

Table 5- Results of multiple regression of perfectionistic concerns and pressure variables.

	B	*SE*	*β*	*T*	*p*	
Parent Pressure	.53	.89	.49	6.04	.01	
Coach Pressure	.12	.09	.15	1.89	.06	
R^2						.36
F						43.83

Tables 4 and 5 show that parent pressure is a large, positive significant predictor of both perfectionistic strivings and perfectionistic concerns. On the other hand, coach pressure was not a significant predictor of either perfectionistic strivings or perfectionistic concerns. These models also accounted for a large amount of variance in perfectionistic strivings and perfectionistic concerns. The R^2 values show that a combination of parent pressure and coach pressure accounted for 24% of observed variance of perfectionistic strivings, while they accounted for 36% of observed variance of perfectionistic concerns in youth athletes.

Simple slopes analysis, predicted values, and effect sizes.

Due to the lack of a significant interaction effects, the main effects from the multiple regression analyses were used to calculate simple slopes, predicted values,

and effect sizes following Gaudreau's (2012) compensatory model. First, linear regression equations were used to calculate simple slopes and predicted values, using the four equations outlined in the method section. The resultant simple slopes and predicted values are outlined in Figures 2 and 3. The precited values were used to estimate effect sizes by calculating the difference between the predicted values then dividing by the SD of the outcome variable. The calculated effect sizes are presented in Table 6.

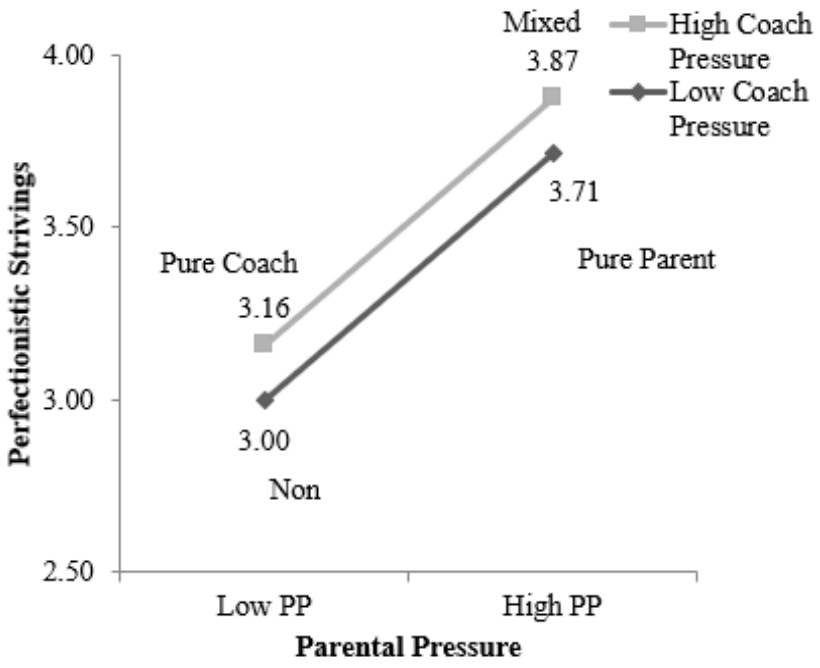

Figure 2 – Simple slopes and predicted values for perfectionistic strivings.

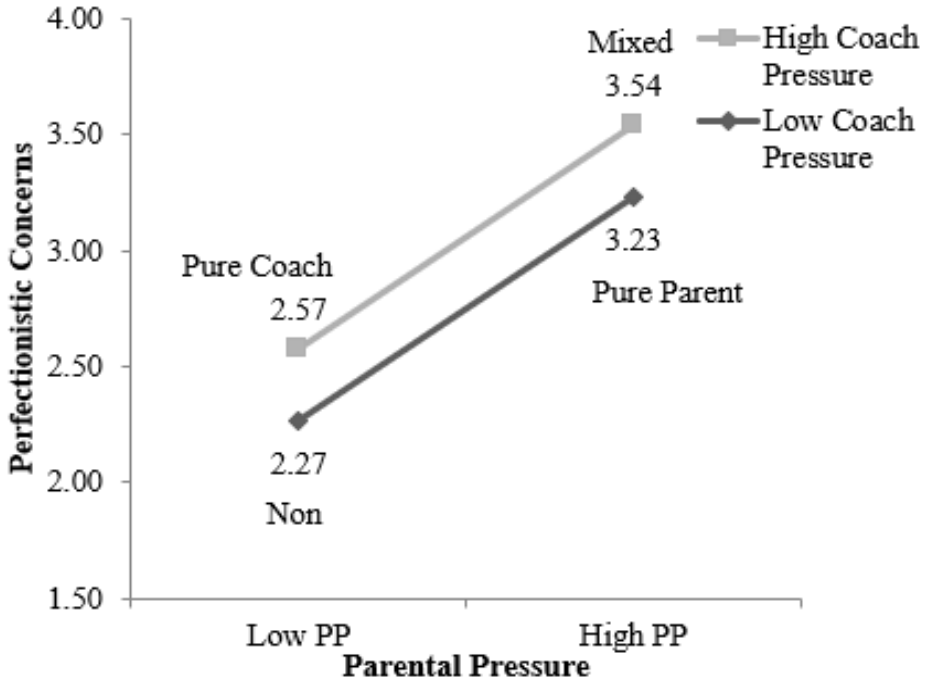

Figure 3 - Simple slopes and predicted values for perfectionistic concerns.

Table 6- Calculated effect sizes for perfectionistic strivings and concerns.

	Perfectionistic Strivings	Perfectionistic Concerns
No Pressure Vs. Pure Coach Pressure (Hypothesis 1)	-.19	-.31
No Pressure Vs. Pure Parent Pressure (Hypothesis 2)	-.85	-.99
Mixed Pressure Vs. Pure Parent Pressure (Hypothesis 3)	.19	.31
Mixed Pressure Vs. Pure Coach Pressure (Hypothesis 4)	.85	.99

The effect sizes can be interpreted using Cohen's *d* whereby small = .01, medium = .03, and large = .05 (Cohen, 1988) and interpreted in terms of the model's hypotheses. For perfectionistic strivings, small effects in the expected directions were evident for H1 (*d* = -.19) and H3 (*d* = .19) and large effects in the expected directions were evident for H2 (*d* = -.85) and H4 (*d* = .85). For perfectionistic concerns, H1 medium effects in the expected directions were evident for H1 (*d* = -.31) and H3 (*d* = .31) and large effects in the expected directions were evident for H2 (*d* = -.99) and H4 (*d* = -.99). Hypotheses were then considered supported or unsupported in accordance with scenario E (reversed for negatively laden outcome variables) of Gaudreau's methodological note (2012). This scenario proposes which hypotheses would be supported in the event of finding no interactive effect, whilst having a non-significant main effect for, in this case, coach pressure whilst also finding a positive, significant main effect for, in this case, parent pressure. Scenario E suggests that support may be found for hypotheses 2 and 4 while proposing that, despite small-medium effects, there is no support for hypotheses 1 and 3.

Discussion

The aim of the present study was to propose a new 2 × 2 model of pressure to be perfect in relation to the development of perfectionism in youth athletes. This model proposed four possible pressure conditions: No Pressure, Pure Parental Pressure, Pure Coach Pressure, and Mixed Pressure. The results suggest that there is no interactive effect between coach pressure and parent pressure in predicting perfectionistic strivings and concerns in youth athletes. High levels of parent pressure appear to be more important in predicting perfectionistic strivings and concerns in youth athletes than coach pressure.

The 2 × 2 Model of Pressure to be Perfect

Not all the proposed hypotheses surrounding the proposed 2 × 2 model of pressure to be perfect were supported. However, important findings were still made. Hypotheses 2 and 4 were both supported when considering both perfectionistic concerns and strivings. Thus, the findings provide some initial evidence that experiencing high levels of parent pressure is more problematic than experiencing no pressure from coaches or parents. Further, such negative effects of high parent pressure are seemingly amplified by the inclusion of high coach pressure as the mixed pressure condition was more problematic than experiencing high coach pressure alone. Thus, the findings suggest that parent pressure to be perfect could be central to understanding the development of perfectionism in youth athletes.

The results of the present study are aligned with a long line of enquiry into the origins of perfectionism in individuals and provide further evidence to support the notion that parents have a large influence in this process (Appleton & Curran, 2016). Burns (1980) initially suggested that perfectionism may be a learnt trait from having perfectionistic parents. The findings of the present study appear to align with

this notion. The findings also show comparisons to the social-psychological model proposed by Hewitt and colleagues (2002). This model places a large amount of emphasis on the role of social agents such as coaches and parents, as in the present study. Specifically focussing on how pressure to be perfect from these significant others may play a role in the development and/or the reinforcement of already existing perfectionistic tendencies. In terms of parent pressure, this also appears to be the case in the present study. However, at this point it is still not possible to say which of the four pathways within the social-psychological model are the most relevant, as the present study purely focused on the prediction of perfectionistic strivings and concerns in youth athletes as result of pressure (social expectations model). The specific environment in which such pressure was applied was not considered (Appleton & Curran, 2016) but future research may wish to consider the possibility of testing specific pathways from the social-psychological model.

The existing literature base regarding the influence of parents on the development of perfectionism in sport also displays similar findings to the present study. Sport parents who are perceived as critical of sporting performance and hold high achievement standards are more likely to have children with more concern over their mistakes than their peers (Ommundsen et al. 2006). This was the case for the current study as conditions in which high parent pressure was evident predicted higher perfectionistic concerns for youth. These findings add to the importance of other findings around the development of perfectionism in children outside of sport. With building evidence that parents may play one of the most important roles in the development of perfectionism in children in youth sport, further research should perhaps seek to explain why; for example, through consideration of parental

conditional regard (Appleton & Curran, 2016; Sapieja, Dunn & Holt, 2011; Appleton, Hall & Hill, 2010).

The results of previous research have identified that domain specific perfectionism may exist (Dunn, Gotwals & Causgrove-Dunn, 2005; Dunn, Causgrove-Dunn & Syrotuik, 2002). The data in the present study showed that parents were a significant predictor of both perfectionistic strivings and concerns within the sport domain, which has largely only been shown outside of sport before (Dunn, Causgrove-Dunn & Syrotuik, 2002). Many studies have identified that harsher parenting styles have a significant relationship with perfectionistic concerns, often considered a more maladaptive aspect of perfectionism across domains (Kawamura, Frost & Harmatz, 2002; Sapieja, Dunn & Holt, 2011; Hibbard & Walton, 2014). Combining this knowledge with the findings of the present study poses a worrying scenario. Within which parents are not only a potential primary influencer in the development of perfectionism in youth athletes but also that their individual parenting style may further influence that development within their children. Many research articles have highlighted that perceived parental expectations, criticism, pressure, and style are all significant predictors of higher levels of both perfectionistic strivings and concerns in the academic domain (Rice & Dellwo, 2002; Neumeister, 2002; McArdle & Duda, 2004) and so future research may also seek to examine this possibility in sport.

It is also worth noting the findings of the present study contrast with those of Madigan et al. (2019) who, in a similar study, found that coach pressure was a significant predictor of both perfectionistic strivings and concerns over time in sport and not parent pressure. Madigan, et al. (2019) conclude by stating that coaches may play a more important role in the development of junior athlete's perfectionism than

parents, but the results of the present study directly contradict this, by not supporting hypotheses 1 (no pressure will be associated with lower levels of perfectionistic strivings and concerns than pure coach pressure) and hypothesis 3 (mixed pressure will be associated with higher levels of perfectionistic strivings and concerns than pure parent pressure). There may be a reason why this was the case. The study published by Madigan and colleagues utilized three samples, each with a mean participant age of 17.2 years, 17.7 years, and 17.3 years, and small standard deviations (*SD* = 0.9, 0.8, 0.8). This means that their participant pool was noticeably older than the participant pool in the present study, which consisted of a mean age of 14.21 years (*SD* = 1.27), almost a three-year difference between the mean age of each of the samples.

This may be of importance due to the different stages of sport participation and parental involvement at these ages. Côté (1999) has discussed family involvement throughout the youth sport journey and talent development and the changes in familial priority in the lives of adolescents. Côté (1999) suggests that between ages 13 and 15 children are actively going through the specializing years, while after age 15 they are said to be in the investment years. These are two distinctly different stages of athletic development, which may partly explain the differences in where perceived pressure is being applied from. Madigan et al. (2019) acknowledge that at an older age, athletes may not perceive as much parental pressure, or hold altered perceptions of the importance of parental pressure, therefore reducing the influence this has on their perfectionistic tendencies which may go some way to explaining these differences in findings. Another factor that may reduce the amount of parental pressure experienced may be the introduction of peers as a source of influence. Danish, Taylor and Fazio (2003) suggest that coaches have the

ideal condition to create an environment conducive to positive development, simultaneously peers begin to replace parents as the most important source of influence, leading to the lack of concern about parental influence. Further to this, Lorenzo et al. (2009) suggested that athletes transitioning from junior to senior competition in basketball found that there was a large change in their relationship with their coaches, which may further help to explain the difference in results between the present study and those of Madigan et al. (2019).

Another potential reason for these different findings may be the nature of the study. While the present study employed a cross-sectional design, that of Madigan and colleagues used a longitudinal design. Longitudinal designs collect data over a long period of time and therefore are able to provide a more representative set of data. Longitudinal studies also allow for a sequence of events to be established; this would be particularly useful in research aiming to examine the development of a psychological characteristic such as perfectionism. Compared to the current cross-sectional study, such longitudinal designs may be more sensitive to immediate environmental factors such as the coach and whether they alter the youth sport experience over time (Ommundsen et al., 2006).

There is also a small amount of evidence to suggest that age may act as a moderating factor in terms of the development of perfectionism. It has been suggested that while there is little research to draw upon, there may be a case for the notion that the effects of perfectionism change across parts of the life span (Hill, Mallinson-Howard & Jowett, 2018). Hill, Mallinson-Howard, and Jowett (2018) have found that age acts as a moderating factor on eight occasions for five criterion variables, such as introjected regulation, perceived athletic ability and amotivation. However, they suggest that there is little evidence to draw upon to explain why this

may be the case. They speculate that it may be due to the naive optimism in young athletes along with the potential for the importance of winning to increase throughout adolescence. While the evidence for this is limited and requires further research, it is a potential explanation for the differences in findings between the present study and those of Madigan et al. (2019). Nevertheless, the contrasting findings of these studies provide room for further exploration as to the differing roles of parents and coaches at different phases of youth and adolescent development and the development of perfectionism.

Practical Implications

The present study provides a novel contribution to the existing literature base by proposing a new, testable model of pressure in regard to perfectionism and its potential origins in the youth sport context. Although perfectionism may have energising qualities for athletes, the findings from this study suggest that the means by which perfectionism may be developing in youth athletes is through extreme and conditional parental expectations. Previous research has demonstrated the potentially debilitating long-term effects for children who internalise such pressures (Hewitt et al. 2002). Thus, an important question for practitioners to answer is what interventions would be the most effective and feasible when aiming to reduce perfectionistic tendencies and the influence and internalisation of extreme social pressures in youth athletes.

One suitable intervention that may be of use in reducing perfectionistic concerns, in particular, may be cognitive behavioural therapy (CBT). Gustafsson and Lundqvist (2016) propose that CBT is one highly supported method of combatting perfectionistic tendencies in individuals. CBT revolves around the concept that behaviours are learned and therefore considered to be changeable into more adaptive

behavioural patterns. As well as this, CBT focuses on the idea that if an individual can understand their own problems, they can subsequently be their own problem solver. Gustafsson and Lundqvist (2016) suggest that a series of sessions must take place in order for CBT to work and prevent a relapse, this primarily revolves around changing an athlete's cognitions about certain aspects of their lives/performance and modifying them to represent more positive thoughts and ideas. While this would act as a treatment for perfectionism, it is time consuming and does not treat the root of the problem, being the influence of social agents, prior to the development of perfectionism.

This presents an issue for researchers and sport practitioners because it is very difficult to control what goes on behind closed doors in a family household setting where parents may or may not be aware of the extreme expectations they place on their children and the atmosphere they are creating around the home. This is where the present study may be linked to the work of Harwood and Knight (2015). Harwood and Knight (2015) propose six postulates of parenting expertise in sport, these include aspects such as parenting styles, levels of involvement and appropriate support. In the conclusion of this article, the authors suggest that parent education is of key importance when aiming to raise awareness of these issues and prevent maladaptive outcomes in sport. This may be a possible pathway for organizations to go about the prevention of perfectionism development at its core rather than relying on techniques such as CBT to treat it after it has developed. Education based interventions for parents in sport are not unheard of. Dorsch and colleagues (2017) found that an intervention including a sport parent guide and one 45-minute seminar designed to offer strategies for evidence-based parenting in youth sport had positive effects on parental involvement, the parent-child relationship, and a number of child

outcomes. While not specifically related to perfectionism, this study shows the potential utility of educational programmes for parents in youth sport.

Limitations and Future Directions

While the findings of the present study are important, they must be considered within the context of their individual strengths and limitations. The present study has some limitations regarding sample size, statistical power, and variability in the scores. In terms of sample size, while 159 is not particularly 'small' in terms of a cross-sectional study, it is when aiming to detect an interaction between two variables. To have a participant number closer to, or in excess of 200 participants would be desirable to detect interaction effects. Aligned with sample size is the notion of statistical power. If the power argument were set to .8 then, in accordance with the recommendations of Cohen (1988) for a moderated hierarchical regression analysis, a sample of 193 athletes would be required to detect a correlation coefficient of .2 at a significance of $p < .05$. Thus, the lack of detection of an interaction effect in either moderated hierarchical regression analysis in this study may be a consequence of an underpowered sample. In addition, the standard deviations for perfectionistic strivings and perfectionistic concerns showed a lack of variability in the scores of the current sample, which may also have impacted the ability of either moderated hierarchical regression to detect significant effects. Future research may wish to repeat the present study with a larger and more diverse participant sample in order to generate greater power and re-evaluate the efficacy of the proposed 2 × 2 model.

As Gaudreau (2012) highlights, there are also some limitations to the traditional use of moderated hierarchical regressions when testing a 2 × 2 model. The main argument here revolves around the notion that there are multiple types of

hypothetical outcomes that may be observable, but initially this was only the case if an interaction effect was detected (Gaudreau & Thompson, 2010). Douilliez and LeFerve (2011) have since suggested that a significant interaction is not a requirement of a 2 × 2 model as the hypotheses may still be supported without this. Gaudreau (2012) has demonstrated how this can be achieved through a compensatory model but this approach is not without its drawbacks. In particular, only certain combinations of hypotheses can be supported through translating main effects into simple slopes (Hill et al., 2019). Thus, potentially limiting the insights that may be gained into the effects of different combinations of pressure on perfectionistic strivings and concerns.

As previously mentioned, the present study is of a cross-sectional, correlational nature. Cross-sectional studies are useful for identifying initial relationships and proposing new models, as this study does. However, they only capture one specific time point in any one participants' life and therefore do not provide a lot of depth into a concept. The correlational nature of the present study also limits the ability for researchers to infer causality due to the inability to tell if exposure (to parent and coach pressure) occurred before, during or after the onset of the outcome, in this case perfectionism (Levin, 2006). It may be necessary that future research aiming to examine the relationship between pressure to be perfect and perfectionism uses a longitudinal design in order to establish a sequence of events and eliminate recall bias in participants (Carauna et al. 2015; Stoeber, 2014).

The present study also relied on the use of self-report measures. While it is difficult to quantify levels of perfectionism without using a self-report questionnaire, the present study also used self-report for perceived pressure. This poses an issue in that parents and coaches of participants in the present study may not actually be

overly pressurising, it may be that their children/athletes simply perceive this. Future studies may wish to collect actual data from parents and coaches regarding their behaviour within the youth sport context in order to gain a deeper knowledge into the importance of their actual behaviour compared to the perceptions of the youth athletes participating in the study. The amount of exposure of athletes to coaches and parents was also not captured through self-report or controlled for. This may be an important consideration for future research because without ascertaining how much exposure athletes have to social agents; it may be the case that parents were most influential simply because these youth athletes spent more of their time with them. Self-report measures may also be cause for limitation due to the potential for an individual to respond to questions while in a particular mood which may cause them to respond in a different way to their day to day average (Podsakoff et al. 2003).

The final limitation of this study is the results must be considered solely within the context in which data was collected. That being, youth sports teams in the United Kingdom. It has been suggested that variables may be influenced by social and cultural aspects such as socio-economic status and therefore results are not generalizable across other socio-economic areas, countries or contexts such as adult sport. Future research may wish to examine this phenomenon in other contexts.

Another avenue for potential future research may be to focus purely on parental pressure. As the findings of the present study find parents to be one of the most important factors when considering the development of perfectionism as a result of pressure to be perfect, it may be possible to create a model in which parental pressure is used as the main dependent variable. This may be done through the production of another 2 × 2 model in which the four ‘sub-types’ may be no pressure, pure father pressure, pure mother pressure and mixed pressure. This may

be useful to identify which, if either, parent is most influential and if there is an interactive effect between pressure from both the child's mother and father.

The present study suggests that parents are the most influential factor when considering pressure from social agents' contribution to the development of perfectionism. This directly contrasts with the findings of Madigan et al. (2019) who found that coaches were of larger importance. Future research may wish to provide more evidence to this area, while one potential avenue for future attention may be what causes the change in importance between parents and coaches. This may be of benefit when considering future interventions and at what stage the structure of these interventions must be altered to address the target issue, be that parent or coach pressure.

Conclusion

The present study proposed the first 2 × 2 model of pressure to be perfect in an attempt to provide evidence that parent and coach pressure may be contributing factors in the development of perfectionism in youth athletes. This study builds on previous literature and theoretical models proposed by Hewitt et al. (2002) who suggest that parents and significant others play a large role in the development of perfectionism in their social-psychological model.

With regards to the 2 × 2 model of pressure to be perfect itself, it was found that support for only hypotheses 2 and 4 existed. This information shows that the significant differences in levels of perfectionistic strivings and concerns were only apparent when levels of perceived parental pressure were different. It was also found that in the present study there was no interactive effect between parent and coach pressure, once again pointing to the importance of parental pressure. Hypotheses 1 and 3 were found to not be supported by the data, implying that coach pressure has

little to no effect on the development of perfectionism in youth athletes. These results provide evidence for the social-psychological model of Hewitt et al. (2002) and further highlight the importance of future research into the role parents play in the development of perfectionism in youth sport.

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Appendices

A. Ethics approval letter

York St John University,
Lord Mayors Walk,
York,
YO31 7EX

22nd January, 2019

York St John University Cross School Research Ethics Committee
(Health Sciences, Sport, Psychological and Social Sciences and Business)

Dear Dan,

Title of study: The relationship between perceived pressure and perfectionism in youth athletes.
Ethics reference: Flemming_22/01/2019
Date of submission:03/12/2018

I am pleased to inform you that the above application for ethical review has been reviewed by the Cross School Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Application for ethical approval form	22/01/2019
Responses to feedback	22/01/2019

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study.

Yours sincerely,

Nathalie Noret

B. Gatekeeper letter

Daniel Fleming

Sport MSc by Research

York St. John University

School of Sport

Lord Mayor's Walk

York

YO31 7EX

dan.fleming@yorksj.ac.uk

Dear Sir or Madam,

As part of my master's degree, I am completing a research project examining the relationship between perceived parental and coach pressure and child perfectionism in sport. I request your permission to use your school/organisation/club, etc. to complete my research study.

What does the study involve?

The study will involve children aged 11-18 (school years 7-13) completing a short questionnaire in which they will provide answers to questions about their own feelings towards perfectionism and perceived pressure placed upon them by their parents and coaches. Answers will be in the form of circling an answer on a scale, such as 'agree' or 'disagree'. This will allow for the analysis of these answers to provide an answer to the research question we are examining. It is hoped that you will allow access for myself to your school/club to recruit participants. I have included further information about the study in the accompanying Participant Information Sheet.

What happens with the study findings?

Only myself and my dissertation supervisor will have access to the information from this investigation. All information will be stored in line with the requirements of the General Data Protection Regulation (GDPR). Pseudonyms will also be used to protect the anonymity of all participants, people and organisations who take part in the study.

Who can I contact if I have any questions?

My details are at the top of the page. Alternatively, you can contact my supervisor:

Sarah Mallinson-Howard

s.mallinson-howard@yorksj.ac.uk

01904 624624 - 6154

If you have any concerns, queries or complaints regarding the research project please contact Nathalie Noret (Chair of the Cross-School Research Ethics Committee for Health Sciences, Sport, Psychological and Social Sciences and Business at York St John University) on 01904 876311 or n.noret@yorksj.ac.uk.

Thank you for taking the time to read this information.

Yours sincerely

Daniel Fleming

Sport MSc by Research, York St John University.

Please sign below if you are happy for me to complete my research in your school/club

I have read and understand the above information and **do give my consent** to this study taking place.

Print Name: …… Date: .....

Signature: .....

Participant Information Sheet for Gatekeepers

Name of school: School of Sport, York St John University
Title of study: The relationship between perceived parent and coach pressure and child perfectionism in sport.

Introduction

I would like to invite your school/club to take part in a research project examining the relationship between parent and coach pressure and child perfectionism in sport. Before you decide whether or not to take part, it is important that you understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with others if you wish. If there is anything that is unclear or if you would like more information, please contact me Daniel Fleming, postgraduate research student in the School of Sport, York St John University or my supervisor Sarah Mallinson-Howard, School of Sport, York St John University using the contact details on the following page.

What is the purpose of this investigation?

The aims of this investigation are to identify if and how parental and coach pressure relate to child athlete perfectionism. In conducting this investigation, I am trying to develop a model to illustrate this relationship, shape future research into how changes can be made so parents can best support their children in sport.

What will you do in the project?.

This study involves participants completing a questionnaire. This questionnaire will allow for a perfectionism profile to be built about each participant, the questionnaire will also include a subsection based around perceived parent and coach pressure, this will allow for data on perceived pressure to be collected and therefore allow for a relationship to be examined. The questionnaire will ask participants to circle an answer on a scale ranging from ‘never’ to ‘always’. The questionnaire has previously been used in sport research and has undergone a readability check to ensure that it is suitable for the age range being recruited.

Do you have to take part?

No. It is up to you to decide whether or not you would like your school/club to take part in this study, but your contribution would be greatly appreciated. You will not be treated any differently, whether you choose to take part, or decide not to do so. If participants from your school/club decide to take part, they may later withdraw from the study without giving a reason and without penalty.

Why have you been invited to take part?

Your school/club has been invited to take part in this project because it would provide access to many potential participants. This includes children aged 11-18 who take part in sport. Access to you school/club would allow for a large amount of data to be collected and would be greatly appreciated.

What are the potential risks to you in taking part?

There is minimal risk to taking part in this study, however to ensure no harm is caused there will be a link to a fact sheet and information video about perfectionism for children and/or parents to watch on the participant information sheet. Participants will have the right to withdraw from this project at any point, without giving a reason, by informing me (the researcher) via email that they wish to do so. Participants will be able to request that the information they have provided is removed from the study at any point until the data has started to be analysed. This means that they will be able to request that their data be removed from the investigation until four weeks (28 days) after the date that they took part in the study.

What happens to the information in the project?

Pseudonyms will be used for all children and any people or organisations that are mentioned in order to maintain anonymity. All data collected whilst conducting this investigation will be stored securely on the password protected OneDrive storage system [and password protected computer account], which is used for the storage of research data at York St John University, in line with the requirements of the General Data Protection Regulation The information collected whilst conducting this project will be stored for a minimum of 6 months.

Thank you for reading this information – please ask any questions if you are unsure about what is written in this form.

What happens next?

If the participant would like to be involved they will be required to read an information sheet and have their parent's read and sign a consent form on their behalf. The child will then be asked for formal assent before the process of data collection begins.

If they do not wish to be included in the project they will be thanked for their time.

If you are happy for your school/club to take part in this project, you will be asked to sign a consent form/letter in order to confirm this.

It is possible that the results of this research project will subsequently be published. If this is the case, appropriate steps will be taken to ensure that all participants and organisations remain anonymous.

If you do not want to be involved in the project, I would like to take this opportunity to thank you for reading the information above.

This investigation was granted ethical approval by the 3SR100 Dissertation Module Research Ethics Panel in the School of Sport at York St John University.

Researcher contact details:

Daniel Fleming School of Sport, York St John University, Lord Mayor's Walk, York, YO31 7EX. Email: dan.fleming@yorksj.ac.uk	Sarah Mallinson-Howard School of Sport, York St John University, Lord Mayor's Walk, York, YO31 7EX. Email: s.mallinson-howard@yorksj.ac.uk

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought, please contact:

Nat Noret

Chair of the Cross-School Research Ethics Committee for Health Sciences, Sport, Psychological and Social Sciences and Business,

York St John University,

Lord Mayors Walk,

York,

YO31 7EX.

Email: n.noret@yorksj.ac.uk

C. Parent information sheet and passive consent

Daniel Fleming

Sport MSc by Research

York St. John University

School of Sport

Lord Mayor's Walk

York

YO31 7EX

Dan.fleming@yorksj.ac.uk

Dear Parent or Guardian,

As part of my master's degree, I am completing a research project examining the relationship between perceived parental and coach pressure and child perfectionism in sport. I request your permission to use your school/organisation/club, etc. to complete my research study. I request permission for your child to take part in this study. The school/club is aware of the project and has agreed to allow me to conduct my research with them.

What does the study involve?

The study will involve children aged 11-18 (school years 7-13) completing a short questionnaire in which they will provide answers to questions about their own feelings towards perfectionism and perceived pressure placed upon them by their parents and coaches. Answers will be in the form of circling an answer on a scale, such as 'agree' or 'disagree'. This will allow for the analysis of these answers to provide an answer to the research question we are examining. Further information about the study is included in the accompanying Participant Information Sheet. Participation in this study is voluntary. Your decision whether or not to allow your child to participate is also voluntary. As well as your consent, your child will also be asked if they want to take part in the study. The project will be explained to your child in terms that they can understand.

What happens with the study findings?

Only myself and my dissertation supervisor will have access to the information from your child. Your child will be kept anonymous in any work that is produced from this research. All information will be stored in line with the requirements of the General Data Protection Regulation (GDPR). The study should not encourage conversations of a personal nature. If your child discloses any information that needs to be reported, the school/club's child protection policy will be used.

Who can I contact if I have any questions?

If you have any questions about this project, my contact details are included at the top of this page. Alternatively, you can contact my supervisor:

Sarah Mallinson-Howard

s.mallinson-howard@yorksj.ac.uk

01904 624624 - 6154

If you have any concerns, queries or complaints regarding the research project please contact Nathalie Noret, Chair of the Cross-School Research Ethics Committee for Health Sciences, Sport, Psychological and Social Sciences and Business, on 01904 876311 or n.noret@yorksj.ac.uk.

Thank you for taking the time to read this information.

Yours faithfully

Daniel Fleming

Sport MSc by Research, York St John University.

Please sign below, **only if you do not wish your child to participate** in the research described above.

I have read and understood the above information and **do not consent** to my child taking part in this research investigation.

Print Name: …… Date: .....

Signature: .....

Participant Information Sheet for Parents

Name of school: School of Sport, York St John University
Title of study: The relationship between perceived parent and coach pressure and child perfectionism in sport.

Introduction

Your child has been invited to take part in a research project examining the relationship between parent and coach pressure and child perfectionism in sport. Before you decide whether or not you are happy for your child to take part, it is important that you understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with others if you wish. If there is anything that is unclear or if you would like more information, please contact me Daniel Fleming, postgraduate research student in the School of Sport, York St John University or my supervisor Sarah Mallinson-Howard, School of Sport, York St John University) using the contact details on the following page.

What is the purpose of this investigation?

The aims of this investigation are to identify if and how parental and coach pressure relate to child athlete perfectionism. In conducting this investigation, I am trying to develop a model to illustrate this relationship, shape future research into how changes can be made so parents can best support their children in sport.

What will you do in the project?

This study involves your child completing a short questionnaire in which they will be asked to provide answers on a scale from 'never' to 'always' when considering statements about their own perfectionistic tendencies i.e. 'I feel the need to be perfect in everything I do' and parent/coach pressure i.e. 'my parents expect me to be perfect'. This will only occur at one time point and will take place within their school/club. There will also be a few demographic questions at the start which will require them to provide information like what sport(s) they play and how often they play.

Do you have to take part?

No. It is up to you to decide whether or not you would like your child to take part in this study, but their contribution would be greatly appreciated. Your child will not be treated any differently, whether you/they choose to take part, or decide not to do so. If you/they do decide to take part, your child may later withdraw from the study without giving a reason and without penalty.

Why have you been invited to take part?

Your child has been invited to take part in this project because they are in year 7-13 at school and take part in sport regularly.

What are the potential risks to you in taking part?

There is minimal risk to taking part in this study, however to ensure no harm is caused there will be a link to a fact sheet and information video about perfectionism for you and/or your child to watch/read provided. Your child will have the right to withdraw from this project at any point, without giving a reason. You can withdraw your child (or your child can choose to withdraw) from the project by informing me (the researcher) via email that they wish to do so. If they withdraw from the research, any words used by your child will be removed from the data that has been collected. They may request that the information they have provided is removed from the study at any point until the data has started to be analysed. This means that they can request that their data be removed from the investigation until four weeks (28 days) after the date that they took part in the study.

What happens to the information in the project?

Pseudonyms will be used for your child and any people or organisations that are mentioned in order to maintain anonymity. All data collected whilst conducting this investigation will be stored securely on the password protected OneDrive storage system [and password protected computer account], which is used for the storage of research data at York St John University, in line with the requirements of the General Data Protection Regulation The information collected whilst conducting this project will be stored for a minimum of 6 months.

Thank you for reading this information – please ask any questions if you are unsure about what is written in this form.

What happens next?

If you are happy for your child to take part in this project, you do not need to take any further action. However, if you do not want your child to take part in this project, please sign the accompanying letter and ask your child to return this to me, at their school/club.

It is possible that the results of this research project will subsequently be published. If this is the case, appropriate steps will be taken to ensure that all participants remain anonymous.

If you do not want your child to be involved in the project, I would like to take this opportunity to thank you for reading the information above.

This investigation was granted ethical approval by the 3SR100 Dissertation Module Research Ethics Panel in the School of Sport at York St John University.

Researcher contact details:

Daniel Fleming School of Sport, York St John University,	**Sarah Mallinson-Howard** School of Sport, York St John University,

Lord Mayor's Walk, York, YO31 7EX. Email: dan.fleming@yorksj.ac.uk	Lord Mayor's Walk, York, YO31 7EX. Email: s.mallinson-howard@yorksj.ac.uk

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought, please contact:

Nat Noret
Chair of the Cross-School Research Ethics Committee for Health Sciences, Sport, Psychological and Social Sciences and Business,
York St John University,
Lord Mayors Walk,
York,
YO31 7EX.

Email: n.noret@yorksj.ac.uk

D. Parent active consent

Please sign below and return to the student reception, **if you wish for your child to participate** in the research described above.

I have read and understood the above information and **consent** to my child taking part in this research investigation.

Print Name: …… Date: .....

Signature: .....

E. Athlete information sheet

Participant Information Sheet

Name of school: School of Sport, York St John University
Title of study: The relationship between parent and coach pressure and youth perfectionism in sport

Introduction

You have been invited to take part in a research project examining the relationship between pressure and perfectionism in sport. Before you decide whether or not to take part, it is important that you understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with others if you wish. If there is anything that is unclear or if you would like more information, please contact me, Daniel Fleming, Postgraduate research student in the School of Sport, York St John University. Or my supervisor Sarah Mallinson-Howard, School of Sport, York St John University using the contact details on the following page.

What is the purpose of this investigation?

The aims of this investigation are to identify if and how parental and coach pressure relate to child athlete perfectionism. In conducting this investigation, I am developing a model to illustrate this relationship, shape future research and provide information on how changes can be made so parents can best support their children in sport.

What will you do in the project?

This study involves participants completing a questionnaire. This questionnaire will allow for a perfectionism profile to be built about each participant, the questionnaire will also include a subsection based around perceived parent and coach pressure, this will allow for data on perceived pressure to be collected and therefore allow for a relationship to be examined. The questionnaire will ask participants to circle an answer on a scale ranging from 'strongly disagree' to 'strongly agree'. The questionnaire has previously been used in sport research and has undergone a readability check to ensure that it is suitable for the age range being recruited.

Do you have to take part?

No, you do not have to take part. It is up to you to decide if you would like to, but it would be greatly appreciated if you did. You will not be treated any differently if you chose to take part or decide not to do so. If you decide to take part now but later change your mind you are able to withdraw from the study without giving reason with no penalty.

Why have you been invited to take part?

You have been invited to take part in this project because you are at school in year 7-13 and play a sport which will allow us to gather information relevant to the project.

What are the potential risks to you in taking part?

There is very little risk for you participating in this study, however if you find your child is experiencing problems with their sport participation you can contact ChildLine using the

details below. If you do wish to learn more about perfectionism you can follow the links below to an information sheet and information video. You do have the right to withdraw from this project at any point, without giving a reason. You or your parents can withdraw you from the project by informing me (the researcher) via email that you wish to do so. If you withdraw from the research, any words used by you will be removed from the data that has been collected. You may request that the information you have provided is removed from the study at any point until the data has started to be analysed. This means that you can request that your data be removed from the investigation until four weeks (28 days) after the date that you took part in the study.

Childline contact information: 0800 1111; https://www.childline.org.uk/

For more information on perfectionism: https://ray.yorksj.ac.uk/id/eprint/2966/

What happens to the information in the project?

Pseudonyms will be used for yourself and any people or organisations that are mentioned in order to maintain anonymity. All data collected whilst conducting this investigation will be stored securely on the password protected OneDrive storage system [and password protected computer account], which is used for the storage of research data at York St John University, in line with the requirements of the General Data Protection Regulation The information collected whilst conducting this project will be stored for a minimum of 6 months.

Thank you for reading this information – please ask any questions if you are unsure about what is written in this form.

What happens next?

If you are happy to take part in this project, you will be asked to complete an assent form in order to confirm this.

It is possible that the results of this research project will subsequently be published. If this is the case, appropriate steps will be taken to ensure that all participants remain anonymous.

If you do not want to be involved in the project, I would like to take this opportunity to thank you for reading the information above.

This investigation was granted ethical approval by the Research Ethics Panel in the School of Sport at York St John University.

Researcher contact details:

Daniel Fleming School of Sport, York St John University, Lord Mayor's Walk, York, YO31 7EX. Email: dan.fleming@yorksj.ac.uk	**Sarah Mallinson-Howard** School of Sport, York St John University, Lord Mayor's Walk, York, YO31 7EX. Email: s.mallinson-howard@yorksj.ac.uk

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought, please contact:

Nat Noret
Chair of the Cross-School Research Ethics Committee for Health Sciences, Sport, Psychological and Social Sciences and Business,
York St John University,
Lord Mayors Walk,
York,
YO31 7EX.

Email: n.noret@yorksj.ac.uk

F. Athlete assent form

Child Assent Form

What is the purpose of the study?

The purpose of this study is to learn more about the relationship between pressure and perfectionism in sport.

What does the study involve?

The study involves you filling out a short questionnaire with questions about yourself, your parents and your coach. You will have to choose an answer on a scale from 'strongly disagree' to 'strongly agree' to each question.

Do I have to take part?

Your parents said it was ok, but I also need to ask you.

It is your choice whether you want to do this project – you do not have to.

It is ok if you decide that you do not want to be in the project.

If you choose to take part, you can stop at any time.

You don't have to answer any questions that you don't want to answer.

Your answers

This is not a test with right or wrong answers.

I am interested in your opinions and experiences.

I will record your answers.

You will not be named in any of my work, but if an incident needs reporting to help keep you safe, I will need to tell the school/club.

Contact information

My name is Daniel Fleming and I am a student at York St John University.

Email: dan.fleming@yorksj.ac.uk

If you agree to be in the project:

☐ I have either read or had this assent form read to me.

☐ I understand that I have been asked to be in a project about pressure and perfectionism.

☐ I have been asked if I have any questions about the project and these questions have been answered.

I agree to be part of this project.

Participant name (please print): _____

Researcher signature: _____

G. Athlete questionnaire

Athlete Questionnaire

Sex: …… Age: …… Sport: …….

The highest level I currently compete at is (please circle)

School Club County National International

The number of years I have played this sport is: …….

My main parent involved in my sport is: ……

Section A: Please read the following statements and select a number from 1 to 5 to indicate how you generally feel during sport.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

1.I strive to be as perfect as possible.	1	2	3	4	5
2.It is important to be to be perfect in everything I attempt.	1	2	3	4	5
3.I feel the need to be perfect.	1	2	3	4	5
4.I am a perfectionist as far as my targets are concerned.	1	2	3	4	5
5.I have the wish to do everything perfectly.	1	2	3	4	5
6.I feel extremely stressed if everything does not go perfectly.	1	2	3	4	5
7.After competitions/games/practice, I feel depressed if I have not been perfect.	1	2	3	4	5
8.I get completely furious if I make mistakes.	1	2	3	4	5
9.I get frustrated if I do not fulfil my high expectations.	1	2	3	4	5
10.If something does not go perfectly, I am dissatisfied with the whole competition/game/practice	1	2	3	4	5

Section B: Listed below are some statements regarding your coach. Please read each statement and decide how much you agree or disagree with each statement in relation to sport. If you have more than one coach, think about the coach that you spend most of your time with.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

1.My coach expects my performance to be perfect.	1	2	3	4	5
2.My coach criticizes everything I do not do perfectly.	1	2	3	4	5
3.My coach is dissatisfied with me if my performance is not top class.	1	2	3	4	5
4.My coach expects me to be perfect.	1	2	3	4	5

5.My coach demands nothing less than perfection of me.	1	2	3	4	5
6.My coach makes extremely high demands of me.	1	2	3	4	5
7.My coach sets extremely high standards for me.	1	2	3	4	5
8.My coach is disappointed in me if my performance is not perfect.	1	2	3	4	5

Section C: Please read the following statements and select a number from 1 to 5 to show how much you agree with each statement in relation to sport. When answering, please think about the parent you said was most involved earlier. There are no right or wrong answers.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

1. My parents expect my performance to be perfect.	1	2	3	4	5
2. My parents criticize everything I do not do perfectly.	1	2	3	4	5
3. My parents are dissatisfied with me if my performance is not top class.	1	2	3	4	5
4. My parents expect me to be perfect.	1	2	3	4	5

5. My parents demand nothing less than perfection of me.	1	2	3	4	5
6. My parents make extremely high demands of me.	1	2	3	4	5
7. My parents set extremely high standards for me.	1	2	3	4	5
8. My parents are disappointed in me if my performance is not perfect.	1	2	3	4	5

Section D: Listed below are a number of statements that identify how athletes view certain aspects of their competitive experiences in sport. Please read each of the statements carefully, and indicate the extent to which you personally agree or disagree with each statement.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

1.If I do not set the highest standards for myself in my sport, I am likely to end up a second-rate player/athlete.	1	2	3	4	5
2. Even if I fail slightly in competition, for me, it is as bad as being a complete failure.	1	2	3	4	5
3.My parents set very high standards for me in my sport.	1	2	3	4	5
4.I feel like my coaches criticizes me for doing things less than perfectly in competition.	1	2	3	4	5
5.In competition, I never feel like I can quite meet my parents' expectations.	1	2	3	4	5
6.I hate being less than the best at things in my sport.	1	2	3	4	5

7.If I fail in competition, I feel like a failure as a person.	1	2	3	4	5
8.Only outstanding performance during competition is good enough for my family.	1	2	3	4	5
9.I usually feel uncertain as to whether or not my training effectively prepares me for competition.	1	2	3	4	5
10.Only outstanding performance in competition is good enough for my coach.	1	2	3	4	5
11.My parents have always had higher expectations for my future in sport than I have.	1	2	3	4	5
12.The fewer mistakes I make in competition, the more people will like me.	1	2	3	4	5

13.I usually feel unsure about the adequacy of my pre-competition practice.	1	2	3	4	5
14.It is important to me that I be thoroughly competent in everything I do in my sport.	1	2	3	4	5
15.I feel like I am criticized by my parents for doing things less than perfectly in competition.	1	2	3	4	5
16.I think I expect higher performance and greater results in my daily sport-training than most players/athletes.	1	2	3	4	5
17.I feel like I can never quite live up to my coach's standards.	1	2	3	4	5
18.I usually have trouble deciding when I have practiced enough heading into a competition.	1	2	3	4	5

19.I feel that other players generally accept lower standards for themselves in sport than I do.	1	2	3	4	5
20.Prior to competition, I rarely feel satisfied with my training.	1	2	3	4	5

21.I should be upset if I make a mistake in competition.	1	2	3	4	5
22.In competition, I never feel like I can quite live up to my parents' standards.	1	2	3	4	5
23.My coach sets very high standards for me in competition.	1	2	3	4	5
24.If a team-mate or opponent (who plays a similar position to me) plays/performs better than me during competition, then I feel like I failed to some degree.	1	2	3	4	5

25.My parents expect excellence from me in my sport.	1	2	3	4	5
26.My coach expects excellence from me at all times: both in training and competition.	1	2	3	4	5
27.If I do not do well all the time in competition, I feel that people will not respect me as an athlete.	1	2	3	4	5
28.I have extremely high goals for myself in my sport.	1	2	3	4	5
29.I feel like my coach never tries to fully understand the mistakes I sometimes make.	1	2	3	4	5
30.I set higher achievement goals than most athletes who play sport.	1	2	3	4	5

31.I feel like my parents never try to fully understand the mistakes I make in competition.	1	2	3	4	5
32.People will probably think less of me if I make mistakes in competition.	1	2	3	4	5
33.My parents want me to be better than all other players who play my sport.	1	2	3	4	5
34.If I play well but only make one obvious mistake in the entire game, I still feel disappointed with my performance.	1	2	3	4	5
35.I rarely feel that my training fully prepares me for competition.	1	2	3	4	5
36.I rarely feel that I have trained enough in preparation for a competition.	1	2	3	4	5

37.On the day of competition, I have a routine that I try to follow.	1	2	3	4	5
38.I have and follow a pre-competitive routine.	1	2	3	4	5
39.I follow pre-planned steps to prepare myself for competition.	1	2	3	4	5
40.I follow a routine to get myself into a good mindset going into competition.	1	2	3	4	5
41.I develop plans that dictate how I want to perform during competition.	1	2	3	4	5
42.I set plans that highlight the strategies I want to use when I compete.	1	2	3	4	5

Thank you!