

Article

## Peer- and Coach-Created Motivational Climates in Youth Sport: Implications for Positive Youth Development of Disadvantaged Girls

Hebe Schailleé<sup>1,\*</sup>, Marc Theeboom<sup>1</sup> and Jelle Van Cauwenberg<sup>2,3</sup>

<sup>1</sup> Department of Movement and Sport Sciences, Vrije Universiteit Brussel, 1050 Brussels, Belgium;  
E-Mails: [hebe.schaille@vub.be](mailto:hebe.schaille@vub.be) (H.S.), [marc.theeboom@vub.be](mailto:marc.theeboom@vub.be) (M.T.)

<sup>2</sup> Department of Public Health, Ghent University, 9000 Ghent, Belgium; E-Mail: [jelle.vancauwenberg@ugent.be](mailto:jelle.vancauwenberg@ugent.be)

<sup>3</sup> Fund for Scientific Research Flanders (FWO), 1000 Brussels, Belgium

\* Corresponding author

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### Abstract

The relationship between coach- and peer-created motivational climates and Positive Youth Development is largely unexplored. This is especially true for the latter and in particular with regard to disadvantaged girls. The present study was designed to examine the relationships between perceived coach- and peer-created climates and reported developmental gains among disadvantaged girls participating in sports programmes, and to determine whether these relationships were moderated by personal characteristics. Two hundred young women aged between 12 and 22 completed a questionnaire which included the ‘Youth Experience Survey for Sport’ (MacDonald, Côté, Eys, & Deakin, 2012), the ‘Motivational Climate Scale for Youth Sports’ (Smith, Cumming, & Smoll, 2008), the ‘Peer Motivational Climate in Youth Sport Questionnaire’ (Ntoumanis & Vazou, 2005), and questions regarding participants’ socio-economic characteristics. Multilevel regression analyses were performed to take into account the hierarchical data structure. The analysis revealed that a mastery-oriented coach climate is a very strong predictor of perceived Positive Youth Development. This is based on both the number of developmental domains on which it had a significant impact and the explained variance based on the PRV values of the multi-level models. Unlike previous research on disadvantaged youth in general and disadvantaged girls in particular, the observed interaction effects did not show that disadvantaged girls necessarily gain more from their involvement in organised activities such as sport.

### Keywords

coach; disadvantaged girls; motivational climate; peers; Positive Youth Development; sport

### Issue

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### 1. Introduction

Organised leisure time activities, such as youth sport, are contexts in which young people can acquire important skills and competencies and which can therefore contribute to Positive Youth Development. Youth sport is an increasingly popular organised leisure time activity for girls in Flanders and Western European countries (Duda & Ntoumanis, 2005; Scheerder, Taks, Vanreusel, & Ren-son, 2005). In recent years, there has been an increase

in the number of organised sport programmes that offer participation opportunities for disadvantaged girls, a group of youngsters which is often marginalised in sport (e.g., Sabo & Veliz, 2008). Several researchers even assume this group gains more from their involvement in organised sport than affluent youngsters (Gould, Flett, & Lauer, 2012). For example, Blomfield and Barber (2010) found that adolescents from low socio-economic schools derived more benefits (e.g., self-worth) from their participation in activities such as sport than their peers from

high socio-economic schools. Researchers evaluating programmes which are aimed at disadvantaged youth in general emphasise the fact that mere participation in sport does not automatically foster Positive Youth Development (Haudenhuyse, Theeboom, & Coalter, 2012). It seems that certain conditions or mechanisms have an influence on the relationship between participation in sport and perceived developmental outcomes. Given that a positive psychological climate is considered a prerequisite for facilitating developmental outcomes in organised sport (Haudenhuyse et al., 2012), the promotion of aspects related to such an environment deserves attention. According to Ryan and Deci's self-determination theory (SDT) (2000), there are three different fundamental psychological needs which, when fulfilled, activate an individual's innate tendencies towards development. These needs are a sense of belonging, autonomy, and perceived competence. Although all three psychological needs are necessary, the relative impact of each factor may vary depending on the functional significance of the situation (Ryan & Deci, 2000). Several researchers have emphasised that perceived competence has a greater impact on youth development than the two other fundamental psychological needs in all forms of physical activity (e.g., Ntoumanis, 2001). However, the degree to which perceptions of competence are fulfilled depends, after an individual's own goal structures, on the motivational climate created by significant others (Ames, 1992a).

### 1.1. Motivational Climate

Central to the psychological concept of a motivational climate are the normative influences and evaluative standards of significant others. This psychological concept is situated in goal perspective theory, which holds that there are two conceptions of competence operating in achievement-related activities such as sport: a mastery motivational climate that encourages effort, task mastery, and individual improvement; and a performance motivational climate that fosters social comparison and emphasises normative ability (Ames, 1992a). Research into youth sport with regard to these two conceptions of competence has predominantly examined athletes' perceptions of the coach-created climate (Duda & Balaguer, 2007). There is extensive evidence in the domain of youth sport demonstrating that perceptions of a mastery-involving climate is related to more adaptive motivational outcomes, whereas perceptions of a performance-involving climate correspond to more negative motivational outcomes (e.g., Biddle, 2001). Researchers found that athletes' perceptions of a mastery climate were positively related to the ability to use self-referenced sources of competence information (Haliburton & Weiss, 2002), adaptive sources of sport confidence (Magyar & Feltz, 2003), perceptions of competence (Weiss, Amorose, & Wilko, 2009) and the use of effort (Vazou, Ntoumanis, & Duda, 2006). Furthermore, several studies found that the more coaches created

a mastery-oriented environment, the more youth sport participants derived enjoyment from their participation (Cumming, Smoll, Smith, & Grossbard, 2007; MacDonald, Côté, Eys, & Deakin, 2011; Weiss et al., 2009). Another important finding is that perceptions of a mastery-oriented climate were positively associated to an athlete's satisfaction with the coach and match results (Cumming et al., 2007). Alternatively, perceptions of a performance-oriented climate were related to negative experiences such as peer conflict (Ommundsen, Roberts, Lemyre, & Miller, 2005), negative perceptions of the coach (Smith, Fry, Ethington, & Li, 2005), and increased anxiety (Pensgaard & Roberts, 2002). Overall, these studies suggest that a mastery-oriented climate is beneficial for young people's continued motivation to participate in sport, whereas a performance-oriented climate may negatively affect youth participation.

Initially, researchers in the domain of youth sport mainly focused on the coach-created motivational climate, while the potential of peers to transmit task-involving and ego-involving motivational cues remained largely overlooked (Ntoumanis, Taylor, & Thøgersen-Ntoumani, 2012). A limited number of researchers argued that peers are also important contributors in creating a motivational climate in organised youth sport programmes (e.g., Ntoumanis & Vazou, 2005). In recent years however, some researchers (e.g., Ntoumanis et al., 2012) have explored the influence of peer-created motivational climates in sport contexts. Vazou and colleagues (2006) found that perceptions of a mastery-involving peer climate were related to more enjoyment and physical self-worth. There is also empirical evidence indicating a relationship between perceptions of a mastery-involving peer climate and positive motivational, affective, and behavioural patterns (Murcia, de San Roman, Galindo, Alonso, & Gonzalez-Cutre, 2008), adaptive outcomes (e.g., moral attitudes, behavioural investment) (Ntoumanis et al., 2012), and lower burnout perceptions (Smith, Gustafsson, & Hassmén, 2010). While some studies reported that perceptions of a performance-involving peer climate were associated with negative outcomes such as greater levels of gamesmanship and cheating (e.g., Ntoumanis et al., 2012), other researchers did not find such significant negative relationships (e.g., Murcia et al., 2008). Although there is no consensus about the impact of a performance-involving peer climate, these studies provide evidence for the fact that assessing the coach-created motivational climate is not sufficient when examining the role of the psychological environment in youth sport, as peers can also be an important source of influence.

### 1.2. Motivational Climate and Positive Youth Development

Aforementioned studies have explored the relationship between the coach- and peer-created motivational climate and youngsters' continued motivation to partici-

pate in sport. To date, there are only two published studies that have explored the relationship between motivational climate and perceived Positive Youth Development (i.e., domains of learning experiences). While researchers in the Positive Youth Development domain have used different theoretical approaches to explore the developmental potential of organised sport, both studies used Dworkin, Larson, and Hansen's (2003) domains of learning experiences to assess and evaluate the effects associated with organised participation in sport. MacDonald et al. (2011), in a sample of 510 participants in team sports, found that positive developmental experiences concerning personal and social skills, goal setting, and initiative were most strongly predicted by a mastery-oriented coach climate. Similarly, using a sample of 239 underserved participants in youth sport, Gould et al. (2012) found that a mastery-oriented coach climate was associated with positive developmental experiences. Gould et al. (2012) reported that, based on the schools that these youths attended, the participants involved in this study had an average likelihood of 52% ( $SD = 25.9$ ) of being eligible for the federally funded free and reduced lunch intended for children below the poverty line. Both studies also found that a performance-oriented coach climate predicted negative experiences. These recent studies show that perceptions of a coach-created motivational climate are useful in predicting the perceived Positive Youth Development of participants in youth sport. What is not well understood yet is the relative importance of the coach-created and peer-created motivational climates on the perceived Positive Youth Development of youth in general, and disadvantaged girls in particular.

### 1.3. Disadvantaged Girls

According to Ntoumanis, Vazou, and Duda (2007), it is of practical importance to examine whether perceptions of the motivational climate created by significant others in a sport context vary as a function of individual factors. Some individual level variables that have already been investigated are sex and age (Ntoumanis et al., 2007). Focusing specifically on disadvantaged girls, rather than on disadvantaged youth in general, is important because research shows that girls and boys experience sport differently across a number of constructs (e.g., win orientation, parent's belief in their child's abilities, amount of recognition) (Fredricks & Eccles, 2005; Gould & Carson, 2011). This often results in different developmental experiences (e.g., Fredricks & Eccles, 2005). Gould and Carson (2011), for example, examined the links between coaching behaviours (e.g., positive and negative coaching rapport) and young athletes' perceived developmental experiences (e.g., effort). While positive coaching strategies were related to athletes' perceived developmental experiences, these relationships were significantly stronger for girls. The results of Gould and Carson's study (2011) clearly showed that female and male par-

ticipants experienced similar coaching strategies differently and that this can result in diverse developmental impacts. To date, however, there has been no research that has examined variations among Positive Youth Development with regard to specific characteristics of disadvantaged girls in the domain of sport. Disadvantaged girls are defined as individuals who are underserved in the domain of youth sport due to participation barriers (e.g., economic, cultural, or linguistic barriers). Researchers indicated that disadvantaged girls in the domain of youth sport often have a migrant background, are in low/short educational tracks (i.e., technical/vocational secondary school programmes), and grow up in single parent households (Sabo & Veliz, 2008; Smith et al., 2007).

This group's low participation level in organised sport is of further concern as empirical evidence indicates that disadvantaged young people in general derive more benefits from their participation in organised activities than affluent youth (Blomfield & Barber, 2010). The underlying notion for this assumption relates to the fact that Positive Youth Development in disadvantaged populations is less likely to occur for reasons linked to the communities in which these young people live (i.e., fewer resources that foster Positive Youth Development) (Gould et al., 2012). It is therefore assumed that, if disadvantaged youth engage in a developmentally appropriate context, they will derive more benefits than their affluent peers. Theoretically, there is one fundamental psychological need (i.e., perceived competence) which is most likely to be related to developmental gains participants derive from their participation in sport (Ntoumanis, 2001). The motivational climate created by significant others can, in part, lead to an increase or decrease in perceptions of competence within a sport context (Ames, 1992a). To date, however, there has been only one published study that explored the relationship between the coach-created motivational climate and Positive Youth Development among disadvantaged young people (Gould et al., 2012). This study was framed around the coach-created motivational climate, while the potential of the peer-created motivational climate to predict Positive Youth Development remained unexplored. Thus, with regard to young people underserved in the domain of sport, it is still unknown whether the peer-created motivational climate relates to Positive Youth Development. Moreover, generalisations about the developmental potential of sport are unhelpful because, in comparison to affluent girls, disadvantaged girls participate in a limited number of sport activities. Sport activities that appeared to be popular in an organised leisure time context for disadvantaged girls are full-contact martial arts (Elling, 2012) and urban dance styles (Beaulac, Kristjansson, & Calhoun, 2011). Various facts may explain the popularity of these activities: they are valued within these youngsters' subcultures; they are related to girls' orientation towards their bodies; they are often low cost and require limited equipment (Elling, 2012; Hancock, Lyras, & Ha, 2013; Hellison & Georgiadis, 1992; Nakeyshaey, 2005).

## 2. Study

The current study was conducted in Flanders (the northern, Dutch-speaking part of Belgium) and investigated the relationships between perceptions of both the coach-created motivational climate and the largely unexplored peer-created motivational climate and Positive Youth Development. Moreover, this study aimed to examine whether these relationships were moderated by the individual characteristics of participants. The following hypotheses were formulated based on earlier research related to the developmental impact of the motivational climate in youth sport (MacDonald et al., 2011) and research indicating a greater positive impact of organised sport on disadvantaged youth (Blomfield & Barber, 2010):

- Hypothesis 1: There is a significant relationship between a coach- and peer-created mastery-involving climate and positive developmental experiences.
- Hypothesis 2: Individual characteristics of disadvantaged girls—migration background, low educational track, non-intact family—will moderate the relationship between developmental gains and perceptions of the coach- and peer-created motivational climates.

## 3. Method

### 3.1. Participants

Participants were recruited within existing sport programmes that target disadvantaged girls. Both urban

and martial arts initiatives were selected for the specificity of the targeted group and the degree of accessibility. Coaches and coordinators of sport programmes described whether their programmes reached disadvantaged girls (i.e., the target group) and the extent to which the programmes specifically served these girls (i.e., the degree of accessibility). A total of 56 sport programmes in Flanders were contacted for this study. The sampling criteria related to the programmes' target groups and their actual degree of accessibility, and resulted in a selection of 15 sport programmes in Flanders. Some programmes were not selected for this study because they did not meet the above-mentioned selection criteria or were not reaching girls. In the present study, data were collected from 200 female respondents. The response rate in this study was very high (99% (200/202 = .99)). The sample included 142 (71.0%) urban dance and 58 (29.0%) martial arts participants. 51.4% of the participants who were in secondary education ( $n = 183$ , 16 primary education, 1 missing) were on a low educational track (i.e., technical or vocational secondary education). 20.1% of the participants that provided information regarding their migration background ( $n = 189$ , 11 missing) were born abroad with most of them of Moroccan, Polish, Turkish or Italian descent. There were several reasons for choosing to use nationality and not ethnicity but the main reason was a practical one, namely that several girls (especially the younger ones) were not able to provide the relevant information to take their ethnicity into account (such as the birthplace of their parents, whether or not they belong to second or third generation). 13.1% of the participants lived in a non-intact family (i.e., not with both their biological parents) ( $n = 199$ , 1 missing) with the majority of them (76.9%) living with their

**Table 1.** Additional descriptive statistics of the sample ( $N = 200$ ).

Variables		<i>n</i>	%
Migration background <sup>a</sup>	Belgian	151	79.9
	Born abroad	38	20.1
Secondary school programme <sup>b</sup>	Academic <sup>d</sup>	89	48.6
	Applied	94	51.4
	Technical	51	54.3
	Vocational	43	45.7
Family structure <sup>c</sup>	Both biological parents	173	86.9
	Non-intact family	26	13.1
	Mother	20	76.9
	Father	2	7.7
	Grandmother	1	3.8
	Orphanage	2	7.7
	Independently under supervision	1	3.8
Type of sport	Urban dance	142	71.0
	Martial arts	58	29.0

Notes: <sup>a</sup>  $n = 189$ , 11 missing values; <sup>b</sup>  $n = 183$ , 16 primary education, 1 missing value; <sup>c</sup>  $n = 199$ , 1 missing value; <sup>d</sup> "Academic" refers to the general six-year high school programme and is contrasted to the technical and vocational high school programmes, available for high school education in Flanders.

mother. The others were living variously with their father ( $n = 2$ ), in an orphanage ( $n = 2$ ), with their grandmother ( $n = 1$ ) or independently under supervision ( $n = 1$ ). Additional descriptive statistics of the sample are displayed in Table 1.

### 3.2. Measures

A socio-demographic survey, the Motivational Climate Scale for Youth Sports (MCSYS; Smith, Cumming, & Smoll, 2008), and the Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005) were used to assess the independent variables. The Youth Experience Survey for Sports (YES-S; MacDonald, Côté, Eys, & Deakin, 2012) was used to assess the dependent variables.

#### 3.2.1. Socio-Demographic Survey

Age, sex, nationality, educational level, and household structure were also assessed. Nationality was determined based on a child's place of birth and dummy coded into Belgians (coded 0) and participants with a migrant background (coded 1). Educational levels were assessed using a 7-point scale ranging from primary to tertiary education. The 7-point scale consisted of the following response options: (1) primary or elementary education, (2) general or academic secondary education, (3) artistic secondary education, (4) technical secondary education, (5) vocational secondary education, (6) higher education (non-university or university), (7) I don't know. Participants were classified into high (i.e., academic) versus low (i.e., applied) educational tracks depending on their secondary school programme. We opted for a dichotomous categorisation wherein we compared students in academic tracks with students in all other secondary tracks taken together. The data were dummy coded into academic secondary education (coded 0) and applied secondary education (coded 1). Household structure was assessed using a 4-point scale (i.e., living with both biological parents, with one biological parent or alternately with both, with a guardian, in an orphanage). In addition, participants were given the opportunity to mention any other situation in which they lived. These data were dummy coded into intact family (i.e., with both biological parents) (coded 0) and non-intact family (coded 1). The survey also assessed the respondents' frequency of sport participation, their level of sport experience, and their involvement in organised non-sport activities. The frequency of sport participation was assessed using a 4-point scale ranging from 1 (not every week) to 4 (at least 3 times a week). These data were dummy coded into not every week (coded 0) and at least once a week (coded 1). The level of sport experience was assessed using a 4-point scale ranging from 1 (less than one year) to 4 (more than five years). These data were dummy coded into less than one year (coded 0) and at least one year (coded 1). Participation in organised non-sport

activities during leisure time was assessed using four categories based on existing research (e.g., Hansen & Larson, 2007; Larson, Hansen, & Moneta, 2006). These included: performance and fine arts, academic activities, faith-based and service activities, community and vocational clubs. If a specific activity was not listed in a category, the participant could type in the name of the activity. In addition, each questionnaire received a code related to the sport programme. This was necessary to perform the multilevel analyses, which enabled adjustment for specific group-level socio-economic variables (i.e., percentage of respondents in a sport team, who were born abroad, followed applied secondary education, and lived in a non-intact family situation). In a previous study (Schaillée, Theeboom, & Van Cauwenberg, 2015), these were shown to be significantly related to the dependent variable (i.e., perceived Positive Youth Development).

#### 3.2.2. Motivational Climate Scale for Youth Sports

The MCSYS (Smith et al., 2008) was constructed to assess the coach-created motivational climate. It is comprised of twelve items that are summarized into two factors: a mastery motivational climate and a performance motivational climate. Six items are mastery-initiating (e.g., the coach made players feel good when they improved a skill) and the remaining six items are performance-initiating (e.g., the coach spent less time with players who weren't as good). Participants responded to a 5-point scale ranging from 1 (not at all true) to 5 (very true). In the present study, mastery and performance subscales showed good internal consistency with Cronbach's alpha coefficients of .713 and .688, respectively.

#### 3.2.3. Peer Motivational Climate in Youth Sport Questionnaire

The PeerMCYSQ (Ntoumanis & Vazou, 2005) was used to assess the peer-created motivational climate. It includes 21 items which fall within two higher order factors: a mastery motivational climate including twelve items (e.g., "In this team/training group, most athletes...": "...work together to improve the skills they do not do well") and a performance motivational climate including nine items (e.g., "...try to do better than their teammates"). Participants responded to a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). In the present study, we used the scores for the specific subscales (e.g., improvement) rather than those related to the global mastery and performance motivational climates because this could provide us with insights into the specific subscales that predict developmental experiences among disadvantaged girls. The use of the specific subscales (e.g., improvement) was based on existing research conducted by Vazou and colleagues (2006). Reliability analyses of the subscales in the current study produced Cronbach Alpha values between .639 and .808.



### 3.2.4. Youth Experience survey for Sports

The YES-S (MacDonald et al., 2012) was constructed to assess the positive and negative developmental experiences occurring in the domain of sport. It comprises five subscales (four positive ones and one negative one) and 37 items that fall within these scales. These include: personal and social skills (e.g., “I became better at giving feedback”), cognitive skills (e.g., “This activity increased my desire to stay in school”), goal setting (e.g., “I observed how others solved problems and learned from them”), initiative (e.g., “I learned to focus my attention”), and negative experiences (e.g., “I was treated differently because of my gender, race, ethnicity, disability, or sexual orientation”). For each item, participants used a four-point Likert-type scale ranging from 1 (not at all) to 4 (yes, definitely) to describe the extent to which they felt a given experience characterised their involvement in sport. In the present study, Cronbach’s alpha coefficients for the different subscales of the YES-S were between .667 and .846.

Since no validated Dutch versions exist of the MCSYS, the PeerMCYSQ or the YES-S, a forward and back translation method was used. These questionnaires were translated from English to Dutch by bilingual Dutch and English speakers, retranslated, and modified by researchers when necessary.

### 3.3. Procedures

Coach(es) and/or youth worker(s) from the sport programmes were not present during the completion of the questionnaires but they did provide assistance for the organisation of the survey. At least one week before the completion of the questionnaires, minors (i.e., girls up to 18 years old) received a letter for their parents or legal guardian, which, amongst other things, explained the purpose of the study and highlighted the possibility of refraining from participation. Passive consent forms were also used for the girls older than 18. Parents and coaches were informed about the purpose of the study before giving the survey to the participants. Respondents were also informed about the purpose of the study and were told that participation was voluntary and that their information would not be shared with members of the coaching staff or parents. During the completion of the questionnaires researchers provided assistance in completing the survey (i.e., explaining the Likert scales, etc.) and ensured that each participant completed her questionnaire without being influenced by her peers. Several items were also formulated in a simplified way (in italics under the original question) or included additional information. The selection of these items was based on a preliminary study involving eight young adolescent girls (aged between 10 and 12) from different socio-economic backgrounds. On average the completion of the questionnaires took between 20 and 30 minutes.

### 3.4. Data Analysis

To account for the hierarchical data structure (participants clustered within sport clubs), multilevel regression analyses were performed using MLwiN 2.30. For the outcomes ‘personal and social skills’, ‘cognitive skills’, ‘goal setting’, and ‘initiative’, multilevel linear regression analyses were performed (Steele, 2008). The normal distribution of these outcomes was confirmed by their skewness and kurtosis values and visual inspection of their Q-Q plots. A stepwise approach was followed to construct a final model for each outcome. First, a basic model was constructed including age and type of sport. Second, four separate models were constructed including a ‘motivational climate variable’, an ‘individual socio-economic variable’, and the interaction between these two. This was performed separately for each ‘motivational climate variable’. Level of significance was determined at 0.05 for main effects and 0.10 for interaction effects. Third, all significant main and interaction effects observed in the previous step were combined into one model. This model was optimized by deleting non-significant variables that did not improve the model fit. Fourth, this model was adjusted for the ‘group-level socio-economic variables (i.e., percentage of respondents in a sport team that were born abroad, that followed applied secondary education, and that lived in a non-intact family situation) and individual socio-economic variables’, which were shown by a previous study (Schailleé et al., 2015) to be significantly related to the outcome variable. The results of this model are presented in Table 3. Significance of individual parameters was tested by Chi-squared tests. Since the outcome ‘negative experiences’ was heavily positively skewed, this variable was dichotomized around its median (= 1.20). Values equal to or lower than the median were coded ‘1’ (no negative experiences) and values above the median were coded ‘0’ (negative experiences). Multilevel logistic regression analyses were performed to analyse the odds of there being no negative experiences reported. The same stepwise approach as described above was followed to construct the final model. For the logistic regression analyses, parameter estimates were obtained via Markov Chain Monte Carlo (MCMC) procedures (burn-in length = 5,000 and monitoring chain length = 50,000) (Brown, 2012). To facilitate interpretation, significant interaction effects were illustrated using MLwiN’s customized prediction function (Rasbash, Charlton, Jones, & Pillinger, 2009).

Since the level of involvement in sport appeared to be related to ‘initiative’ experiences during exploratory analyses, all analyses for ‘initiative’ were adjusted for the level of sport involvement. The level of significance was determined at 0.05. The proportional reduction in variance statistic (PRV), which represents both the explained total variance and the variance at the participant and team levels through the inclusion of an independent variable, was calculated and used to illustrate the local effect

size of significant relationships (Peugh, 2010). For significant interaction effects, we calculated the PRV for the inclusion of the two main effects and the interaction effect. The variance explained by the overall final model was also calculated and can be smaller than the sum of the explained variances of the predictors (Peugh, 2010).

## 4. Results

### 4.1. Descriptive Statistics

Table 2 provides the descriptive statistics and internal consistency estimates for the main dependent, independent, and control variables. Ratings for positive developmental experiences were relatively high ( $M = 2.90$ , with a maximum score of 4) and ratings for negative experiences were low ( $M = 1.31$ ). The highest positive subscale scores were found for initiative ( $M = 3.37$ ), followed by personal and social skills ( $M = 2.90$ ), goal setting ( $M = 2.70$ ), and cognitive skills ( $M = 2.14$ ). The coach-created climate in which these sport activities took place was mainly mastery oriented ( $M = 4.05$ , with a maximum score of 5), and ratings for the coach-created performance climate were low ( $M = 1.69$ ). Participants also indicated that peers within their team mainly initiated a mastery-involving climate ( $M = 5.13$ , with a maximum score of 7) and ratings for the peer-created performance-involving climate were relatively low ( $M = 3.34$ ). The

highest mastery-involving subscale scores were found for improvement ( $M = 5.26$ ), followed by effort ( $M = 5.07$ ) and relatedness/support ( $M = 5.03$ ). The average number of participants within each programme was 14 (ranging between 6 and 27) ( $M = 14.30$ ,  $SD = 8.77$ ). Participants' ages were between 12 and 22 years ( $M = 15.47$ ,  $SD = 2.15$ ). All respondents attended their programme a minimum of once a week ( $M = 2.99$ ,  $SD = .79$ ) and had practised their sport for at least one year ( $M = 2.69$ ,  $SD = 1.21$ ).

### 4.2. Relationships between Perceived Motivational Climate and Positive Youth Development

Table 3 summarizes the results of the multilevel regression analysis.<sup>1</sup>

For initiative, 5.7% of the variance was explained by the team level. The remaining 94.3% of the total variance regarding initiative could be attributed to differences between participants. We found a significant main effect for mastery coach-created climate. The perceptions of a mastery coach-created climate were significantly positively related to initiative: a one-unit increase in mastery coach-created climate was related to an increase in initiative of 0.33 ( $SE = 0.06$ ,  $p < 0.001$ ) on a 4-point Likert scale. In addition, the analysis revealed a significant interaction effect ( $b = -0.11$ ,  $SE = 0.06$ ,  $p = 0.07$ ) between the participants' nationality and improvement.

**Table 2.** Descriptive statistics for dependent, independent, and control variables (reliability values, means, and standard deviations) ( $N = 200$ ).

Variables		$\alpha$	$M$	$SD$
Dependent variables	YES-S Positive experiences	.852	2.90	.45
	Cognitive skills	.724	2.14	.71
	Goal setting	.746	2.70	.68
	Initiative	.667	3.37	.54
	YES-S Negative experiences	.846	1.31	.43
Independent variables	Coach-created mastery initiating climate	.713	4.05	.66
	Coach-created performance initiating climate	.713	1.69	.65
	Peer-created mastery involving climate	.915	5.13	1.25
	Improvement	.791	5.26	1.38
	Relatedness support	.657	5.03	1.36
	Effort	.808	5.07	1.35
	Peer-created performance-involving climate	.791	3.34	1.26
	Intra-team competition and ability	.639	3.80	1.25
	Intra-team conflict	.807	2.87	1.68
Control variables	Age		15.47	2.15
	Frequency of participation (times/week)		2.99	.79
	Duration of participation (years)		2.69	1.21

Notes: YES-S: Likert scale anchors between 1–4; MCSYS: Likert scale anchors between 1–5; PeerMCSYS: Likert scale anchors between 1–7;  $\alpha$  = Cronbach Alpha values;  $M$  = Mean;  $SD$  = Standard deviation.

<sup>1</sup> Multilevel modelling takes into account the different levels in a hierarchical sample (i.e., group and participant level), by separating the variance attributable to these different levels. This technique was used to examine the relationships between the coach- and peer-created motivational climates and the reported experiences of participants.

**Table 3.** Results of the regression model predicting positive developmental experiences.

Positive YES-S Subscales	Significant predictors	<i>b</i> ( <i>SE</i> )	<i>p</i>	% Variance explained by null model		% Variance explained by predictor		Total	Variances in final model <sup>1</sup>		% Variance explained by model		
				Participant level	Team level	Participant level	Team level		Participant level $\sigma^2$ ( <i>SE</i> )	Team level $\sigma^2$ ( <i>SE</i> )	Participant level	Team level	Total
Initiative	Intercept			94.3	5.7				0.19 (0.02)	0.00 (0.00)	32.0	100.0	35.9
	Mastery coach-created climate	0.33 (0.06)	< 0.001*			16.4	0.0	16.4					
	Improvement Individual level nationality (ref = Belgian)	0.10 (0.04)	0.007*			13.7	100.0	14.1					
	Improvement * individual level nationality	-0.11 (0.06)	0.07										
Personal and Social Skills	Intercept			91.9	8.1				0.13 (0.01)	0.01 (0.01)	30.9	70.6	34.1
	Mastery coach-created climate	0.29 (0.04)	< 0.001*			18.8	62.3	22.1					
Cognitive Skills	Intercept			85.4	14.6				0.35 (0.04)	0.00 (0.00)	19.9	100.0	31.6
	Mastery coach-created climate	0.21 (0.07)	0.003*			4.4	0.0	4.4					
	Performance coach-created climate	0.24 (0.06)	< 0.001*			7.9	0.0	7.9					
	Intra-team conflict	0.06 (0.03)	0.03*			5.1	0.0	5.1					
Goal Setting	Intercept			94.3	5.7				0.34 (0.04)	0.00 (0.00)	24.2	100.0	28.2
	Mastery coach-created climate	0.22 (0.08)	0.005*			4.8	0.0	4.8					
	Effort	0.02 (0.04)	0.59										

Notes: \*  $p < 0.05$ ; <sup>1</sup> The multilevel model was a random intercept model.



This implies that the relationships between the improvement variable and initiative differed according to participant’s nationality (see Figure 1).

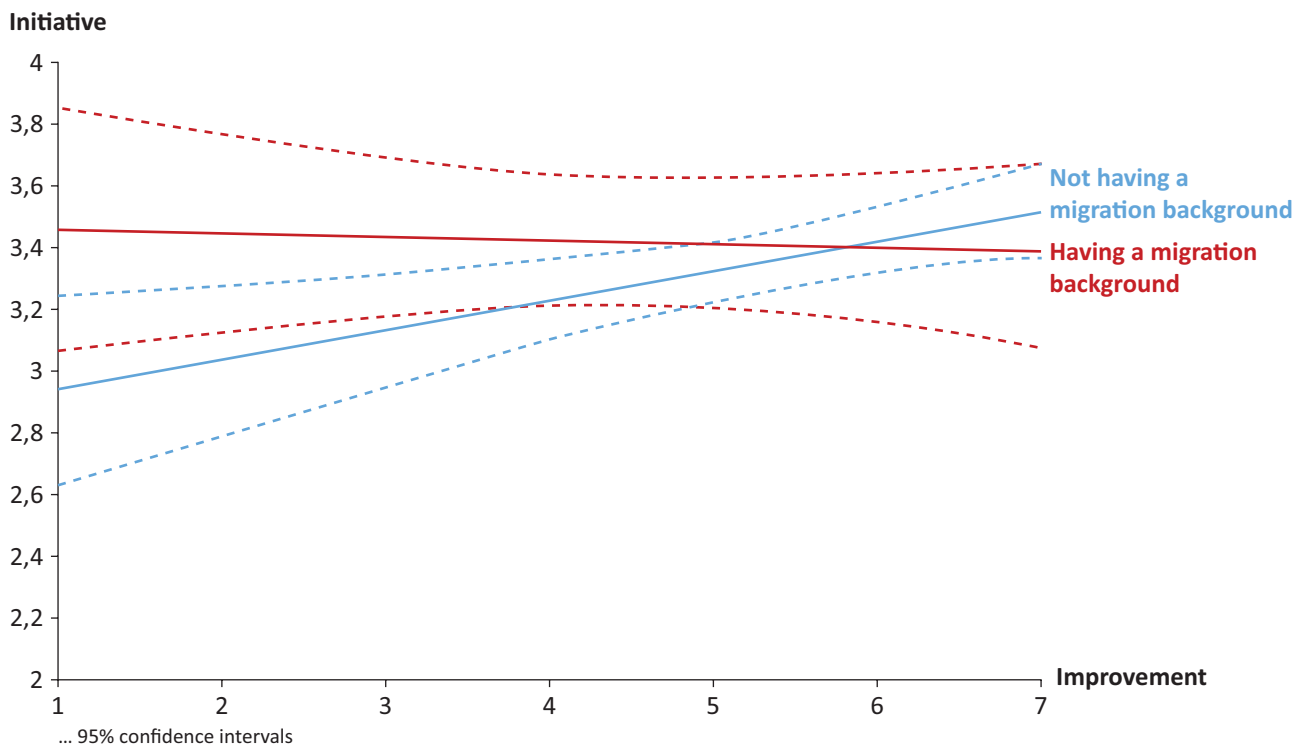
Among Belgian participants, improvement was significantly positively related to initiative experiences. A one-unit increase in improvement was related to an increase in initiative of 0.10 ( $SE = 0.04, p = 0.007$ ) on a 4-point Likert scale. Among participants with a migrant background, no significant relationship ( $b = -0.01, SE = 0.05, p = 0.83$ ) was found between improvement and initiative experiences. The overall model for initiative explained all (100.0%) of the variance at the group level and 32.0% of the variance at the individual level. Overall, 35.9% of the variance in initiative experiences was explained.

For personal and social skills, 8.1% of the total variance appeared to be explained at the team level. The analysis showed a significant positive relationship between a mastery coach-created climate and personal and social skills. The overall model explained 70.6% of the variance at the group level and 30.9% of the variance at the individual level. Overall, 34.1% of the variance in personal and social skills was explained.

For cognitive skills, 14.6% of the total variance was explained at the team level. The analysis showed significant positive relationships for mastery coach-created climate, performance coach-created climate, and intra-team conflict. The overall model for cognitive skills explained all (100.0%) of the variance at the group level and 19.9% of the variance at the individual level. Overall, 31.6% of the variance in cognitive skills was explained.

For goal setting, 5.7% of the total variance was explained at the team level. The analysis showed a significant positive relationship between a mastery coach-created climate and goal setting. The overall model for goal setting explained all (100.0%) of the variance at the team level and 24.2% of the variance at the individual level. Overall, 28.2% of the variance in goal setting was explained.

The analysis regarding negative experiences shown in Table 4 revealed a significant interaction effect ( $b = -0.96, SE = 0.43, p = 0.03$ ) between the respondents’ family structure and effort. This significant interaction effect is illustrated in Figure 2.

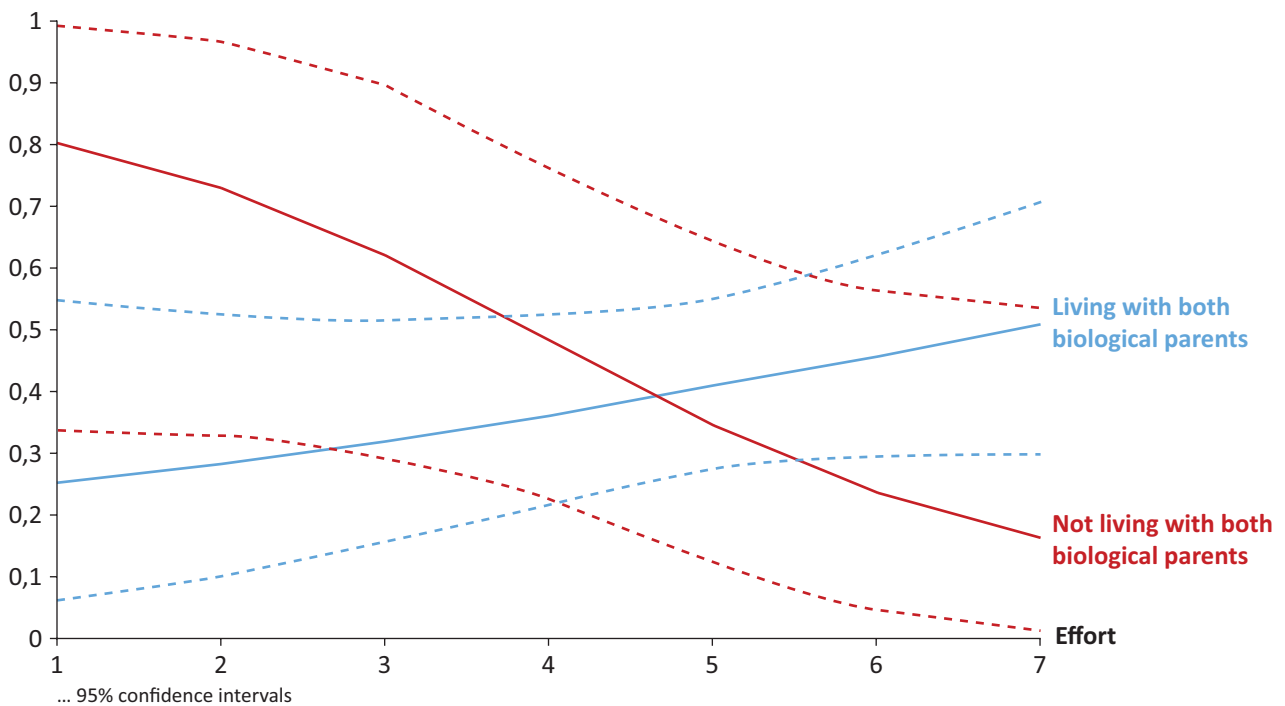


**Figure 1.** Interaction effect for initiative between the respondents’ migration background and level of improvement.

**Table 4.** Results of the regression model predicting negative experiences.

Negative YES-S Subscale	Significant predictors	<i>b</i> ( <i>SE</i> )	<i>p</i>
Negative experiences	Mastery coach-created climate	-0.18 (0.39)	0.64
	Individual secondary education (ref = academic)	-0.69 (-0.40)	0.08
	Mastery coach-created climate * individual educational level	1.17 (0.63)	0.06
	Effort	0.23 (0.19)	0.21
	Individual family structure (ref = intact family)	-0.46 (0.75)	0.54
	Effort * individual family structure	-0.96 (0.43)	0.03

Probability of not reporting  
Negative experiences



**Figure 2.** Interaction effect for the probability of not reporting negative experiences between respondents' family structure and the level of effort.

Among participants from an intact family, effort was not significantly related to the probability of reporting negative experiences ( $b = 0.23, SE = 0.19, p = 0.21$ ). Among participants from a non-intact family, effort was significantly negatively related to the probability of reporting negative experiences ( $b = -0.70, SE = 0.36, p = 0.02$ ). This implies that among participants from a non-intact family, a one-unit increase in effort was related to a 2.00 times ( $= 1/(\text{exponent } (-0.70))$ ) lower odds of not reporting negative experiences. In other words, among participants from a non-intact family, higher levels of effort were related to higher odds of reporting negative experiences.

**5. Discussion**

This study was designed to examine the relationship between coach- and peer-created motivational climates and the self-reported developmental gains that disadvantaged girls derive from their participation in organised sport. It was also set up to investigate whether the effects of these relationships were moderated by participants' individual characteristics (i.e., participants' family structures, educational levels and migration backgrounds).

In the context of this paper, it was assumed that relationships exist between coach- and peer-created mastery-involving climates and positive developmental experiences. The main effects found in this study confirm this hypothesis in part. The results of this study showed that the more coaches create a mastery-oriented climate,

the more likely it is that positive developmental gains will result. This is consistent with previous research related to the motivational climate of young people involved in organised sport in general (Smith et al., 2007) and disadvantaged youngsters in particular (Gould et al., 2012). The results of this study also concur with previous work of Gould and Carson (2011) reporting that coaching actions and behaviours have an important influence on the personal and social development of young people, independently of their socio-economic background. Epstein's TARGET structure is a powerful tool that could help coaches create and enhance the perception that the psychological environment in youth sport is mastery oriented (Epstein, 1989). Based on Epstein's (1989) work, Ames (1992b) identified six teaching structures for achievement situations which include task, authority, recognition, grouping, evaluation, and time structures (TARGET). These structures influence the motivational climate of a situation and each one is presented alongside a set of guidelines which aid in fostering a mastery climate. The TARGET model has also been adapted to a sports environment by Treasure (1993) and has proven to be a very useful framework, which can be manipulated by coaches to influence the perception of a mastery climate (Hasan, 2011). Mediation analysis could indicate to what extent the TARGET structures mediate the relations between the coach-created climate and the developmental experiences of youth. Such an approach would provide us with more insight into the power of the coach to instigate developmental processes among youth sport partic-

ipants. Some of the relationships between Positive Youth Development and motivational climate appeared to be, however, more complex than initially thought. Our findings indicated that a peer-created (i.e., intra-team conflict perception scores) and, to a greater extent, a coach-created performance climate were both positive contributors to the development of cognitive skills. These results indicate two important things. Firstly, assessing the coach-created motivational climate is not sufficient when examining the motivational environment in youth sport, as peers can also be an important source of influence. Secondly, a perceived performance-oriented climate can also have a positive influence on sport participants' developmental gains. Although most previous work indicated that mastery climates were related to positive emotional and cognitive development and performance climates to negative development (e.g., Duda & Balaguer, 2007), there are some recent studies by MacDonald et al. (2011) and Gould et al. (2012) which also found that coach-created performance climates can have a slight positive impact on the perceived Positive Youth Development of youth sport participants. Gould et al. (2012) argued that this could be a result of a mixed coaching climate in which coaches facilitate high levels of mastery-orientation and low levels of performance-orientation.

Besides the aforementioned relationships, it was also assumed that the individual characteristics of disadvantaged girls—migration background, low educational track, non-intact family—would moderate the effect of the relationship between developmental gains and perceptions of the coach- and peer-created motivational climate. However, the interaction effects found in this study did not confirm this hypothesis. Our results showed that higher improvement peer climate perception scores were associated with significantly higher scores for personal initiative among Belgian respondents. This interaction effect indicates that girls with no migrant background benefit more from specific mastery-oriented cues of peers (i.e., related to improvement) than girls with a migrant background. With the achievement goal theory in mind, we might suggest that individuals' own goal orientations could explain this result. In other words, these girls' perceived motivational climate was related to their own goal orientations. This assumption is based on work done by Roberts and Ommundsen (1996) examining the relationship between motivational climate and the goal orientations of sport participants. They pointed out that sport participants with a high task orientation perceived the motivational climate as mastery-oriented, whereas ego-oriented individuals perceived the motivational climate as performance oriented. Another important result that deserves attention is the interaction effect found between the respondent's family structure and the effort peer climate perception scores. What should be underlined is the fact that these specific mastery-oriented cues of peers (i.e., related to effort) could hinder the perceived Positive Youth Development

of girls from non-intact families because such cues appeared to increase the chance of reporting negative experiences among these young people. The most likely explanation for this result is that if situational cues (i.e., cues related to the peer-created motivational climate) are not strong enough, then dispositional orientations may not be overridden. This speculation is in line with research done by Dweck and Leggett (1988). They found that one of the two constructs (i.e., an individual's own dispositional goal orientation and perceived situational goal structure) may override the other if it is strong enough. However, participants' ego orientation could also be higher due to peers' mastery-oriented cues. It could be that mastery orientation in peers may encourage participants to try harder but that girls (most likely children and young adolescents) who have not yet developed personal theories of achievement and strong goal orientations do not clearly differentiate between trying to learn and develop personal skills, and trying to achieve outcome-oriented goals.

In practical terms, the way to foster a coach- and peer-created climate high in mastery-orientation and low in performance-orientation does not seem to be obvious. There are, at least, two practical aspects that could hinder such a motivational climate in an organised sport context. In relation to the coach-created climate, we would like to indicate that the out-of-school club structure in Flanders largely depends upon volunteer coaches with a range of motivational orientations. In addition, it has to be indicated that a high percentage of these coaches do not have pedagogical qualifications. An interesting question, raised by Gould et al. (2012), is whether or to what degree those volunteer coaches who adopt a performance-oriented or mixed coaching climate are capable and willing to change to a high mastery climate. In relation to the peer-created climate, it has to be indicated that several influencing factors exist. The peer-created climate might, for example, develop from the achievement goal dispositions of a few dominant sport participants in a team (Carr, Weigand, & Jones, 2000). However, if some of these dominant sport participants decide to leave their team during the season or are replaced by new players who are even more dominant, this may have a positive or negative impact on the mastery-involving peer climate. Other researchers suggested that the peer- and coach-created climates do not operate independently from each other (Carcia-Calvo et al., 2014; Ntoumanis, Vazou, & Duda, 2007). They suggested that the peer-created climate is to some extent an indirect outcome of the coach-created climate. However, to the best of our knowledge this relationship has yet to be empirically determined.

It is interesting to note that our respondents did not have many negative experiences. This finding should not be underestimated, in particular for disadvantaged girls, because there is research evidence indicating that young people who experience an accumulation of negative experiences in different societal institutions (e.g., educa-

tion) are more likely to become depressed, misuse substances, and engage in other dangerous behaviour (Chassin et al., 2004). We also have interesting results relating to the type of benefits that our respondents derived from their participation in sport. They perceived initiative, personal and social skills, and goal setting as the benefits they most often derived from their participation in sport. The two last factors may prove to be very valuable because experiences in these domains of learning can also foster positive effects in other facets of young people's lives (Gould et al., 2012). There is, however, a broad consensus among researchers that life skills, defined as the skills that are required to deal with the demands and challenges of everyday life (Hodge & Danish, 1999), are not necessarily transferred into other social settings. It has been suggested that an essential part of the process of coaching life skills is making young people aware of both the skills they learn in the context of sport and the possibilities they have of using those acquired skills in other life domains (Danish, Petitpas, & Hale, 1990).

Furthermore, our study has several limitations that should be acknowledged. Firstly, although self-reporting has been regarded as a good method of assessing girls' experiences in sport activities, this methodology also has several limitations (e.g., social desirability). Future research in this area would do well to assess objective markers (e.g., observation instruments) of motivational climate and Positive Youth Development. Secondly, we looked at girls involved in urban dance and martial arts programmes. Although the analysis was adjusted for this variable, we have indicated elsewhere (Schailée, Theeboom, & Van Cauwenberg, 2015) that practising two different sports could offer distinct social contexts (e.g., the broader social system of an urban dance team) and opportunities for socialisation (e.g., the greater amount of one-on-one quality time of a martial arts participant). Thus, the generalisation of our findings to population samples should be made with caution. Thirdly, the findings of this study are based on correlational data at one single point in time and do not allow for conclusions of direction or cause. Future studies could further explore the relevant causal relationships by using longitudinal data. Fourthly, we had substantial age differences in our sample (i.e., 10 years). Although we adjusted our analyses for age, this does not rule out that the experiences of a 12-year-old are probably different from those of a 22-year-old in the same motivational climate. There is, for example, empirical evidence showing that older athletes (14–17 years old) perceive more ego-oriented cues than younger athletes (12–13 years old), who reported mixed perceptions of the dominant motivational cues (Vazou et al., 2006). According to the achievement goal theory, older adolescents experience greater cognitive maturation and are therefore able to perceive more ego-oriented cues in the environment (Nicholls, 1989). We might expect older sport participants to report less Positive Youth Development in a mainly ego-oriented climate compared to younger athletes. However, if such

differences among age categories with respect to ego-oriented cues and perceived Positive Youth Development exist in organised youth sport programmes has yet to be empirically determined.

A major challenge for this study was to determine the extent to which the respondents fitted the description of 'disadvantaged youth'. There are two reasons for this: (1) while commonly used, the term 'disadvantaged youth' is vague, and (2) consequently hard to measure. In addition, there are a number of related terms used, both in the literature and in policy documents, such as 'youth-at-risk', 'disconnected youth', 'socially excluded youth', 'disaffected youth', or 'socially vulnerable youth' (e.g., Bendit & Stokes, 2003). Most of these terms share a common notion: they refer in essence to young people with fewer opportunities to thrive or develop the positive characteristics that mark a healthy young person and are therefore in a 'disadvantaged' position (Butts, Bazemore, & Meroe, 2010). Vettenburg (1998) referred to the concept of 'social vulnerability' by considering this disadvantage as a result of an accumulation of negative interactional processes with society institutions such as school, the labour market, health care, and police. This theory of social vulnerability describes how both structural factors (i.e., family income, housing quality, and neighbourhood status) and cultural factors (i.e., peer pressure and influences, attitudes towards school and education) influence some youngsters' situation. Walgrave (1992) indicated that it is intrinsically difficult to define young people in vulnerable situations because they constitute a heterogeneous group (just like all young people). Haudenhuyse (2012) noted more recently that a social-vulnerability scale has not yet been developed. He also questioned the usefulness of such a scale because determining an individual's social vulnerability is related to processes (e.g., assessment of negative experiences related to stigmatisation) that are dependent on the context in which they take place. He therefore suggested that a more appropriate procedure would be to examine the characteristics of young people in socially vulnerable situations. One of the most frequently mentioned features here relates to the socio-economic status of the family which includes: (a) parents' educational level, (b) parents' occupational level, and (c) the total income of the family (Currie, Elton, Todd, & Platt, 1997; Ensminger et al., 2000; Hupkens, Knibbe, & Drop, 2000; Lien, Friestad, & Klepp, 2001; Vereecken, Maes, & De Bacquer, 2004). Pilot testing however showed that we could not include these variables in our sample as many of the younger girls were not able to provide information of their family's socio-economic status. Other researchers reported similar limitations (e.g., West, Sweeting, & Speed, 2001). We therefore looked for alternative measures to determine the extent to which participants fitted the description of our study's target group. These measures related to a number of characteristics that have been investigated very extensively in relation to disadvantaged youth: these relate to migration background, low/short educational

tracks (i.e., technical/vocational secondary school programmes), and single parent household structure (Sabo & Veliz, 2008; Scheerder, Taks, & Lagae, 2007; Smith, Thurston, Green, & Lamb, 2007). In addition, we made use of the insights provided by conversations we had with coordinators and other key witnesses (e.g., coaches, youth workers). They assured us that the majority of the participants in their programmes were in a situation of social vulnerability (migration background, limited comprehension of Dutch, school fatigue, amongst others) and/or challenging family situations (e.g., single parent households, low income, low educational tracks of parents and other family members), and often did not participate in other organised leisure activities.

## 6. Conclusion

It is essential to return to our central question of whether both coach-created and peer-created motivational climates can affect the perceived Positive Youth Development of disadvantaged girls in organised sport programmes. This is a relevant question as a large body of research shows that coaches and peers can both be important sources of influence (Carcia-Calvo et al., 2014). To date there have been, however, only a very limited number of studies that examine the joint role of the coach- and peer-created motivational climates in sport (e.g., Ntoumanis et al., 2012). The present study is the first one that looks at the roles of both the coach- and peer-created motivational climates in predicting Positive Youth Development in youth sport participants in general, and disadvantaged girls in particular. Taken together, the results of this study indicate that a mastery-oriented coach climate is a very strong predictor of perceived Positive Youth Development, based on the number of developmental domains on which it had a significant impact and the explained variance based on the PRV values of the multi-level models. Although it has been suggested that such group-aggregated perceptions of the overall team climate are important (Papaioannou, Marsh, & Theodorakis, 2004), such analyses have rarely been conducted (an exception is Ntoumanis et al., 2012). Furthermore, the present results for the interaction effects indicate that girls from a non-intact family and those with a migration background appeared to be less positively influenced by peer climate predictor variables than their peers from an intact family and those without a migration background. Unlike previous research on disadvantaged youth in general (e.g., Blomfield & Barber, 2010) and disadvantaged girls in particular (Schaillée et al., 2015), the observed interaction effects have not shown that disadvantaged girls necessarily gain more from their involvement in organised activities (such as sport). Future research that employs qualitative methods (e.g., interviews) could be conducted to ascertain if girls from a non-intact family and with a migration background are consistently less positively influenced by the climate created by their peers and if so, why.

It should also be recognised that the coach- and peer-created motivational climates examined here only represent a small subset of the variables which are related to sport programmes and likely to affect developmental gains. The statistical models of our study show that about 28.2–35.9% of the variance in the different development domains are linked to the variables included in our statistical models (e.g., motivational climate, type of sport, group composition, etc.). When the total variance explained by the statistical models in this study is compared with the results of a previous study (Schaillée et al., 2015) which included the same population sample and variables except for the motivational climate, it seems that about 1.3–20.6% additional variance is explained in the different development domains (respectively cognitive skills and initiative). It should also be noted that there is still a large number of these positive experiences that must be explained by other variables. As mentioned in a previous study, one specific factor (e.g., group composition) is likely to be part of a complex web working with other contextual variables to foster Positive Youth Development in a sport context (Schaillée et al., 2015). However, differences related to initiative, cognitive skills, and goal setting cannot be further explained by other contextual factors at the team level. Conversely, such differences in other domains of learning (i.e., personal and social skills) can still be explained at least in part by other aspects which may differ at the team level. Although the social and psychological climate is multidimensional (i.e., it is a setting in which all social and psychological factors help to shape perceptions of what is valued), this research has been narrow, focusing mainly on one dimension, namely the motivational climate. Future research could focus on another dimension simultaneously. This dimension could be related to social and relational aspects of that environment which has been theoretically termed the caring climate (Newton et al., 2007).

Despite its limitations, we believe that this study makes a contribution to the literature by examining the concurrent predictive effects of the coach- and peer-created motivational climate on perceived Positive Youth Development in disadvantaged girls at two different levels of analysis (i.e., the individual level and group level). Future research in the domain of Positive Youth Development could build upon this study by incorporating measures of coach- and peer-created climates and examining whether differences exist between coaches' and peers' reports of the motivational climate they create and the athletes' perceptions of these climates. This research approach would be valuable because similar research in school physical education has indicated large discrepancies between students' and teachers' reports of the motivational climate created by the teacher (Taylor & Ntoumanis, 2007). However, if such discrepancies with respect to coach- and peer-created climates exist in organised youth sport programmes has yet to be empirically determined (Carcia-Calvo et al., 2014).



## Conflict of Interests

The authors declare no conflict of interests.

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### About the Authors



**Hebe Schailleé** works as a post-doctoral researcher at the Faculty of Physical Education and Physiotherapy of the Vrije Universiteit Brussel, Belgium. Hebe is a member of the 'Sport and Society' research group. She has a special interest in the analysis of positive developmental outcomes that young people in general and disadvantaged youth in particular derive from their participation in organised sport. Her work focuses mainly on girls and women. She is currently a member of the research team of the CATCH (Community sports for AT-risk youth: innovative strategies for improving personal development, health and soCial coHesion) project.



**Marc Theeboom** works as a full professor at the Faculty of Physical Education and Physiotherapy and the Faculty of Psychology and Educational Sciences of the Vrije Universiteit Brussel, Belgium. He is chair of the research group 'Sport and Society'. His research primarily focuses on educational and policy-related aspects of (youth) sport in general and specific target groups in particular. He has a special interest in the analysis and evaluation of 'sport development' programmes in which sport is regarded as a social instrument and a means of community development.



**Jelle van Cauwenberg** works as a post-doctoral researcher at the Faculty of Medicine and Health Sciences of the Universiteit Gent. His research primarily focuses on environmental determinants of physical activity and e-bike use among older adults. He is also involved in projects concerning sedentary behaviour, active transportation in children and adults, and sport participation of disadvantaged youth.