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**Review Article**

# SYSTEMATIC REVIEW ON THE IMPACT OF SPORT ON THE POSITIVE YOUTH DEVELOPMENT OF HIGH PERFORMANCE ATHLETS

## REVISÃO SISTEMÁTICA SOBRE O IMPACTO DO ESPORTE NO DESENVOLVIMENTO POSITIVO DE JOVENS ATLETAS DE RENDIMENTO A

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**RESUMO**
O objetivo do estudo foi realizar uma revisão sistemática sobre as pesquisas que analisaram o impacto do esporte em jovens atletas de rendimento, tendo como suporte teórico a abordagem do desenvolvimento positivo dos jovens. As buscas foram realizadas em 8 bases de dados e 13 artigos atenderam aos critérios de inclusão. Notou-se uma predominância de artigos publicados recentemente, em língua inglesa, com jovens de ambos os sexos e de diferentes esportes. As variáveis relacionadas ao treinador e ao atleta parecem ter impacto mais importante do que as da equipe. Foram observados mais benefícios pessoais do que sociais. Concluiu-se que o esporte de rendimento pode promover benefícios pessoais e sociais para jovens atletas. É necessária uma maior divulgação da abordagem do desenvolvimento positivo dos jovens no contexto do esporte de rendimento de diferentes países.
**Palavras-chave**: Psicologia do esporte. Desenvolvimento humano. Revisão sistemática.

**ABSTRACT**
This study aimed at carrying out a systematic review of the researches that have assessed the impact of sport on high performance young athletes by using the positive youth development approach as the theoretical support. The searches were conducted in 8 databases; 13 articles met the inclusion criteria. There is a predominance of articles recently published in English with young people of both sexes and from different sports. The variables related to the coach and the athletes seem to have a more impact than the team ones. More personal benefits than social ones were seen. It was concluded that high performance sport may promote personal and social benefits in young athletes. There is a need for further disclosure of the positive youth development approach in the context of high performance sport in different countries.
**Keywords**: Sport psychology. Human development. Systematic review.

## Introduction

Millions of young people are involved in sports worldwide, and this number provides a dimension of the importance this activity has on the lives of these adolescents[1]. Therefore, the impact of sport activities on youth development is a subject that has attracted the interest of researchers over the years[2].

Studies have shown contradictory results on this subject. Some have reinforced the benefits that sport experiences may bring to young people in physical, cognitive, emotional and social aspects[3,4], whereas others have presented an indicative of negative experiences in the same development domain[5,6].

These differences occur due to the numerous variables used in the studies[7,8], which seem to be influenced by the theoretical approach used[9]. Therefore, it is possible that the reviews which concentrate studies with the same theoretical support may facilitate the understanding of the different variables, in addition to contributing to the area state of the art.

Specifically in relation to the psychological and social benefits that children and adolescents obtain from participating in sport, Eime et al.[10] emphasized the positive youth

development approach (PYD) as the most employed one. Created by American psychologists in the 1990s,[7,11] such an approach had the purpose of giving a more positive connotation for adolescence, traditionally seen as a period of conflicts and difficulties[12]. However, considering that this period of life is positive, the environment in which young people are inserted must provide conditions to optimize their strengths[13].

Although the sport has been pointed out as a context with potential for PYD[4], no systematic reviews on the subject were found. There are conceptual reviews that treat sport as a structured supervised activity outside the school hours that focus on educational and recreational programs[11,14], but without specific information about high performance sport. Therefore, this study aimed at carrying out a systematic review on the researches that have assessed the impact of sport on high performance young athletes by using the PYD approach as the theoretical support.

## Methods

The search and selection of the articles were carried out by two researchers, independently, from February to March, 2014 in the following databases: Cochrane Library, LILACS, Medline Fulltext, PsycINFO, Pubmed, SPORTDiscus Fulltext, SciELO and Science Direct. The search terms included: 'positive youth development' and sport combined with the 'AND' operator. The inclusion criteria were these: (a) using the PYD approach as a theoretical reference; (b) having high performance athletes as subjects; (c) embracing the age group from 10 to 20 years old; (d) having been published between January, 1990 and December, 2013; and (e) being original, published in peer-reviewed scientific journal, either in English or Portuguese. The exclusion criteria included: (a) mentioning the PYD approach in only one part of the article, without using it as the theoretical reference in the introduction/discussion and methodology; (b) analyzing the physical activity, physical exercise, physical education or extracurricular or community activity programs with educational or recreational and non-competitive purposes; (c) being performed with the parents, coaches or sport administrators, without the involvement of the athletes; (d) being theses, dissertations, conferences, books, book chapters, abstracts, unpublished articles, review articles and those with validation of scales.

A hundred and fifty one (151) articles with the search terms combined were found. Out of this number, 81 were excluded because they were repeated or revised. An analysis of the title, abstract and keywords was carried out in 70 articles, from which 46 were excluded because they had involved the validation of psychometric scales, in addition to being carried out with students that had participated in educational or recreational sport programs, coaches, parents or sport organizers, without the presence of the athletes. Considering the 24 articles maintained, a review of the full texts was carried out, and 11 articles were excluded because they either had not used the PYD approach as theoretical support or they had not involved high performance athletes. Thus, 13 original articles were part of the systematic review.

The STROBE Statement (Strengthening the Reporting of Observational Studies in Epidemiology) translated by Malta et al.[15] was used for data analysis. It consists of 22 items on information that should be shown in the title, abstract, introduction, methodology, results and discussion of observational studies.

## Results

*General characterization of the studies*

All the articles (n = 13) were published between 2009 and 2013, with the majority being cross-sectional (n = 12, 92%) and with quantitative analyzes (n = 11, 85%). The Youth Experiences Survey 2.0 (YES) was the main instrument used to measure sport experiences (n = 5; 39%) and its version for the sport (Youth Experience Survey for Sport - YES-S; n = 4; 31%). The samples ranged from 19 to 510 athletes, from 9 to 22 years of age, of both sexes (n = 8; 61%), from different countries, with emphasis on Canada (n = 4, 31%). A little more than half of the articles (n = 7; 54%) were developed with more than one sport, with soccer being the most analyzed one (n = 7; 54%) (Table 1).

**Table 1.** Articles that used the positive youth development of high performance athletes.

| Reference | Objective | Design | Participants (n) | Origin | Age | Gender | Sport type | Instruments | Analysis | Main Results |
|---|---|---|---|---|---|---|---|---|---|---|
| Bruner et al.[32] | Assessing the relations among the sport type, interdenpendence and sport experiences. | Transversal | 212 | Canada | 14 to 17 years old | M | Individual and collective | YES and the adapted interdependence scale of task and result | Quantitative | The interdependence from the result was related with positive experiences. |
| Greenwood and Kanters[31] | Evaluating the relation among the ability level, motivational orientations, character and caring in a team. | Transversal | 230 | USA | 14 to18 years old | M | Collective | Measurement of character and caring; Perception of Success Questionnaire and measurement of perceived competence. | Quantitative | The greater orientation to task and low ego were related to the character and caring. The combined high ego and low task were negative. |
| Gould and Carson[22] | Exploring the connection between the athletes' perception on the coach's behavior and the development of life abilities. | Transversal | 190 | USA | Most subjects were over 18 years old (first and second year of college) | F/M | Individual and collective | Demographic data, YES, Coaching Behavior Scale for Sport, items on the coaches' behavior. | Quantitative | The competition strategies, establishing the goals, teaching the life abilities and positive support were related to positive experiences. |
| Gucciardi[26] | Investigating the contribution of the sport experiences for the mental toughness of cricket athletes. | Transversal | 308 | Australia | 13 to 18 years old | M | Collective | Cricket Mental Toughness Inventory and YES | Quantitative | Almost all the mental toughness components were associated to positive experiences. |

*Continued from Table 1...*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Harrist and Witt[23] | Exploring the coach and athletes' view on how the training goals and methodologies promote positive development. | Transversal | 3 coaches and 31 athletes | USA | 12 to 16 years old | F | Collective | Interviews, observations and focal groups. | Qualitative | Two goals were agreed: improving the sport abilities and developing life abilities. |
| Jones and Lavalle[33] | Exploring how the life abilities are defined, which athletes need them and the most important ones. | Transversal | 19 athletes, 10 coaches, 4 specialists in sport psychology and 5 undergraduate students. | United Kingdom | 15 to 22 years old | F/M | Individual and collective | Focal groups | Qualitative | Life abilities are a range of skills necessary for daily life; the social ones are the most important. |
| Jones and Parker[27] | Assessing the relation between mental toughness and the youth experiences | Transversal | 299 | United Kingdom | 19,48±1,30 years old | F/M | Individual and collective | Sport Mental Toughness Questionnaire YES | Quantitative | The positive sport experiences justified 13% of the mental toughness. |
| MacDonald et al. [25] | Comparing sport experiences and the motivational atmosphere of the athletes in view of the training/coach. | Transversal | 109 adolescents and managers of youth programs | Canada | 9 to 17 years old | F/M | Collective | Youth Sport Program Structure Survey, YES-S, Motivational Atmosphere Scale Youth for Sport. | Quantitative | The athletes of the coaches who had received training in their programs had a greater personal ability. |
| MacDonald et al.[29] | Investigating the role of the motivational atmosphere and enjoyment /fun for the athletes' personal development. | Transversal | 510 | Canada | 9 to 19 years old | F/M | Collective | YES-S, Sources of Fun in Youth Sport Questionnaire, Motivational Atmosphere Scale for Youth Sport | Quantitative | Enjoyment for Sport and atmosphere oriented to task - positive experiences. Atmosphere oriented to ego and competence - negative experiences. |

*Continued from Table 1...*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Strachan et al.[28] | Determining if the internal and external resources of development predict burnout and fun/enjoyment in athletes. | Transversal | 123 | Canada | 12 to 16 years old | F/M | Individual and collective | Developmental Assets Profile, Athlete Burnout Questionnaire and Sources of Enjoyment in Youth Sport Questionnaire. | Quantitative | The positive identity influences burnout decrease. Empowerment was related to enjoyment/fun. |
| Taylor and Bruner[30] | Testing if the coach's support and task cohesion influence the satisfaction of the psychological needs and sport experiences. | Transversal | 133 | United Kingdom | 11 to 18 years old | M | Colletive | Coaching Behavior Scale for Sport, Youth Sport Environment Questionnaire, Basic Need Satisfaction in Relationships Scale and YES | Quantitative | The coach's support more than task cohesion had an impact on the basic needs satisfaction, and this on the sport experiences. |
| Vella et al.[20] | Impacto f a leadership program on the leadership perception and development experiences. | Longitudinal (a group of coaches had training, but the other did not) | 16 coaches and 127 athletes | Australia | 12 to 18 years old | F/M | Collective | Differentiated Transformational Leadership Inventory for Youth Sport and YES-S | Quantitative | The cognitive abilities were higher after training with coaches. |
| Vella et al.[21] | Verifying the relation between leadership behavior, coach/athlete relationship success and development experiences. | Transversal | 455 | Australia | 11 to 18 years old | F/M | Collective | Differentiated Transformational Leadership Inventory for Youth Sport, Coach-Athlete Relationship Questionnaire, YES-S and score. | Quantitative | The association of transformational leadership and quality in the coach/athlete relationship were the best predictors of positive experiences. |

Source: The authors.

*Main Variables Assessed and Benefits Found*

The variables assessed (Table 2) were related to three elements of the sport context: coach (n = 7 variables), athlete (n = 6 variables) and sport team/type (n = 7 variables). The studies that examined the coach role according to PYD investigated their leadership behavior and how they relate to and provide support to athletes. The researches that used the variables regarding the athlete analyzed both, how these variables may promote the PYD and how they can be affected by sport. The variables related to the sport team/type, although having provided positive results for the youth development, when used with the variables related to the athletes and coaches in some studies, they showed an insignificant or less important impact.

**Table 2.** Variables related to the attributes of positive high performance youth development.

| **Theme** | **Variables assessed** | **Items related to youth development** | | |
|---|---|---|---|---|
| | | **Positive items** | | **Negative items** |
| Coach | The coach's behavior, support, transformational leadership, coach-athlete relationship, transformational leadership training, informal training for the life goals, purposes and methods used by the coach for the positive development through sport. | Competition strategies[22] and sport abilities improvement, establishing the goals, how sport lessons are related to life[22,23], positive support[22], individual consideration[21], caring with the athletes[23], intellectual stimulation[20,21], appropriate role modeling[20,21], consistence of the coach's behavior[23], formal and informal training of the coach[20,25], positive relationships with the athletes[21,23]. | | Negative support[22], the coach's lack of training[20]. |
| Athlete | Ability level, motivational orientation, enjoyment/fun for sport, mental toughness, psychological needs and burnout. | <u>Generating Impact</u> | <u>Receiving Impact</u> | Competence referenced by others[29]; high ego orientation combined with low task[31]. |
| | | Enjoyment for sport through affiliation with peers; self-reference competence, effort[29]; positive identity and empowerment[28]; satisfaction of the psychological needs[30] and orientation related to the task; low ego orientation and high level of ability[31]. | Global mental toughness [27] and related items; affective intelligence, desire for achievement; resilience; attention control[26], decreased bournot and increased enjoyment/fun[28]. | |
| Sport/ Team | Sport practice, sport type, task interdependence and result, motivational atmosphere, task cohesion, the team success and volume of weekly training. | Sport practice[33], sport type; result interdependence[32], training hours[26], motivational atmosphere oriented to the task[29] and task cohesion[30], team success[21]. | | Motivational atmosphere oriented to the ego[29] and peer negative influences[26]. |

Source: The authors

Figure 1 shows the main benefits for the PYD promoted by sport through the variables related to the coach, the athlete and the team/type of sport. In general, more personal than social benefits were found.

| PERSONAL BENEFITS |
|---|
| Character; caring; attention control; achievement desire; decreased burnout; setting goals; feedback; cognitive abilities; identity; initiative; leadership; enjoyment for sport; emotional regulation or affective intelligence; resilience; mental toughness; satisfaction of basic needs. |
| SOCIAL BENEFITS |
| Family interactions; connections with the community; less social exclusion; pro-social norms; adult network/social capital; positive relationships; respect; team work. |

**Figure 1**. Personal and social benefits promoted by the variables related to the coach, athlete and team/sport.
Source: The authors

*Analysis of the Information Shown in the Articles*

It was seen that (Table 3), in general, the articles had complete information about the context/justification of the study (introduction); the theoretical reference and reasons for carrying out the research were detailed; the main results (results and discussion) were shown, as well as the limitations and cautious interpretation of the results (discussion). The study size was the least informed item in the articles, that is, how the sample size was determined (n = 13; 100%). There were also few information on the type of study in the methodology (n = 9, 69.2%), in addition to confounding variables used in the analyzes (n = 9, 69.2%) and descriptive data of the participants in the results (n = 9, 69.2%).

**Table 3 -** Analysis of the information shown in the articles according to STROBE Statement.

| **STROBE items answered in full** | **STROBE items either partially answered or not answered** |
|---|---|
| | **Title/Abstract** (6 articles: 46,1%) |
| **Introduction:** context/justification (100%) | **Introduction:** purposes (5 articles: 38.5%) |
| **Methods:** context, variables, data sources/measurement, quantitative variables (100%) | **Methods:** the study design (9 articles: 69.2%), subjects (4 articles: 31.0%), bias (9 articles: 69.2%), the study size (13 articles: 100%), statistical methods (3 articles: 23.1%) |
| **Results:** the subjects, conclusion; main results, other analyses (100%) | **Results:** descriptive data (9 articles: 69.2%) |

Source: The authors

## Discussion

The concentration of the publications in recent years (Table 1) shows that although the PYD approach had emerged in the mid-1990s[7], it has only recently been used as a theoretical support for studies involving high performance athletes; a possible consequence of the fact that this terminology have been only recently applied in the field of sport psychology[11].

A geographical delimitation of studies using the PYD approach in English-speaking countries was seen (Table 1), which may be due to the influence of its inception by the American psychologists. Popularizing this approach in other countries, such as Brazil, may contribute to a greater knowledge and use of PYD by researchers from different languages[14].

Few measures for the analysis of the PYD in the sport context were seen; general scales such as YES were used[16]. This lack is a common limitation of a new area that has been elaborated, thus, the validation of standardized instruments has been encouraged[9,17]. Considering the sport context, a good alternative is the YES-S[18], the only instrument found specifically for sport (Table 1) and which has shown good reliability indices[19-21].

The predominance of the cross-sectional design, coupled with the differences in the number and characteristics of the subjects, made it difficult to compare the results (Table 1). However, three major categories emerged from the analyses, that is, the variables related to the coach, the athlete and the team/sport type (Table 2).

It was seen that the athletes had positively perceived the coach's behavior to develop sport specific aspects, such as improvement of sports abilities, teaching of competitive strategies and ways of improving the goal setting and intellectual stimulation[20-23], which shows that even when the main focus of the sport is not directly the development of PYD variables, these can also be promoted if the coach adopts positive teaching behavior and improvement of the technical aspects of the sport.

The promotion of positive relationships with the athletes, evidenced by feelings of caring, respect and individual consideration coupled with the coach's support, were positively related to the development of the athletes[21-23]. On the other hand, the negative support shown, for example, when the coach expresses a preference for some players over others, was associated with negative experiences, such as stress, social exclusion and negative team dynamics[22].

The athletes perceived more positive experiences when their coaches helped them reflect on how the lessons learned in sport can be transferred to life[22,23]. These findings reinforce that PYD through sport is not automatic, but depends on a series of factors that must be carefully planned[4].

Considering the coach as a positive model of behavior, the fact of maintaining appropriate and consistent behavior during training and competitions[21,23] was also important for the young individuals, which is in accordance with Camiré et al.[24] who stated that the coach is the adult that more time passes with the athletes in the sport context and, thus, his/her behavior is a model to be followed. The coaches often see themselves as responsible for facilitating PYD, however, they do not always know how to do it[8]. In this sense, training programs are effective[20,25] and their lack is related to decreases in positive experiences[20].

Considering the studies that used the variables related to the athletes, some evaluated the impact of the sport experiences on the personal variables, whereas others assessed the impact of personal variables in the sport experiences (Table 2). Two studies[26,27] analyzed the impact of sport experiences on mental toughness and verified that the initiative was the variable that contributed the most. Larson[13] reinforces that the initiative is related to the ability of acting autonomously; being intrinsically motivated and directing attention and effort towards a challenging goal. Such characteristics may justify this relationship, since mental resistance involves indicators such as affective intelligence, desire for achievement and attention control[26,27].

In addition to the initiative, other characteristics promoted by sport had a positive impact on the personal variables of the athletes. The feeling of empowerment through sport (valued and useful feeling) contributed positively to increase the feeling of enjoyment/fun for sport, as well as for the development of the athlete's identity, whereas this helped to reduce burnout[28].

Regarding the personal variables that had an impact on the sport experiences, the importance of satisfying the psychological needs, that is, competence, autonomy and bonds

was seen, as well as, feeling enjoymente/fun for sport through self-referenced competence (the comparison with oneself), effort and affiliation with teammates[29,30]. On the other hand, feeling enjoyment/fun for sport through competence referenced by others (being better than others) related to negative experiences[29].

In relation to the youth moral aspects, feeling more skillful and having a motivational orientation more focused on the task than the ego was positively related to the athletes caring and character; the high ego orientation was only negative when coupled with low task orientation[31].

Therefore, it was seen that having a self-directed orientation and overcoming obstacles not only facilitates sport experiences[29], but also has a positive impact on moral aspects[31]. On the other hand, only feeling competent when he or she can overcome others, without motivation and enjoyment given by the task challenge, can promote negative experiences[29,31].

Considering the team/type sport variables, it was seen that two variables had negative effect on the youth development: the negative influence of the peers, which had an inverse relation with mental toughness[26]; and the ego-oriented atmosphere, which has been associated with negative experiences[29]. On the other hand, the task-oriented atmosphere has provided more positive experiences[29], which indicates that not only in personal terms[28], but also in relation to the team, having a motivational orientation aimed at overcoming challenges than just overcoming opponents is more beneficial. The study by Bruner et al.[32] goes further and points out that sport experiences may be more positive if athletes manage not only to have task interdependence (dependent on the sport type), but mainly, to have high levels of the result interdependence.

Therefore, it is seen that a motivational team atmosphere, in which there is great competition among the members or with the opponents, is considered negative[29]; an atmosphere according to which the athletes get together in order to achieve goals is perceived as positive[29,32]; but the construction of a collective feeling of each individual is affected or affects either the success or failure of everybody, which is even more effective for positive experiences.

Task cohesion was a positive factor in youth sport experiences, but its impact was lower than the support perception of the coach on the athletes[30]. Two other variables related to the coach (leadership and positive relationship between coach and athlete) were also considered more important than a team variable (success)[21], which reinforces the great influence that the coach plays in PYD.

It is also worth noting that feeling competent [29,30] and skillful[31] brought more benefits than the number of points that the team had scored in the competition[21], a variable that seems to be related to a competence referenced by the others and also not related to positive experiences[29].

The study by Jones and Lavalee[33] also verified a variable related to the sport/team, analyzed as the practice of the sport itself (without differentiation by the sport type). It was seen that the athletes perceive that sport practice, in general, can promote personal and social abilities; however, it is emphasized the importance of the coach to teach them how to transfer these abilities from the sport context to life, a fact also found in other studies[22,23].

The studies reported positive results related to personal rather than social variables (Table 1), which seems to be a characteristic of the PYD approach that uses more personal variables in its instruments[16,17]. This is a criticism that the approach has received; suggestions have been made in the sense of also evaluating how the athlete can contribute to society[34]. Some researchers[17,35] have been testing the 5C's model (competence, confidence, connection, character, and caring/compassion), which points out that only when young people develop

some of these personal attributes they can positively contribute to themselves, the family, the community and, ultimately, the civil society. However, considering the sportspeople, this model was not confirmed, which indicates the need for further studies[36].

When comparing the personal and social benefits promoted by sport experiences with PYD constructs proposed by Shek et al.[37], according to the classic study by Catalano et al.[38], there are many similarities, such as: cognitive competence, emotional competence, self-determination, positive identity, pro-social norms, resilience, among others. However, more current topics, such as spirituality, have not been explored[39].

Although the articles have shown in full the theoretical foundations of the study in the introduction (Table 3), the PYD approach was directly pointed out as a theoretical reference in only one study. It is possible that this difficulty in making clear the approach is due to the concept inconsistencies of the area itself, which sometimes calls it an approach[12], sometimes as a theory[10], limitations which are typical of a developing area[9,11].

Another limitation that hinders the generalization of the results is the information about the study size (Table 3). Most articles explain the choice of the subjects; however, no research shows if a sample calculation and random selection of the individuals were performed. Thus, some research findings are linked to the typical limitations of the convenience samples[40].

## Conclusions

This systematic review allowed some notes. Initially, limitations were seen in a recent and growing area such as: the research concentration in a single language in recent years, with few measures used and without a direct identification of the approach as the theoretical support of the investigations.

The variety of sports and the age group, coupled with the predominance of cross-sectional studies, with relational analyses and with convenience samples are aspects to be taken into account in the conclusions of the study, which showed more personal than social benefits.

The coaches who teach strategies and develop sport abilities, in addition to being conduct models, they create positive relationships and support the athletes by teaching them to transfer sports abilities to life. Such coaches have a positive impact on youth sport experiences.

The athlete's variables reinforced the importance of an orientation towards the subject, promoting a sense of competence and initiative, whereas the team/sport variables pointed to the need of creating a unity atmosphere, in which everyone is affected by the success or failure of each other.

Although this has been the first known systematic review of the studies to use the PYD approach with high performance athletes, it is worth noting that the research that did not made evident the approach as the study theoretical reference was not included in the analyses, and this seems to be one of the limitations of the study. Delimiting which study uses the PYD approach is not an easy task for researchers, since many do not make their application clear. In addition, there is a lack of information on both, the technical level of the athletes and the sport purpose. Extending this information may contribute to further studies.

It is also suggested that researches seek to expand the analyzed constructs by investigating more social factors, as well as emerging personal themes, such as, for example, the athletes' spirituality. The specific PYD instrument validation in sport context, such as the YES-S in different languages, may contribute with the expansion of the research in the area.

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